Global Zero and Deterrence Credibility

A Critical Analysis of Obama`s Nuclear Policy and Extended Nuclear Deterrence Credibility on the Korean Peninsula

Mathias Ganss

Master`s Thesis - Peace and Conflict Studies
Institute of Political Science

University of Oslo

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http://www.duo.uio.no/

Trykk: Reprosentralen, Universitetet i Oslo
Summary

This thesis is a qualitative case study analysis of the whether the nuclear policies of President Obama has weakened the U.S. extended nuclear deterrence credibility on the Korean Peninsula. To answer this, the thesis employs two strategies: First, two variables are discussed; a nuclear capabilities-variable; and a nuclear policy-variable. The purpose is to assess the impact the New START treaty has on U.S. nuclear capabilities, and to assess the implications of Obama’s nuclear policy, expressed in the 2010 Nuclear Posture Review (NPR), for extended nuclear deterrence credibility.

Second, the deterrence situation on the Korean Peninsula is examined in detail. This is done in an effort to uncover evidence of weakened extended nuclear deterrence credibility. By first analyzing the hostile actions of North Korea, the thesis discusses whether the actions since 2008 are caused by internal or external factors. Thereafter, the South Korean responses to the 2010 NPR are discussed, and considerable time is devoted to the calls for redeployment of U.S. tactical nuclear weapons, and whether these calls can be attributed to weakened extended nuclear deterrence credibility.

The discussions of the two variables, and the deterrence situation on the Korean Peninsula, paint a clear picture: President Obama’s nuclear policies, as expressed in the 2010 NPR and New START, have not weakened the extended nuclear deterrence credibility on the Korean Peninsula. First, the impact of New START on the U.S. strategic nuclear arsenal is small, and all war-waging abilities remain the same, as well as secure second-strike capability. Second, the 2010 NPR, although attempting to reduce the salience of nuclear weapons in U.S. strategic thinking, reaffirms the commitment to defend allies with nuclear weapons. Furthermore, North Korea is exempt from the Negative Security Assurance provided in the NPR. And third, the actions of North Korea are generated by internal, not external factors, and the South Korean calls for redeployment of tactical nuclear weapons are generated by the North Korean actions, not by weakened U.S. extended nuclear deterrence credibility.
# Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ABMT</td>
<td>Anti-Ballistic Missile Treaty</td>
</tr>
<tr>
<td>CEP</td>
<td>Circular Error Probable</td>
</tr>
<tr>
<td>CTBT</td>
<td>Comprehensive Test Ban Treaty</td>
</tr>
<tr>
<td>DJNO</td>
<td>Doctrine for Joint Nuclear Operations. Document discovered 2005</td>
</tr>
<tr>
<td>DMZ</td>
<td>Demilitarized Zone on the border between North and South Korea</td>
</tr>
<tr>
<td>FAS</td>
<td>Federation of American Scientist</td>
</tr>
<tr>
<td>ICBM</td>
<td>Intercontinental Ballistic Missile</td>
</tr>
<tr>
<td>MAD</td>
<td>Mutual Assured Destruction</td>
</tr>
<tr>
<td>MIRV</td>
<td>Multiple Independently Targeted Reentry Vehicle</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
</tr>
<tr>
<td>NPR</td>
<td>Nuclear Posture Review</td>
</tr>
<tr>
<td>NPT</td>
<td>Treaty on the Non-Proliferation of Nuclear Weapons, signed 1968, effective 1970</td>
</tr>
<tr>
<td>NSA</td>
<td>Negative Security Assurance</td>
</tr>
<tr>
<td>ROK</td>
<td>Republic of Korea</td>
</tr>
<tr>
<td>SALT</td>
<td>Strategic Arms Limitation Talks</td>
</tr>
<tr>
<td>SCM</td>
<td>Security Consultative Meetings between the U.S. and the ROK.</td>
</tr>
<tr>
<td>SLBM</td>
<td>Submarine-Launched Ballistic Missile</td>
</tr>
<tr>
<td>SORT</td>
<td>Strategic Offensive Reductions Treaty, or “Moscow Treaty”, of 2002</td>
</tr>
<tr>
<td>SSBN</td>
<td>Nuclear powered ballistic missile submarine.</td>
</tr>
<tr>
<td>SSGN</td>
<td>Nuclear powered, guided (non-nuclear) ballistic missile submarine.</td>
</tr>
<tr>
<td>USFK</td>
<td>United States Forces Korea</td>
</tr>
<tr>
<td>WMD</td>
<td>Weapons of Mass Destruction</td>
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Acknowledgements

I would like to thank my supervisor Dr. Michael Mayer, for his encouragement and constructive criticism, and for promptly responding to all my queries at all hours of the day. I thank you for putting up with my ability to push deadlines, and for your guidance and expertise.

A special thank you to Tyler Dale Hauger for invaluable comments and suggestions to all of my chapters. I thank you for our great discussions and for your ability to analyze and put things in perspective. Your fingerprints are on every page.

My deep appreciation to the Norwegian Institute for Defense Studies for financial support, and for letting me be part of the Nuclear Studies Group.

To my family, Inger Helene, Rüdiger and Susanne: I thank you for all your love, and for all our funny and interesting discussions. You made me the inquisitive person I am, making me enjoy the search for knowledge and giving me the ability to find the truth on my own.

Last, and most importantly, I want to thank my beautiful Stine, for her patience, for her encouragement, and for putting up with my strange work habits. It is certainly not easy to live with a night owl, who gets up in the middle of the night because an idea just presented itself. You have supported me throughout this process, sometimes guiding me softly, sometimes dragging me along. For that I am grateful.

All mistakes and omissions in this work are mine.

Mathias Ganss
Oslo, October 2012.
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Chapter 1

Introduction

Controlled, universal disarmament is the imperative of our time. The demand for it by the hundreds of millions whose chief concern is the long future of themselves and their children will, I hope, become so universal and so insistent that no man, no government anywhere, can withstand it.

Dwight D. Eisenhower,
New Delhi, 10 December 1959

Almost every American president, from Eisenhower, to Kennedy, to Reagan, to George W. Bush, have stated their desire to rid the world of nuclear weapons. Yet, more than 67 years after the first nuclear detonation, nuclear weapons are still very much part of great power politics. Comprehensive nuclear disarmament has proven an elusive goal. In Barack Obama’s first major foreign policy speech, given to the Chicago Council on Global Affairs in April 2007, he cautiously echoed the calls for disarmament uttered by presidents before him: “If we want the world to deemphasize the role of nuclear weapons, the United States and Russia must lead by example” (Obama 2007). After his election, in his first major international speech held in Prague, Barack Obama placed nuclear disarmament at the top of his foreign policy agenda:

So today, I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons. I'm not naive. This goal will not be reached quickly -- perhaps not in my lifetime. It will take patience and persistence. But now we, too, must ignore the voices who tell us that the world cannot change. We have to insist, "Yes, we can".

Obama 2009

However, President Obama’s vision, dubbed “Global Zero”, is not without reservations: “Make no mistake: As long as these weapons exist, the United States will
maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that
defense to our allies — including the Czech Republic” (ibid.). Obama reassures allies
that the United States will provide extended deterrence to states living under the
nuclear umbrella, even as the United States seeks to eliminate nuclear weapons.

President Obama wasted no time in pushing for nuclear disarmament. On 8
April 2010 he signed the new bilateral Strategic Arms Reduction Treaty with Russia,
known as New START. The treaty limits the number of deployed strategic nuclear
weapons to 700 delivery vehicles and 1550 warheads (New START 2010). At the same
time, the Nuclear Posture Review was published, an extensive outline and analysis of
the nuclear weapons in the U.S. arsenal, and the policy that guides U.S. strategic
deterrence. It is designed to be a roadmap towards implementing Obama’s “Global
Zero”.

1.0 Extended Nuclear Deterrence in East Asia
The strategic situation in Europe changed drastically after the Soviet Union imploded.
The greatest threat to NATO vanished almost overnight, and permitted the first
comprehensive nuclear disarmament. This period of relaxed tension in Europe is
contrasted by maintenance of, and even increasing tension in East Asia. On the Korean
Peninsula, North Korea has engaged in repeated hostile acts against South Korea over
the last decades. These hostile acts became more serious when, early in President
Bush’s first term, Pyongyang’s nuclear weapons program became known.,

Today, it is in East Asia that the security guarantees extended by the United
States are challenged. Both Japan and South Korea are protected by the U.S. nuclear
umbrella, a pledge that the United States will defend these vital allies by all means,
including nuclear weapons. For Japan, China’s military and economic growth is a
source for concern, and the Senkaku Islands crisis in the summer of 2012 exemplifies
this. For South Korea, its neighbor in the North is behaving erratic, and level of
tension between the two appears to be at its highest level in decades. For Japan and
South Korea, a strong U.S. extended nuclear deterrence is viewed as essential for their
security, maybe now more than ever. For them, President Obama’s Global Zero
initiative might not be as easy to embrace, as for their European counterparts.

2.0 Research Question
The previous outline highlights a paradox: The desire to rid the world of nuclear weapons, can for some mean insecurity rather than security. Arms reduction can weaken the credibility of the promise to protect allies with nuclear weapons. This thesis is concerned with the problem of extended nuclear deterrence credibility and nuclear arms reduction.

The central research question of this thesis is:

Has President Barack Obama’s Global Zero initiative, as expressed in the 2010 NPR and New START, weakened the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula?

I attempt to answer that question by employing two strategies: First, I utilize deterrence theory to identify two independent variables: The first variable is U.S. nuclear capabilities: The limits of New START is compared to the current nuclear arsenal of the United States, and the impact of the planned arms reductions on extended nuclear deterrence credibility is discussed and assessed. The second variable is U.S. nuclear policy. By comparing and analyzing U.S. nuclear policy under President Bush and President Obama, the differences, and consequent changes, in nuclear policy are highlighted and analyzed. The implications of these changes for U.S. extended nuclear deterrence credibility on the Korean Peninsula, are then gauged and discussed.

Second, I explore the deterrence situation on the Korean Peninsula in an attempt to find proof of a weakened U.S. extended nuclear deterrence credibility. The hostile actions of North Korea over the last decade are analyzed to see if the apparent increase in hostilities can be attributed to lacking U.S. extended nuclear deterrence credibility. Thereafter, the South Korean responses to the 2010 NPR are investigated, before turning to the recent calls for redeployment of U.S. tactical nuclear weapons heard in South Korea. The central question is whether it is a weakened credibility that is
causing these calls, or whether they can, or should be attributed to other factors.

2.1 Why Credibility is Important
There are three fundamental reasons for why failed extended deterrence credibility can be dangerous: One, if the nuclear threat is indeed hollow, and an adversary challenges the threat, inaction by the deterring state will lead to a complete loss in deterrence credibility. Two, if the threat is honest, but not believed, an adversaries might attack, believing there will be no consequences, but in fact face a response by the deterring state, leading potentially to a highly dangerous conflict escalation. Third, if the states with nuclear security guarantees no longer believe in the sincerity of the guarantee, they might be tempted to develop their own nuclear weapons.

The second is arguably the most dangerous one, and can lead to full scale war between the attacking adversary and the deterring state. The first can lead to other adversaries seizing on the situation, and challenging extended deterrence elsewhere. And the third might lead to nuclear proliferation. These arguments say nothing of whether deterrence works or is illusory, but as long as extended nuclear deterrence is proclaimed, maintenance of credibility is imperative.

3.0 Outline of Thesis
This thesis is comprised of seven chapters. Chapter 2 outlines the methodology and research design of the thesis. Important topics such as validity and reliability, theory selection, and justification for the case study research design, are discussed.

Chapter 3 provides a short introduction to the theory of Realism, before turning to a more profound analysis of deterrence theory and extended deterrence. The concept of credibility in deterrence in general, and in extended nuclear deterrence in particular, is analyzed in length.

Chapter 4 is an analysis of the capabilities-variable, with focus on the strategic nuclear capabilities of the United States, and the New START limits. Considerable amount of
space is devoted to explain the three legs of the strategic nuclear triad, its delivery vehicles, and associated warheads. The current strategic arsenal is then compared to the limits in New START. The chapter features a rather short discussion of the impact of New START on extended nuclear deterrence credibility. The discussion is short because there is little reason to expand upon the earlier findings.

Chapter 5 is devoted to the nuclear policy-variable, and is a lengthy discussion of the 2010 Nuclear Posture Review and Obama’s nuclear policy. The 2010 NPR is compared to the 2001 NPR and the secret 2005 Doctrine for Joint Nuclear Operations. The Negative Security Assurance in the 2010 NPR is discussed, and considerable space is devoted to discuss the effort to reduce the salience of nuclear weapons in U.S. strategic thinking.

Chapter 6 features the exploration of the deterrence situation on the Korean Peninsula. Of central importance are the hostile acts of North Korea and whether they are driven by external or internal factors, and whether weakened extended deterrence credibility is the cause of the apparent increase in hostile acts since 2008. Thereafter the chapter turns to South Korean responses to the 2010 NPR. The brunt of the chapter is devoted to the calls for redeployment of tactical nuclear weapons, and the calls for development of a South Korean nuclear weapon.

Chapter 7 is the conclusion. Because of the lengthy conclusions provided in chapters 4, 5 and 6, chapter 7 is rather short. It summarizes the findings, and concludes that there is very little evidence, if any, to suggest that Obama’s Global Zero initiative, expressed in the 2010 NPR and New START, has weakened the U.S. extended nuclear deterrence credibility on the Korean Peninsula. The chapter concludes with a suggestion for further research, and some reflections about this research project.
Chapter 2

Methodology and Research Design

1.0 Introduction

This thesis is a qualitative case study analysis of the effects of “Global Zero”, New START and the 2010 NPR on U.S. extended nuclear deterrence credibility. It uses the conflict on the Korean Peninsula as a case. It is deductive in that it utilizes deterrence theory to identify and analyse key concepts so as to be able to explain and predict changes in the independent variables on the dependent variable (Bryman 2008:9). The case of deterrence on the Korean Peninsula is chosen because of several reasons: First, the amount of research done on extended deterrence in Europe is vast, while the body of research on extended deterrence in East Asia is limited. Second, the recent nuclear weapons arms reduction treaties signed by the U.S. are only bilateral, involving Russia. This leaves the nuclear weapons of other nuclear weapons states unaffected, and the research done on unilateral arms reduction on extended deterrence is absent. The effect of unilateral arms reduction in a bilateral relationship seems logically different from bilateral arms reduction. Third, while the power relationship between Russia and the United States appears to have stabilized, and there is little shift in power, the power relationships in the Pacific is more volatile, with China growing stronger both economically and militarily, and power politics appear to be more prominent in East Asia than in Europe. Fourth, while the security guarantees extended by the United States in Europe have remained unchallenged for decades, the U.S. security guarantee to South Korea is challenged regularly. I argue that if extended nuclear deterrence has indeed been weakened, proof of this is easier to find in conflictual relationships. These four reasons together present a gap in the literature and
discourse which warrants further research.

This research is what Alan Bryman calls an exemplifying case (sometimes termed the representative or typical case) (Bryman 2008:56). R.K. Yin defines its objective as “[...] to capture the circumstances and conditions of an everyday life or commonplace situation” (quoted in Bryman 2008:56). The case is chosen not because it is extreme or unique, but because it is an example of deterrence that is under-studied. The unit of analysis is US extended nuclear deterrence in the Pacific, and the aim of the study is not to improve theory, but to be guided by theory to say something meaningful about the case. Consequently, the research is guided by an interpretivist epistemological position, meaning “[...] the stress is on the understanding of the social world by an examination of that world by its participants” (Bryman 2008:366).

This chapter will first lay out the defining features of qualitative case studies, before I justify the selection of deterrence theory as my tool of analysis. I then turn to the basic elements of logical reasoning and deductive thinking, before I identify the core variables that this research focuses on. The chapter ends with a discussion of validity and reliability and how I have attempted to maximize both.

1.1 Qualitative Case Study Analysis

The debate between quantitative and qualitative research design has been going on for decades, and there appears to be a clear divide. This is exemplified by George and Bennett (2005:4) when they point out that The Journal of Conflict Resolution and International Security publish almost exclusively quantitative and qualitative articles respectively. For this thesis, the case study design is better suited for an in-depth analysis of my object of study.

The definition of case study research varies some from scholar to scholar. Alan Bryman (2008:52) defines a case study as “[...] the detailed and intensive analysis of a single case”. John Gerring (2007:37) defines a case study along similar lines as“[...] an intensive study of a single unit or a small number of units (the cases), for the purpose of understanding larger class of similar units (a population of units)”. Alexander George and Andrew Bennett (2005:5) seem to agree: “the detailed examination of an
aspect of an historical episode to develop or test historical explanations that may be
generalizable to other events”. George and Bennett’s definition is interesting because it
mentions generalization as a possible goal of case study research. Generalization is for
some social science scholars the supreme goal of scientific research. Said by Sir
Francis Baken in 1620:

There are and can only be two ways of searching and discovering truth. The one flies
from the senses and particulars to the most general axioms. [...] The other derived
axioms from the senses and particulars, rising by a gradual and unbroken ascent, so that
it arrives at the most general axioms last of all. This is the true way [...] 
Quoted in Stake 1978:6

William Blake argued the opposite: “To generalize is to be an idiot. To particularize is
the lone distinction of merit. General knowledge are those that idiots possess” (quoted
in Stake 1978:6). The generalizability of case study research is highly debatable. This
is because the causal mechanisms identified in one or a few cases might not be present
in other cases, and there is no way of knowing whether they are without studying the
other cases as well. Case study research can, however, contribute to generalization by
identifying causal relationships that can be tested over a larger sample of cases. This
can lead to so-called “cumulatively contingent generalizations” (George & Bennett
2005:31), which can be illustrated by a giant mosaic: By studying each little piece, the
pieces can be put together to form a highly detailed picture of the mosaic. If, on the
other hand, one attempts to identify common features of all the little pieces, and then
put those common features together, the result would be a picture with very few
nuances. One would miss all the little variations in each piece that actually make up
the mosaic.

The primary goal of case study research is not generalizability. The primary
goal is deep insight and understanding of the object under study. I do hope that my
study can say something general about the impact of New START and the NPR on
extended nuclear deterrence credibility, but the reliability of such a generalization will
be limited since I have only studied one case.

I must stress that this thesis should not be read as normative in regards to
whether nuclear disarmament is safe or dangerous, or whether Barack Obama`s policies are “good” or “bad” for America, its allies, or adversaries. That is a debate which I do not attempt to contribute to.

1.2 Theory Selection
Throughout most of the Cold War, political realism was the dominant theory, but liberalism and constructivism has gained popularity and strength over the last decades. The selection of deterrence theory has several benefits. First, the body of research on deterrence theory is enormous. Second, the theory was solely designed to explain and predict decision making in a conflictual world with nuclear weapons. And third, since the object under study is how the New START treaty, and Obama`s nuclear policy impacts extended nuclear deterrence credibility, deterrence theory is the obvious choice. The core elements of deterrence theory will be presented in chapter 3. Needless to say, deterrence theory has had, and has, its share of critics, and some of the criticism is valid. Due to space constraints, this thesis will not discuss the critique of deterrence theory. For an extensive analysis of this critique, I refer the reader to chapter 3 of Alexander L. George and Richard Smoke`s (1974) excellent book Deterrence in American Foreign Policy: Theory and Practice.

1.3 Logical Reasoning and Deductive Theory
A logical argument is built in two parts; premises; and conclusions. In order for an argument to be logically strong, the premises must be sound, and the conclusions must follow from the premises. In most social science research, empirical evidence rarely can be taken at face value. This affects the internal validity of the research: If empirical evidence is interpreted wrong, and thus the premises of the arguments are wrong, the conclusions drawn from the evidence will be wrong. It follows that empirical evidence must be examined rigorously in every instance to secure the internal validity of the research. This is the essence of deductive theory: It is based on the logical connection between sound conclusions based on correctly interpreted facts.
1.4 Variables
The measurement of credibility is complicated, and cannot be measured quantitatively. Nevertheless, this thesis will analyse and discuss two variables that are integral to deterrence credibility: Nuclear capabilities and nuclear policy.

The effects of nuclear arms reduction on nuclear capabilities can be measured quantitatively. The thesis will outline today’s US nuclear capabilities in the so-called nuclear triad. The effect of the nuclear arms reductions proposed in New Start will be compared to that of today’s capabilities, and the impact on credibility will then be discussed qualitatively. Nuclear policy cannot be measured quantitatively, so the analysis and discussion of this variable is based solely on the qualitative research method.

In order to find evidence of weakened extended nuclear deterrence credibility, I will examine the deterrence situation on the Korean Peninsula. If a weakening has indeed occurred, I expect to see changes in at least two ways: First, I expect to find an increase in hostile actions by North Korea since 2008. And second, I expect to see a renewed interest and public debate in South Korea on either developing a South Korean nuclear weapon, or in expressing interest in U.S. nuclear weapons redeployment. The presence of these two features are not necessarily evidence of weakened extended nuclear deterrence credibility, but could be generated by other factors. This is the essence of the discussion in chapter 6.

1.5 Definitions

*Credibility*: This thesis uses the Oxford Dictionaries` definition of credibility as “the quality of being trusted and believed in” (Oxford n.d. a). Trust is not fixed, and can be enhanced or diminished. In other words, it is not either/or, but rather more/less.

*Weaken*: This thesis uses Oxford Dictionaries` definition of the verb weaken as “make or become weaker in power, resolve, or physical strength” (Oxford n.d. b).
1.6 Reliability and validity

*Reliability* and *validity* are cornerstones of modern research. The essence is that research must strive to be objective and replicable so that the conclusions drawn from empirical research are sound. According to Robert Adcock and David Collier (2001:529), measurement validity is concerned with “[...] whether operationalization and the scoring of cases adequately reflect the concept the researcher seeks to measure”. This thesis therefore carefully studies the concepts of both nuclear capabilities and that of deterrence credibility. Since the deterrence theory community has not been able to adequately define what the concept of credibility encompasses, the thesis attempts to analyse and discuss two aspects that I find vital in credibility. This, however, has consequences for the reliability of the research. Alan Bryman (2008:31) defines reliability as “[...] concerned with the question of whether the results of the study are repeatable, […] whether the measures that are devised for concepts in the social sciences […] are consistent”. An important criticism of this research therefore will be the definition of deterrence credibility. Since credibility cannot be objectively defined, I attempt to combine elements of credibility from numerous scholars and justify why I find them to be relevant.

Internal validity is defined by Bryman as “[...] concerned with the question of whether the conclusions that incorporates a causal relationship between two or more variables holds water” (Bryman 2008:32). Finding causal relationships in social science is extremely challenging. This is because there are so many factors that are involved in any given phenomenon, and researchers cannot isolate, control and manipulate these variables in a laboratory. Rather than talking of perfect causality, one must in most social science research attempt to eliminate all known alternative explanations, so as to be able to avoid spurious relationships. For this research, internal validity is very challenging for one specific reason: deterrence success is largely based on “proof by absence”: It cannot be said with certainty why an action was *not* undertaken. One runs the risk of a *post hoc ergo propter hoc* fallacy: claiming that B’s inaction was caused by A’s threat of action, when in reality the inaction was caused by something else. Such a fallacy is common in social sciences, but especially eminent
where hard proof is unattainable. This is a serious critique that is difficult to negate. The only factor that strengthens proof by absence is time: If the threat and inaction is constant, while the surrounding variables change, the more time passes, the stronger the threat and inaction are linked. This is illustrated by the “pink elephant”: One cannot prove that there are no pink elephants in the world. You might just not have found one yet. However, as time goes by, your argument grows stronger. To contextualize, there are at least eight nuclear weapon states in the world, comprising approximately 4% of the world population of states. There has not been a single major war between nuclear weapons states. It is not certain that the invention and development of nuclear weapons has inhibited major war between nuclear weapons states. The claim that it has, however, grows stronger as time goes by. Consequently, the study of a phenomenon such as deterrence must be based on logic and argument. This is because there is very little empirical evidence to be found.

I will attempt to negate these concerns by comparing differing views and analysis, discuss those differences and build a logical argument. As stated, the essence of logical argument is that of sound premises and conclusions that follow from these premises.

1.7 Sources
Nuclear deterrence is a polarised subject. Many expert scholars within this field clearly position themselves either at the pro-deterrence and pro-nuclear weapons end of the spectrum, or the opposite. One of these scholars is Keith B. Payne. Payne is a leading analyst of nuclear weapons policy, but there is no doubt that Payne is in favour of nuclear deterrence, and opposed to nuclear weapons abolishment\(^1\). At the other end of the spectrum is Hans M. Kristensen, director of the Nuclear Information Project at the Federation of American Scientists. He is one of the foremost experts on nuclear weapons capabilities, and an advocate for nuclear disarmament. This thesis utilizes both of these scholars extensively. The reason for this is that both are leading experts in their fields, and have unprecedented access to sources that are unavailable to less

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\(^1\) Maybe the clearest example is the 1998 article «The case against nuclear abolition and for nuclear deterrence» in *Comparative Strategy*, Vol. 17, No. pp. 3-43, and
experienced analysts. I have taken care not to present their views and opinions as facts, and when I do refer to their views and opinions, I clearly state that they are just that; views and opinions.

Nuclear weapons policy is often shrouded in secrecy. On the one hand, the United States now publishes its Nuclear Posture Review (NPR), a review of both the nuclear weapons in the U.S. arsenal, and the policy that guides the psychological and, potentially, physical use of these weapons. On the other hand, the NPR must be read as a polished document intended to be public. It is not known exactly what the nuclear policy of the United States is, as this is a closely guarded secret. Nevertheless, this thesis will use the NPR extensively, as this is the official nuclear policy of the United States.

The chapter on nuclear capabilities relies heavily on Amy F. Woolf’s thorough analysis of the nuclear weapons in the U.S. arsenal presented to Congress, and on Hans M. Kristensen’s many publications on the same matter. The weapons, delivery systems and their specifications presented by these two scholars match each other, and their findings are cited extensively. I feel confident in their analyses and estimates.

The majority of the sources employed in this thesis are published in peer-review journals held in high regard. Peer-review provides a guarantee for high scholarly standard. Those articles that are not published in peer-review journals are handled with care, making sure that their facts are correct, and that their findings are sound. All the books are published by expert scholars, all of whom have written extensively on nuclear weapons and/or international relations. When citing media and newspapers, I have taken care to find those with high credibility. Last, the online sources cited are handled with extra care. When their claims are unsubstantiated, I state so.
Chapter 3

Political Realism, Deterrence Theory, and Credibility

1.0 Political Realism

Political realism has a long history. State power, and the exercise of it, has been at the forefront of analyses of international relations through centuries. One of the earliest examples of realist thinking is that of the Greek historian Thucydides who’s quote on the Peloponnesian war is famous: “[...] the strong do what they can and the weak suffer what they must” (Thucydides 1910: book 5, chapter 89, section 1). Thucydides sought to explain the behavior of political units in an anarchic system, battling for survival and influence (Waltz 2008:xii). This is the core of political realism.

Political realism manifested itself early in the 20th century as the leading theory of international relations. The work of classical realists such as Hans Morgenthau and E.H. Carr focused on the inherent nature of states: States are led by humans, and humans are inherently egocentric and conflictual, ergo states are as well. Humans and states have an insatiable appetite for power (Mearsheimer 2001:19). This pushes states into competitive behavior, each trying to dominate the other and achieve hegemony (ibid.). As Kenneth Waltz (1979:113) puts it: “International politics is the realm of power, of struggle, and of accommodation”. The result is an unstable world, prone to violent conflict: “Among states, the state of nature is a state of war” (Waltz 1979:102). The only thing that can balance power is power. Thus, the stability of the international order is rested on balance of power: States will refrain from direct military confrontation with states of superior strength.

Along with the behaviorist turn in social sciences in the 1960’s came a need for
a more precise explanation of state behavior. Kenneth N. Waltz, in his doctoral thesis “Man, the State, and War”, attempted to give such an explanation. His work developed into a strand of realism known as structural realism, or neorealism. Rather than focusing on the inherent nature of man and state, Waltz focuses on the structure of the international system: The structure of the system provides leaders with information about the expected outcome of actions (Huth, Gelpi and Bennett 1993:611). Since no state can know for certain the goals of other states, or the means by which these states will attempt to reach those goals, each state must ensure its own survival. There is always a possibility that states will resort to violence against other states and war is thus a likely event (Schmidt 2005:527). Because of this uncertainty, states are forced to maintain a capable military defense.

Today there are several strands of realism, but they share some common assumptions and beliefs about states and the international system;

1) the international system is anarchic, there is no overarching government, and states must ultimately fend for themselves;
2) sovereign states are the principle actors in world politics;
3) states are unitary rational actors, guided by their national interests;
4) the ultimate national interest of every state is survival;
5) power is the currency of the international system. It is power that determines states’ capabilities.
   - Power is commonly understood as military power, determined by economic strength and demographics.

1.1 Anarchy and Sovereign States
What does an international system of anarchy mean, and who are the principal actors that operate within that system? Realism maintains that the principle actors in the international system are sovereign states. They are sovereign in that no higher authority controls or dictates how the sovereign state acts within its own borders. This was established by the peace of Westphalia in 1648, where no state can interfere in
another state’s domestic affairs (Morgenthau 1973:306-7). Because there is no over-
arching government, the system is anarchic: There is no higher power that has the
authority and ability to punish states, or force them to behave or act. Consequently, no
higher authority can ensure the survival of states. This entails that states constantly live
under conditions of uncertainty, since they cannot be certain of other states’ intentions.

1.2 Unitary Rational Actors and National Interest
Realism presupposes that states are unitary actors guided by their national interest.
This is a theoretical simplification. Realism is not primarily concerned with the
formation of foreign policy, or how decision makers arrive at their conclusions. This
simplification is done to enhance the explainability and predictability of the theory:
one cannot include all foreign policy variables in one theory. Realists assume that
decision makers are rational actors guided by their national interests. The ultimate
national interest is survival, and since the system is anarchic, the states must secure
their survival themselves. All foreign policy decisions are guided by this, and are
formed through a rational decision process: The actor knows his goal, knows his
alternatives, calculates the expected utility of each alternative, and then chooses the
alternative that maximizes utility. In essence, this is a cost-benefit analysis of each
alternative.

1.3 Power
How can states ensure survival in an anarchical system? The only way a sovereign
state can ensure survival is by maximizing power. According to Waltz (2008:79),
power in neorealism is a means to an end, and a source of both security and insecurity:
Too little power may invite more powerful states to attack, while too much power may
result in other states increasing their arms, leading to an arms race. This gives rise to
an important paradox in realism; the security dilemma: When states enhance their
defensive capabilities to secure survival, this is a potential threat to other states. They
cannot know whether these capabilities are defensive or offensive. The only way to
secure survival is, consequently, to enhance their own military capabilities. One state’s
security is another state’s insecurity. Enhancing one’s military capabilities can be achieved by three alternatives; gaining allies; cooperating with adversaries to reduce threats; and building and improving one’s own military (Glaser 2000:252). When the two former are unavailable, the result is often an action-reaction process, with ever-increasing military spending to gain the upper-hand (ibid.).

In neorealism, power is defined as the total capabilities of the state. This is not a variable that can be objectively measured, and some have criticized it as imprecise (ibid.). Waltz, however, argues that this is only a valid criticism when moving from theory to practical application. Morgenthau cited several components of state power, including size, population, natural resources, national character, morale, industrial strength and quality of diplomacy and government (Morgenthau 1973:112-48). The exact definition of power is not vital for this thesis, but an underlying premise is that the more powerful the military, the less likely a military defeat.

1.4 Realism and War
Why does war feature so prominently in realist theory? Realism views inter-state conflict as an ever-present feature of the anarchic international system. The link between the structure of the system and war is that of uncertainty, created by the system, and the willingness of conflictual behavior by state decision-makers (Huth, Gelpi and Bennett 1993:611). The level of uncertainty is greatly dependent on the number of powerful players in the system. In a bipolar system, where there are two superior great powers that possess close to equal military capabilities, it is easier for decision-makers to predict outcomes of different actions. If the system is multipolar (contains several great powers), it becomes harder to assess the outcomes of actions, as the other players might interpret them differently. Consequently, realism views the bipolar system as inherently stable, whilst the multipolar system is unstable².

² There is debate within the realist camp over whether states are inherently security maximizers, as defensive realists suggest, or inherently power maximizers, as offensive realists suggest (See Schmidt 2005:527-8). For this thesis, however, the distinction between the two is of little importance.
2.0 Deterrence Theory

Deterrence theory developed as a political science discipline during the early 1950’s, mostly by American scholars, with the aim of explaining and predicting how and why states can deter aggression against themselves and/or third parties. According to Michael S. Gerson (2009:34), deterrence can be defined as “[...] the threat of force intended to convince a potential aggressor not to undertake a particular action because the costs will be unacceptable, or the probability of success extremely low”. Lawrence Freedman (2003:92) takes a concurring approach when he states that deterrence can be achieved either through inflicting excessive costs, or by the denial of gains. Michael Howard (1982:317) defines the objective of deterrence in a similar way: “The object of deterrence is to persuade an adversary that the costs to him of seeking a military solution to his political problems will far outweigh the benefits”. Consequently, for deterrence to be successful, “[...] the challenger’s expected utility for accepting the status quo must be greater than its expected utility for attempting to overturn the status quo through the use of force” (Huth, Gelpi and Bennett 1993:612).

As the preceding discussion shows, deterrence encompasses ability and credibility; ability to inflict heavy costs on an adversary, or the ability to deny him military success; and convincing/persuading an adversary that the threat will be carried out if he takes the unwanted action (Huth, Gelpi and Bennett 1993:612). In summary, deterrence theory has two crucial variables; military capabilities; and credibility of the deterrence threat (Huth, Gelpi and Bennett 1993:612). Should the balance of military capabilities shift in favor of the target state, the likelihood of it succeeding on the battlefield increases, and so the expected utility of an armed conflict rises (Huth, Gelpi and Bennett 1993:612). This, however, has been negated by the advent of nuclear weapons: Even when one state enjoys a considerable conventional military advantage, a single nuclear weapon can inflict such heavy costs that the status quo is clearly preferable to a post-war apocalypse. As argued by Scott Sagan (2003:9), “Nuclear weapons make military miscalculation difficult and politically pertinent predictions easy”. In other words, the deterring state will carry out its deterrent threat if it values maintaining the status quo greater than it fears military defeat. The concept of status
quo is important because it separates deterrence from what Thomas Schelling (1966:71-3) calls “compellence”: While deterrence seeks to persuade an adversary not to initiate an action, compellence seeks to persuade an adversary to take certain action. “The distinction is in the timing and in the initiative, in who has to make the first move, in whose initiative is put to the test” (Schelling 1966:71). Deterrence can be forever, while compellence has a time limit.

2.1 Counterforce, and First and Second-strike Dynamics

The concepts of first- and second-strike refers to the ability to destroy an adversary’s retaliatory capability, and the ability to ensure survival of one’s own retaliatory capability. First- and second-strike dynamics were alluded to by Hans Morgenthau in “Politics Among Nations” (1973:29):

The nation armed with nuclear weapons can assert power over the other nation by saying: Either you do as I say, or I will destroy you. The situation is different if the nation so threatened can respond by saying: If you destroy me with nuclear weapons, you will be destroyed in turn.

It is important to understand that first-strike in this context does not refer to the ability to simply strike an enemy before he strikes you: First-strike capability is the ability to completely destroy an adversary’s nuclear capabilities, removing the adversaries ability to retaliate with nuclear weapons. This is an unstable situation because the consequences for the striker are minute compared to a situation where nuclear retaliation is an option. The situation is even more unstable if two or more states have first-strike capabilities. Schelling (1980:208) uses a fitting analogy to explain the problem of first-strike surprise attack:

If I go downstairs to investigate a noise at night, with a gun in my hand, and find myself face to face with a burglar who has a gun in his hand, there is a danger of an outcome that neither of us desires. Even if he prefers just to leave quietly, and I wish him to, there is a danger that he may think I want to shoot, and shoot first.

A situation where both parties are able to retaliate and, in Morgenthau’s words, say if you destroy me, you will be destroyed in turn, is inherently more stable than a situation with first-strike capabilities. In realism and deterrence theory, a situation
where all parties have a secured second-strike capability is much preferred over a situation where some or all do not. This has profound implications for nuclear disarmament.

The term counterforce can be defined as the military strategy of attacking the enemy’s forces, rather than population. The latter is, of course, prohibited by international law. Nevertheless, the advent of second-strike capability by both the United States and the Soviet Union, prompted a discussion of the utility of attacking the other’s nuclear forces (Wagner 1991:727). For a nuclear state with neither first- nor second-strike capability guaranteed, it is futile to target the enemy’s nuclear forces in a surprise attack. To get the most “bang for the buck”, the inferior state would need to target the enemy’s population. This is transferable to the situation on the Korean Peninsula, where North Korea does not have a guaranteed second-strike capability, ergo the United States has first-strike capability.

2.2 Deterrence, Rationality and Escalation Dynamics

With a pure understanding of rationality, nuclear deterrence should not be effective: It is simply not rational to “push the button” and deliver a nuclear strike. This is especially true when the opponent has a secure second strike capability. It would be suicidal. Yet, in attempting to make a nuclear threat credible, it is this element of irrationality that can help achieve it. This is what Khrushchev attempted to do, and arguably managed. In 1959, Khrushchev told Averell Harriman that Soviet missiles would fire automatically in the event of a NATO invasion of Berlin. This seemed irrational, but Khrushchev’s desk-thumping with his shoe at the UN gave this image of irrationality credence (Schelling 1966:39). President Kennedy attempted an “automaticity” strategy in the speech that started the Cuban missile crisis. In his speech, he stated that any missile fired from Cuba against any state in the western hemisphere would be regarded by the United States as an attack by the Soviet Union on the United States itself, and would elicit a full retaliatory strike upon the Soviet Union (ibid.).

One danger of projecting irrationality is, of course, the danger of getting caught
in an unwanted escalation spiral, what Barry R. Posen (1982) calls “inadvertent escalation” dynamics. Escalation dynamics are important to understand so that minor skirmishes are not allowed to escalate beyond control. Posen discusses how a conventional war can “creep” and escalate to a level where nuclear weapons becomes an option. He uses northern Norway’s proximity to the ballistic submarine base in Murmansk as an example, but his arguments and conclusions are applicable to many situations. One cause of inadvertent escalation is conventional warfare in the geographic proximity of strategic nuclear weapons: If conventional fighting is threatening strategic nuclear weapons installations, their survivability takes on a necessity that can escalate the conflict out of control (Posen 1982:31). The motives of the adversary can be hard to interpret, and defensive and offensive actions are hard to distinguish. Add the fog of war and the situation, even with today’s technological aids, can become chaotic. The more confused the situation, the easier it is to assume the worst-case scenario.

These sources of inadvertent escalation that Posen discusses are applicable also to the present day international environment. For this thesis, Posen’s insights are directly transferable to the situation on the Korean Peninsula. A conventional war between the North and the South could easily threaten the survivability of Pyongyang’s nuclear weapons, not to mention the survivability of the regime itself, leading to inadvertent escalation.

2.3 Extended Nuclear Deterrence
Although the most common deterrence strategy is focused on deterring an attack against one self, this is not the only deterrence strategy. The term extended deterrence connotes instances where a party seeks to deter an attack by a second party against one or more third party(ies). One often-used example is that of the United States deterring Soviet aggression against its NATO allies. How does extended nuclear deterrence differ from deterrence, and what are the implications of these differences?

The most serious problem of extended deterrence is that of credibility. Thomas Schelling explains why credibility in extended deterrence differs from credibility in
traditional deterrence: “[T]he difference between national homeland and everything “abroad” is the difference between threats that are inherently credible, even if unspoken, and the threats that have to be made credible” (Schelling 1966:36). That you will fight for your own survival is obvious, but it is not obvious that you will fight for someone else’s survival, especially if that jeopardizes your own safety. George and Smoke (1974:68) illustrate how the issues of commitment and credibility can be hard to signal through a simple game theoretic model. In this game, the USSR is contemplating an attack on a third party, and the U.S. is contemplating defending that party.

**Figure 2.0: Extended Deterrence Game**

The two powers have two alternatives: The USSR can attack or not attack, while the U.S. can defend or not defend. The calculated payoffs for each player’s alternative is presented in the corners of each square; the bottom left for the US, and the upper right for the USSR. Since the U.S. action is dependent on the actions of the USSR, they will know the payoffs of the game before it is finished, while the USSR must calculate the expected action by the U.S. If the USSR does not attack, the U.S. can claim deterrence worked, and gain +1, while the USSR loses -1. If the USSR does attack, the costs and payoffs are greater. Should the U.S. choose not to defend, the U.S. loses face and gets
-20, while the USSR gains strength and credit by +20. Should the U.S. instead choose to fight, the result is nuclear war and everybody loses -100. Thus, when the USSR chooses its move, it cannot know what the U.S. will do, but in the event of an attack, the U.S. will have to choose between losing a little and losing a lot. If this game is played with pure rationality, the U.S. should cut its losses and get -20, save the world and live to fight another day. If the USSR, a U.S. ally, the U.S. must then decide whether it will fight a potential thermonuclear war and lose -100. Would the United States sacrifice itself for Norway? If China attacks Japan, how likely is it that the United States would risk a thermonuclear war with China? In order for extended deterrence to have any chance of succeeding, the deterring party must erase these doubts, and convince the target state that it is indeed ready to risk, ultimately, its own survival.

2.4 Extended Nuclear Deterrence Credibility

Lawrence Freedman once claimed that credibility is the magic ingredient of deterrence (Kilgour & Zagare 1991:305). Yet, according to Marc Kilgour and Frank Zagare (1991:305), the deterrence literature has not been able to find a cohesive stand on what comprises extended deterrence credibility:

[T]he concept of credibility is seldom defined rigorously, let alone analyzed systematically, in the strategic literature. Most strategic analysts seem to be of the opinion that the term is transparent enough that no formal definition is required. Credibility of a threat to punish an aggressor is frequently taken to mean that the threat is believed, and left at that.

They argue that the credibility of a threat hinges on its rationality. Thus they conclude that a credible threat is one where “[...] an actor prefers to execute a threat when the expected worth of doing so exceed the expected worth of failing to do so” (Kilgour & Zagare 1991:308). This however says nothing of what credibility is, what it comprises, and how to evaluate how strong it is. The scholarly literature on credibility proves the difficulties of defining and operationalizing credibility.

Herman Kahn argued that the over-all strategic balance determined the strength
of the credibility of a threat (Russett 1963:97). The defender must be able to strike against the homeland of the attacker without the danger of unacceptable damage to himself (ibid.). I do agree with the first part of the statement, that the defender must be able to strike the homeland of the attacker, but the second part is more problematic: If it is true, the U.S. extended deterrence in Europe during the Cold War was not credible. The Soviet Union had a secure second strike capability, and a U.S. nuclear attack in defense of Europe would surely have been met in kind. Nevertheless, nuclear capabilities must be a central part of deterrence credibility.

Thomas Schelling argued that a player can enhance the credibility of a threat by unilateral actions, such as by “self-entrapment”: stationing troops where they would be likely to sustain heavy casualties should the would-be attacker attack. This was done by the U.S. in Berlin during the Cold War. The rational was that if a Soviet attack on Berlin occurred, the U.S. troops, heavily outnumbered, would have no other objective than to die heroically. This would be an unacceptable loss to the U.S., and the U.S. would automatically be involved in the ensuing war (Schelling 1966:47). This is an interesting point which will be part of my discussion, particularly in chapter 6, but still insufficient. It does, however, point to another important aspect of credibility, and that is signaling intent: The declared nuclear policies of states serve as indicators of resolve, and also of how the state perceives the utilities of nuclear weapons. Since each U.S. administration crafts its own nuclear strategy, this variable will be highly influenced by the policies of the current president.

Yet others have stated that economic interdependence between defender and the pawn, the importance of the pawn in the defenders electorate and the past reputation of the defender as important factors (Russett 1963:97). For this thesis, the position of South Korean in the electorate and the past reputation of the United States are viewed as not having changed since Obama took office, and will therefore not be part of the analysis, although the argument that credibility is impacted by these two factors appears logical.

In order to examine whether President Obama’s nuclear policies, Global Zero and the New START treaty, has weakened the credibility of the U.S. extended nuclear
deterrence, this thesis will measure credibility by analyzing two variables: nuclear capabilities, and nuclear policy. Due to space constraints, the strength of the relationship between pawn and defender (South Korea and U.S.) is not discussed and analyzed; rather the thesis presupposes that the relationship is strong, and that President Obama has not weakened this relationship.

2.5 Extended Deterrence Credibility: Capabilities
A key element of extended nuclear deterrence credibility is military capabilities. In order for a threat to be credible, the target state must believe that the deterring state has the capability to carry out the threat. The defending state must be so equipped that it is actually able to carry out a threat of a nuclear strike: Not only must it have the warheads, it must have the capability to deliver the warheads to the attacker. Furthermore, a threat of a nuclear retaliation is of course more credible if one’s nuclear forces cannot be destroyed by the adversary in a preemptive first-strike. The first variable this thesis will discuss, is the capabilities variable. Chapter 4 will discuss whether New START limits the nuclear capabilities of the United States, and if the extended nuclear deterrence credibility is consequently weakened.

2.6 Extended Deterrence Credibility: Nuclear Policy
In order for a nuclear threat to be credible, the deterring state must carefully signal its nuclear policy. The second variable that this thesis will discuss is the nuclear policy-variable. The U.S. nuclear policy signals how the U.S. understands the utilities of nuclear weapons, i.e. what they can achieve, and how they can be employed, and declaratory policy is intended to serve a purpose. The 2010 Nuclear Posture Review outlines how the Obama administration will implement President Obama’s nuclear vision. Although Obama has stated that he will work for a nuclear-free world, the 2010 NPR does not completely follow up on that promise. There are, however, important differences between Obama’s nuclear policy, and the nuclear policy under George W. Bush. Amongst these differences is a renewed effort to reduce the salience of nuclear weapons in U.S. strategic thinking, and an inclusion of a “Negative Security
Assurance”, promising not to threaten or attack non-nuclear states in compliance with the Non-Proliferation Treaty, with nuclear weapons. A careful analysis of Obama’s nuclear policy is warranted, as it plays a vital role in signaling intent and establishing extended nuclear deterrence credibility. Given the fact that there are differences in U.S. nuclear policies under Obama and Bush, the impact of these changes is important to assess. Consequently, chapter 5 discusses the impact of President Obamas nuclear policy, expressed in the 2010 NPR, on extended nuclear deterrence credibility in general, and on the Korean Peninsula in particular.

2.7 Extended Deterrence Credibility: Analysis of Korea
In attempting to find proof of a weakened U.S. extended nuclear deterrence credibility, this thesis will analyze a specific extended nuclear deterrence situation. As argued by Paul K. Huth (1999:32), extended nuclear deterrence credibility is highly case specific:

[...] the credibility of deterrence is so heavily determined by the specific configuration of military capabilities, interests at stake, and political constraints faced by a defender in a given situation of attempted deterrence.

Chapter 6 will discuss whether there are signs in South Korea that point to a reduced confidence in the U.S. extended nuclear deterrence. This is done through two primary analyses: First, an analysis of North Korean behavior since the turn of the century, so as to see whether there is evidence to suggest that the increasingly provocative North Korean behavior since 2008 can be attributed to a weakened U.S. extended deterrence credibility. Second, an analysis of South Korean responses to the NPR is conducted to see whether the recent calls for redeployment of U.S. tactical nuclear weapons, and the calls for a South Korean nuclear weapon, can be attributed to lack of extended nuclear deterrence credibility.
Chapter 4

U.S. Nuclear Capabilities and New START

1.0 Introduction

Nuclear weapons are often divided into strategic and tactical nuclear weapons. The former denotes weapons that are designed to travel over longer distances and hit an adversary’s military and/or civilian targets on their territory. The latter denotes weapons that are generally smaller compared to strategic weapons, and are designed to be used on the battlefield against an adversary’s armed forces. The range of the delivery vehicle is often a determinant of the kind of weapon it is\(^3\). A tactical nuclear weapon will not be able to credibly threaten an adversary far from its reach in a long-term strategic situation. Therefore, this chapter is concerned with strategic nuclear weapons. This is important to keep in mind, as the capabilities outlined below are strategic capabilities. As a consequence, nuclear arms reduction treaties focusing solely on tactical nuclear weapons will not be discussed in this overview.

The United States’ nuclear weapons capabilities today are products of the Cold War. The United States conducted its first nuclear weapons test in the summer of 1945, and had a rapid quantitative build-up of nuclear arms. The nuclear arsenal was divided between three branches of the U.S. military; Army; Navy; and Air Force (Woolf 2011:2). This, according to Amy F. Woolf, was because each of the major branches\(^4\) of military wanted to play a part in the U.S. nuclear policy, but the rational for maintaining this “triad” was further developed in the 1960’s and 70’s (ibid.). The term

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\(^3\) This is, however, not always the case. An example is that of India’s Agni-I missile which has a range of approximately 700 kilometres. China would likely view this as a tactical weapon, while Pakistan could view it as a strategic weapon.

\(^4\) Excluding Coast Guard and the Marine Corps.
triad denotes the three legs of the U.S. arsenal; the land based nuclear weapons, the air delivered nuclear weapons and the sea launched nuclear weapons. According to policymakers and analysts, maintaining this triad enhances the deterrence effect, and ensures survivability of nuclear weapons should the U.S. face a surprise nuclear attack (ibid.). As discussed in chapter 3, this survivability is known as second strike capability: By securing nuclear weapons from being eliminated by a first-strike, one retains the ability to retaliate with nuclear weapons. Second-strike is said to be a stabilizing feature in a world with nuclear strike capabilities.

There are three categories of U.S. strategic nuclear delivery vehicles; Intercontinental Ballistic Missiles (ICBMs); Submarine Launched Ballistic Missiles (SLBM’s); and nuclear weapons-capable bombers (ibid.). Within these three categories, numerous delivery vehicles were produced and deployed.

This chapter provides an overview of the U.S. strategic nuclear arsenal and its capabilities. It attempts to shed light on the implications of the New START treaty for U.S. extended nuclear deterrence in South Korea. This is the first of the two variables identified in chapter 3. The chapter begins with a brief outline of the developments of the U.S. nuclear arsenal during the Cold War, before turning to the justification for the nuclear triad. Each leg of the strategic nuclear triad is examined, explaining what capabilities each leg has, and each leg’s recent and planned developments. The overview of the triad, the strategic arsenal and the corresponding delivery vehicles is extensive. This is to provide the reader with an understanding of what U.S. strategic deterrence is founded on, as well as the limitations of the nuclear arsenal. In order to assess the impact of New START on the U.S. strategic nuclear capabilities, it is vital to understand what each specific delivery vehicle is able to accomplish, and how the different delivery vehicles and the legs of the triad complement each other.

Following this overview is an outline of New START, the newest strategic arms reduction treaty between the United States and Russia. Thereafter the nuclear capabilities of the two relevant nuclear powers in the Pacific, North Korea and China, are briefly outlined. Although China is not a primary focus in this thesis, the short outline is provided to demonstrate how superior the U.S. nuclear arsenal is to the
nuclear arsenal of the two powers closest to South Korea. The chapter closes with a short discussion of the impact of New START on the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula. The discussion is short due to the extensive outline of capabilities preceding it, and there is little need to expand on earlier findings. The conclusion is that New START has very little impact on the credibility of the U.S. extended nuclear deterrence in Korea because each leg of the triad is maintained, and there are more than sufficient deployed nuclear warheads allowed.

1.1 U.S. Strategic Nuclear Arsenal, MAD and the Cold War
As the following figure shows, the number of strategic nuclear weapons in the U.S. arsenal grew steadily throughout the Cold War, peaking in 1987, before eventually declining. The U.S. enjoyed a considerable numerical advantage over the USSR up until approximately 1990. Since then, there has been close to parity between the U.S. and USSR in strategic nuclear arsenals.

![Figure 4.0](image)

**Source:** Natural Resources Defense Council 2002a.
There were several factors that influenced the growth of the nuclear stockpile. For one, the nuclear arms race with the Soviet Union drove the number of strategic nuclear weapons through the roof. The mechanisms that drive arms races are many and complicated, but one reason was the search for a nuclear force that would be able to survive an exhausting nuclear strike by an adversary. This was accomplished in the 1960’s (Lieber & Press 2006:44), and the term MAD (Mutual Assured Destruction) was coined, meaning that neither the Soviet Union, nor the United States could triumph in a first strike: If there was a nuclear war, both would be destroyed. Consequently, the essence of MAD is second-strike capability. This can be achieved quantitatively by simply having more nuclear weapons than ones adversary, spread over a large enough area so that he cannot destroy your whole arsenal with a complete exhaustion of his arsenal. It can also be achieved through ensuring that one’s nuclear arsenal is stored so that it cannot be destroyed, or is hidden, either on land or at sea. This is the essential rationale for having a nuclear triad: diversifying the nuclear arsenal so that they cannot all be found and destroyed with one strike.

A second reason for this quantitative rise was the deployment of delivery vehicles able to carry multiple nuclear warheads, known as MIRVs (Multiple Independently targetable Reentry Vehicles) (Woolf 2012:3). Rather than having one nuclear warhead per delivery vehicle, and thus one nuclear warhead per launch, and one missile per target, now one launch could contain multiple warheads, able to strike several targets with a single missile. It meant that a small MIRV equipped missile force could strike as many targets as that of a many times larger single-warhead missile force. There is also a strong economic incentive to keep MIRV missiles, as there are fewer missiles to maintain. The introduction of MIRVs in the 1960’s enabled the number of delivery vehicles to remain stable from the mid 1960’s to 1990, while the number of warheads rose sharply (Natural Resources Defense Council (2002b). The United States fitted their Minuteman III and Peacekeeper ICBMs with multiple warheads, in addition to their Polaris\(^5\), Poseidon and Trident SLBMs.

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\(^5\) The Polaris carried up to three warheads, but with only a single target. Thus, the Polaris was not a MIRV equipped missile.
2.0 Justification for Maintaining the Nuclear Triad

The justification for maintaining the strategic nuclear triad is, as mentioned above, the inherent strengths and weaknesses of each leg. The ICBM force is the brunt of the nuclear force. ICBMs can be maintained in high numbers, fly at high speeds and are likely to be able to penetrate the air defences of an adversary. They are, however, stationary, and as such vulnerable to a first-strike. There are ways to mitigate this vulnerability, e.g. fortifying and strengthening missile launch facilities to withstand nuclear detonations. Such a fortification is expensive, and it must also be factored in that new technology can enhance the destructive capabilities of weapons designed to penetrate hardened silos. Another tactic is to rotate the missiles between a large number of missile silos on irregular intervals. This forces an adversary to target all of the missile silos in order to take out all the missiles with one blow. This tactic has also been attempted, but it is very costly to build that many silos per missile, and the necessary logistical installations to make moving the missiles possible.

The nuclear carrying submarine fleet of the United States is the least vulnerable of the three legs. Modern submarines are very difficult to detect and track, and, compared to ICBMs, are not likely to be destroyed by a first strike. The SLBM force is thus the principle guarantee for force survivability. Submarines are, however, the most expensive launch platform to manufacture, and the number of nuclear armed submarines in the U.S. navy remains low. Today, only 14 Trident armed Ohio-class submarines are in the service of the U.S. Navy (U.S. Navy 2011). Consequently, the SSBN\(^6\) fleet cannot hold the quantitative nuclear arsenal that U.S. decision-makers have deemed necessary for both deterrence and for waging nuclear war.

The last leg of the triad is the strategic bomber force. The supreme advantage of the bomber force is arguably its signalling effect: Orders to arm and take flight can be issued to strategic bombers, which will be a strong signal of intent, but they can also be called back should the situation change. This can be a possible bargaining asset, although it might require skilled brinkmanship. Furthermore, the strategic bombers are

\(^6\) SSBN stands for Ballistic Missile carrying, Nuclear powered submarine (SS denotes submarine, B denotes Ballistic Missile and N denotes nuclear powered). The submarines carrying conventional weapons are known as SSGNs (guided missiles).
equipped to carry both nuclear and conventional weapons, making them integral also to the conventional forces of the U.S. The drawback of the bomber force is that it is slow, the aircrafts can be destroyed before they can take off, and they are vulnerable to modern air defences.

To summarize, each leg of the triad has distinct advantages and drawbacks, but together they complement each other, ensuring both numeric strike capability and survivability. Consequently, removing one leg of the triad will have an impact on the effectiveness and credibility of the U.S. nuclear deterrent.

2.1 Intercontinental Ballistic Missiles

The United States ICBM force has undergone a sharp decline in deployed missiles since the Cold War. At the end of the Cold War the United States had 50 Peacekeeper ICBMs deployed at F.E. Warren Air Force Base in Wyoming (Woolf 2012:9). Each of these missiles carried up to 10 nuclear warheads. The 1993 second Strategic Arms Reduction Treaty (START II) of the USA and Russia called for the dismantlement of MIRV ICBMs, and after a four year funding ban from Congress, the last Peacekeeper was decommissioned in 2005 (ibid.). This led to a reconfiguring of the U.S. strategic ICBM force. As of 1st September 2011, the United States has 448 Minuteman III single warhead ICBMs in operational deployment (Woolf 2012:10). The Minuteman III has a range of approximately 13,000 kilometres, making it able to strike almost anywhere on the earth, and an accuracy of 150m CEP (circular error probable)\(^7\). It carries the W78 and W87 thermonuclear warheads which have yields in excess of 300 kilotons (Kristensen & Norris 2011:68). These properties make the Minuteman III a powerful, precise and long-reaching weapon.

The Minuteman III missiles are hosted by three missile wings; the 90th missile wing at F.E. Warren AFB Wyoming; the 91st missile wing at Minot AFB North Dakota; and the 341st missile wing at Malmstrom AFB, Montana (Woolf 2012:9). They are held in underground hardened silos, but these silos are not capable of withstanding direct hits by nuclear weapons. According to Stephen M. Younger (2000:10) even a 5kt

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\(^7\) The CEP is defined as a circle with a radius extending from the target site. A CEP of 150m therefore indicates that the missile will strike within 150m from the target.
warhead would vaporize a 30 foot thick missile silo door and destroying the missile inside. For this reason, the U.S. ICBM force is vulnerable to a direct attack, although it would require a substantial amount of weapons to eliminate all of the 450 Minuteman III missiles. Furthermore, the launch facilities that control the Minuteman silos are interconnected, making each facility able to take control over missiles belonging to another facility in case of malfunction or damage.

The Obama administration has indicated that they will maintain a Minuteman III force of at least 420 missiles across the three facilities under New START (Woolf 2012:10-11). According to General Robert Kehler, the head of STRATCOM⁸, the life expectancy of the Minuteman III is beyond 2030, yet the Air Force has begun exploring a replacement of the missile (Woolf 2012:15).

2.2 Ballistic Missile Submarines
There are three types of submarines operated by the U.S. Navy; the nuclear powered attack submarine (SSN); the nuclear powered cruise missile submarine (SSGN); and the nuclear powered ballistic missile submarine (SSBN) (O’Rourke 2011:1). Of these three, only the SSBNs carry strategic nuclear weapons. The U.S. SSBN-based nuclear weapons force is founded on 14 Ohio-class submarines (also known as Trident submarines), equipped with 24 Trident SLBM missiles (Woolf 2012:15). Originally, the U.S. navy fielded 18 Trident submarines equipped with missiles able to carry up to 8 warheads each. The Clinton administration decided to downscale the force to 14 submarines, and convert the remaining four to carry conventional weapons (ibid.). In accordance with New START, the Obama administration indicated in the 2010 Nuclear Posture Review (NPR) that a further downscale is likely, to a force of 12 submarines each carrying 20 SLBMs. One important difference between the warheads of the ICBM force and the SLBM force is that, while the ICBMs under New START cannot carry MIRVs, the New START and SORT treaties only limit the number of warheads on SLBMs. Thus, each Trident II D-5 missile on the SSBNs carries several warheads (Kristensen & Norris 2011:67). In total, the SSBN force carries up to 240 Trident II D-

⁸ STRATCOM is the Strategic Command (former Strategic Air Command (SAC)).
5 SLBMs with 1152 deployed nuclear warheads, and hundreds of warheads in reserve (ibid.). The four SSGNs carry up to 154 tactical Tomahawk cruise missiles with either conventional or nuclear warheads\(^9\) (Woolf 2012:16).

The SSBNs are currently stationed in Bangor in Washington and Kings Bay in Georgia. Bangor holds 7 submarines, and Kings Bay holds 5, with two submarines in constant overhaul. An important change in the basing of the SSBNs happened in the mid 2000’s, when two submarines were moved from Kings Bay to Bangor, from the Atlantic to the Pacific (Woolf 2012:17). According to Woolf (ibid.), this was because the Bush administration perceived the international security environment to be changing. It viewed the targets in the Pacific to be of more strategic value than those in the Atlantic, with special emphasis on North Korea and China.

According to a fact-file on naval-technology.com, the Trident II (D-5) SLBM has a range greater than 7360km, but notes that this can mean up to 12,000km, depending on payload (naval-technology). It carries the W76 and W88 warheads with an estimated yield of 100kt\(^10\). The Trident submarines can thus target most of the planet from their location in the Pacific and Atlantic Oceans.

The SSBN fleet carried out a total of 33 patrols in 2011, with each submarine sailing an average of 3 patrols lasting 70-100 days per patrol (Kristiansen 2011). According to Hans M. Kristiansen (2011), this activity is very high and comparable to the amount of patrols during the Cold War. Modern day nuclear powered submarines can stay submerged throughout their missions, only limited by their food supply. Furthermore, their anti-detection measures make them extremely difficult to detect and track. In the event of a crisis, the SSBN force of the United States can stay submerged and hidden, and provides a high degree of survivability and second strike capability to the U.S. nuclear forces.

The next generation of strategic ballistic submarine, known as the SSNB(X), is in an early stage of development. There are plans for 12 new submarines, and the

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\(^9\) The Tomahawk nuclear warhead is soon to be retired.

\(^10\) Sources are difficult to obtain, but both globalsecurity.org and nuclearweaponarchive.org places it at 100 kilotons. These sites do not state their sources. The figure is therefore unsubstantiated, although plausible. See [http://www.globalsecurity.org/wmd/systems/w88.htm](http://www.globalsecurity.org/wmd/systems/w88.htm) and [http://nuclearweaponarchive.org/Usa/Weapons/W88.html](http://nuclearweaponarchive.org/Usa/Weapons/W88.html)
schedule calls for the first to be commissioned towards the end of the service life of the Ohio class, which is projected to be 2027 (O’Rourke 2011:1). The projected costs of the program was estimated at between $6 and $7 billion (in 2010 dollars) per submarine, but was cut to $4.9 billion. This cut was partly achieved by reducing the number of launch tubes to 16. The Ohio class has 24 in comparison, although the Ohio class will also lose four of these launch tubes to comply with the maximum 20 under New START (ibid.).

2.3 The Strategic Bomber Force
The United States Air Force was the first branch of the military to deploy nuclear weapons, and the only branch ever to use them against an adversary. The current fleet of U.S. strategic bombers consists of 92 B-1 Lancer bombers, 20 B-2 Spirit bombers, and around 85 B-52 Stratofortress bombers (Woolf 2012:22-4). The B-1 is no longer capable of carrying nuclear weapons, but it still counted against the 1991 START limits, but not against the 2002 Moscow Treaty (SORT) limits (ibid.).

The B-2 bomber is the newest in the U.S. strategic bomber fleet, having entered service in 1988. It is designed as a “low observable” bomber with a stealth airframe, making it very difficult to identify by radar. It has a service ceiling of 50,000 feet, flies at high subsonic speeds and has a range of approximately 9,600 km (U.S. Air Force 2010). It is thus capable of flying intercontinental missions and effectively penetrate modern air defences. The B-2 is equipped to carry B-61 nuclear bombs, with multiple yield options from 10kt to 340kt, and B-83 nuclear bombs with yields up to 1.200kt (Oelrich et.al 2005:8). The latter is capable of penetrating hardened missile silos. The B-2 Spirit is based at Whiteman AFB in Missouri (Woolf 2012:23).

The B-52 is the oldest of the strategic bombers, entering service as early as the mid 1950’s (U.S. Air Force 2011:). It was first designed to fly over Soviet air defences, and capable of cruising at 50,000 feet (ibid.). However, the shooting down of a U-2 high altitude spy plane by a Soviet Surface to Air Missile (SAM) in 1960 immediately prompted a change in tactic. As a result, the B-52 was enhance to the B-52H, fitted with air launched nuclear cruise missiles, and a tactic of flying under Soviet air
defences was developed. Only the B-52H remains of the B-52 fleet. It cruises at Mach .86 (over 900 km/h) and has a range of 14,000 km. With air-refuelling, the range of the bomber is only limited by its crew. The nuclear cruise missiles carry the W80 nuclear warhead with a yield of 5 to 150kt.

It is questionable how well the B-52 would fare against a functional modern air defence, especially one that is far removed from a friendly base. This is because it would have to penetrate air defences without the help of fighter aircraft. Although retirement of portions of the B-52 fleet has been proposed on several occasions, Congress has refused to approve it. The Air Force has also indicated that it will seek to maintain the B-52 until at least 2035 (Woolf 2012:26). The B-52s are based in Barksdale AFB, Louisiana, and Minot AFB, North Dakota.

A major problem with strategic bombers is the possibility of complete destruction on the ground in the event of a surprise attack. This is especially true for the B-52 bombers who are stored on the tarmac, but the air-conditioned shelters holding the B-2s would not be able to withstand a nuclear blast. The vulnerability of the strategic bombers is negated by the fact that they are based in the middle of the North American continent. The only means by which to destroy the bombers on the ground would be by a ballistic missile attack, but with flight times from Asia being close to 30 minutes, early warning radar could alert crews in time to get airborne with a substantial part of the force intact. In the 1960’s, at least 12 B-52s were at any given time airborne, loaded with nuclear weapons as part of the SAC’s (Strategic Air Command) airborne alert operation, dubbed “Chrome Dome” (Sagan 1993:57). These flew long routes from the United States to Greenland, Europe and Alaska so that, in the event of a surprise attack on the strategic air bases, the United States would still have nuclear bombers available. Operation Chrome Dome was terminated after a series of accidents involving nuclear armed B-52s.\(^{11}\)

3.0 New START

Since the end of the Cold War, several bilateral nuclear arms reduction treaties have been signed by Russia and the United States. The latest treaty, known as New START, signed April 8th 2010, aims at reducing the number of deployed strategic nuclear weapons. Article II of the treaty contains three central limitations; first, each side is limited to no more than 800 deployed and non-deployed strategic launchers; second, within those 800, the treaty limits each side to no more than 700 nuclear equipped bombers, ICBMs and SLBMs; and third, each side agrees to deploy no more than 1550 warheads (New START 2010:3). The reductions are to be accomplished within the first seven years after ratification, and the treaty expires after ten years. The treaty was confirmed by the U.S. Senate and ratified by president Obama’s signature February 2nd 2011.

The treaty’s provisions represent substantial reductions compared to the 1991 START treaty limits, which limited the parties to no more than 1600 delivery vehicles and 6000 warheads (Woolf 2010:3). The following table compares the limitations of the 1991 START and the 2002 SORT (Strategic Offensive Reductions Treaty, or the “Moscow Treaty”) with New START:

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Limits on Warheads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,000 warheads attributed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to ICBMs, SLBMs, and heavy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bombers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,900 warheads attributed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to ICBMs and SLBMs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,100 warheads attributed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to mobile ICBMs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,540 warheads attributed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to heavy ICBMs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limits on Throwweight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,600 metric tons</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Amy F. Woolf 2010:4
One very important aspect to be aware of, is that START, SORT and New START use different counting rules, and their limits are not directly comparable. One example is the counting of nuclear weapons on strategic bombers: Although each B-52 bomber can carry numerous nuclear bombs, they only count as one warhead against the treaty limit. In comparison, SORT actually did not establish a common definition of “deployed nuclear warheads”. It was left to the parties to define this, and the United States counted all offensive nuclear warheads deployed on, or near, strategic bombers (Woolf 2010:5). In contrast, the converted SSBNs, the SSGNs, still counted as if they had 24 Trident SLBMs with 8 warheads each against the START limits. This was because the missile launch tubes were not removed. Under New START, the United States need not remove the launch tubes but only disable them (Woolf 2010:8). Thus, by simply changing the requirements of the treaty, the United States has reduced the number of deployed warheads by 192\(^2\) for each SSGN. The reduction from 1700-2200 to 1550 warheads, therefore, need not represent a true reduction of 150-650 warheads.

How will New START affect the current U.S. nuclear forces? The following table shows the estimated nuclear forces in 2010, and two potential forces under New START:

<table>
<thead>
<tr>
<th>Table 2. U.S. Strategic Nuclear Forces under New START</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Estimated current forces and potential New START forces)</td>
</tr>
<tr>
<td>Estimated Forces 2010</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Minuteman III</td>
</tr>
<tr>
<td>Trident</td>
</tr>
<tr>
<td>B-52</td>
</tr>
<tr>
<td>B-2</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Alternative 1: | Alternative 2:

<table>
<thead>
<tr>
<th></th>
<th>Total Launchers</th>
<th>Deployed Launchers</th>
<th>Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minuteman III</td>
<td>420</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Trident</td>
<td>280</td>
<td>240</td>
<td>1090</td>
</tr>
<tr>
<td>B-52</td>
<td>74</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>B-2</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>792</td>
<td>700</td>
<td>1550</td>
</tr>
</tbody>
</table>

Source: Amy F. Woolf 2010:19

\(^2\) 24 Trident SLBMs per SSBN/SSGN times 8 warheads per Trident, yields a total of 192 warheads per SSBN/SSGN
It is apparent from the table that the numerical impact of New START is not as substantial as is often portrayed. The largest change appears to be the reduction of deployed B-52s and their warheads. This is, however, misleading. As mentioned, the counting rules in New START counts each strategic bomber as if it was carrying one warhead. Consequently, the decline from 300 associated warheads to 44 is in fact not a decline at all. In fact, some 1000 nuclear warheads are believed to be earmarked the nuclear bomber force (Kristensen 2011). The decline in Minuteman III launchers from 450 to 400 is a real reduction, but does not substantially influence the strike capability of the ICBM force.

According to the Federation of American Scientists (FAS), the United States has, as of 2012, an estimated total of 1.950 deployed strategic nuclear warheads (FAS 2012). What is not evident in the New START numbers is the amount of warheads in reserve and stockpile. FAS has these at 2.850 and 5.000 respectively. This gives a total of over 8000 nuclear warheads in the U.S. arsenal (ibid.).

There are three nuclear armed states in the Pacific region; Russia, China and North Korea. Two of these, China and North Korea, are relevant for this thesis. What are their nuclear capabilities, and do they inhibit the capabilities of the United States nuclear arsenal? The next section attempts to expand on this.

4.0 The Nuclear capabilities of China

Compared to the U.S. and Russia, the People’s Republic of China (PRC) has a small nuclear weapons arsenal. Since its first successful nuclear test in 1964, the PRC appears to have designed its nuclear weapons policy to be exclusively retaliatory (Hiim 2011:4). The exact number of Chinese nuclear weapons is not known, and experts’ estimates therefore vary, but most analysts place the figure at between 80 and 200 nuclear warheads (ibid.). These warheads are mounted on different delivery vehicles, but the “backbone” of the Chinese arsenal is the DF-5 intercontinental ballistic missile. This missile has an estimated range of 12,000-15,000 kilometers (FAS 2000), making it able to strike the U.S. mainland. In addition to the DF-5, China has several shorter-range missiles, varying in range from approximately 2,000 to
11,000 kilometers. All of these missiles, as well as the DF-5, are single-warhead missiles. Their estimated yield is between 3.3 and 5 megatons (Hiim 2011:5). In total, the PRC is believed to have approximately 134 land-based, nuclear equipped missiles (ibid.).

The sea- and air-based nuclear forces that make up the Chinese nuclear triad are believed to be underdeveloped (Fravel & Medeiros 2010:54). The bomber force consists of H-6 bombers capable of reaching eastern Russia and Japan, but not the United States, and their ability to penetrate air defenses is questionable (ibid.). China’s Xia-class SSBN is also unsophisticated, and the testing of its JL-1 SLBM has encountered several difficulties (Fravel & Medeiros 2010:55).

M. Taylor Fravel and Evan S. Medeiros (2010) appear to conclude that it is likely that China has secured a second-strike capability. There are, however, several reasons why China’s second strike capability is questioned. First, its ICBM is believed to be poorly stored and vulnerable to both nuclear and conventional strikes. Moreover, they are believed to be stored unfueled, and thus unavailable to be launched on short notice (ibid.). Second, the bomber force is unsheltered, making their destruction on the ground possible. Third, their SSBN’s are unsophisticated and unreliable. And fourth, the level of command and control infrastructure of the People’s Army is thought to be poor, making a coordinated counter-attack difficult (Fravel & Medeiros 2010:55).

4.1 The Nuclear capabilities of North Korea

The nuclear arsenal of North Korea is limited. It is unclear whether North Korea actually has developed a working nuclear warhead, but, according to a fact file on BBC (2012), it is believed that they have enough plutonium to make at least six warheads. Pyongyang is developing new ballistic missiles, but testing is slow, and it has not been able to test a complete intercontinental ballistic missile. The accuracy of its short range missiles is low, and does not allow precise targeting of military forces. According to one source, the short range SCUD-B missile has a 50% chance of landing within 1 kilometer of its intended target (Hayes & Bruce 2011). Lastly, the bomber force of North Korea consists of Soviet Ilyushin II-28 “Beagle” and Chinese
H-5 bombers, both ancient and slow. It is unlikely that these will be able to even cross the border before being shot down by ROK air defenses (ibid.). The fact that North Korea does not have a nuclear warhead small enough to be put on a ballistic missile, and that their ballistic missiles are underdeveloped, means that the nuclear weapons of North Korea poses no danger to the United States strategic nuclear capabilities.

The nuclear strike options of the United States are, however, limited by geography. Although American ICBMs would have no difficulty striking targets within North Korea, the trajectory of a Minuteman strike makes it virtually impossible. As the following image shows, the trajectories from Minot, Warren, and Malmstrom to Pyongyang carries the missiles across both eastern Russia and China:

**Figure 4.1 ICBM Strike Trajectories from U.S. to North Korea**

*ICBM trajectories from Minot AFB (shown in orange), Malmstrom AFB (shown in blue), and Warren AFB (shown in red).*

*Source: Hayes and Bruce 2011*
According to Peter Hayes and Scott Bruce (2011), the Russian and Chinese early warning systems are unlikely to be able to detect a U.S. ICBM in its boost phase, and would most likely detect the missile as it descents back down towards earth, minutes before impact. As it would be difficult for Russia and China to accurately estimate where the warhead will impact, the resulting situation would be extremely dangerous. Consequently, the Minuteman missiles will arguably not be part of a U.S. nuclear attack on North Korea. Most likely, a nuclear attack by the United States on North Korea will be carried out by the strategic bomber force, and/or SSBNs in the south-western Pacific region, where the trajectory of the SLBM will carry the missile clear of both Russia and China (ibid.). There is another constraint to a nuclear attack on North Korea: The nuclear fall-out pattern, depending on winds, can carry lethal doses of radiation well across the border to either China or South Korea. The following figure shows a simulated fallout pattern with west-north-westerly winds:

**Figure 4.2** Fallout Pattern after Nuclear Strike on North Korea

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13 The red stars are likely regime locations in North Korea that, according to Bennett (2011:16), would need two to three nuclear warheads each to achieve 90% overall damage. The colorful nuclear symbol is the location of the Yongbyon nuclear facility.
Thus, a nuclear attack in defense of South Korea can have just as much a lethal impact on the North as the South, and might cause heavy casualties in China.

In summary, a nuclear surprise attack by North Korea does not in any way threaten the survivability of the U.S. nuclear forces. The constraints placed on the utility of the Minuteman III arsenal, and the potential radiation fallout patterns from a nuclear strike on North Korea, does not negate the fact that the United States clearly has the nuclear capabilities to utterly destroy North Korea.

5.0 New START and Extended Nuclear Deterrence Credibility

It should be clear after the previous outline that the U.S. capability to wage a nuclear war is still very much retained. The 2010 NPR restated that the United States will maintain the nuclear triad, the second strike capability of the United States is secured, and the chances of a strike by China or North Korea being able to obliterate the entire nuclear force is non-existent. There is no doubt that the decline in both deployed and stockpiled nuclear weapons from the end of the Cold War till today, is substantial. It must, nevertheless, be stated that the ability to destroy all conventional war-waging abilities of an enemy remains. Of all the nuclear states in the world, only Russia compares to the U.S. in terms of capabilities, and neither can hope to disarm the other by nuclear means.

One essential element to the maintenance of the American extended nuclear deterrence credibility is the ability to inflict costs on an adversary that far outweighs the benefits it can hope to achieve. In regards to both China and North Korea, there can be no doubt in Pyongyang or Beijing, that the United States has this ability. To conclude, the New START limits have little, if any, impact on the nuclear capabilities of the United States, and the credibility of the American extended nuclear deterrence in Korea is not impacted by the relatively minor numerical reductions envisaged by New START. The firepower, and the ability to deliver that firepower, is more than sufficient in post New START.

The question of when reductions in U.S. nuclear capabilities will impact the credibility of extended deterrence, is difficult to answer. As long as the United States
maintains close to numerical parity with other nuclear weapons states, and maintains the nuclear triad, nuclear survivability is secured, and the advantages of striking first is negated. If, on the other hand, the United States decides to unilaterally disarm, and other nuclear weapons states enjoy substantial numerical advantages, survivability can be questioned. Similarly, if the triad is reduced to a dyad, or even a monad, survivability can again be question. It seems unlikely that the United States will unilaterally reduce its nuclear arsenal below the nuclear levels of its adversaries. As long as the principle nuclear adversaries of the U.S., Russia and China, as well as India, maintain nuclear triads, following the United Kingdom and France in eliminating one or two legs of the triad seems unlikely.

6.0 Conclusion
This chapter has analyzed the U.S. nuclear capabilities and the arms limits in the New START treaty. In doing so, I have given an extensive overview of the three legs of the strategic nuclear triad, including the strategic delivery vehicles, associated warheads and the yield of these warheads. This was to give a clear indication of the destructive power of the U.S. arsenal, but also its limitations.

I have put forth four arguments. First, I have argued that the three legs of the strategic nuclear triad complement each other, and that they together guarantee force survivability, called second-strike capability. The nuclear capabilities of China and North Korea are significantly smaller than the U.S. capabilities, and while the former might have the ability to strike mainland America, the latter does not. Neither of them can threaten the survivability of the U.S. nuclear forces.

Second, I have argued that the New START limits will not substantially reduce the U.S. strategic nuclear arsenal. This is due to the fact that the U.S. arsenal is already close to the limits, but more importantly, the counting rules of the treaty masks the real number of delivery vehicles and associated deployed warheads allowed.

Third, I have consequently argued that the credibility of the U.S. extended nuclear deterrence in Korea is not affected by the New START treaty, because the ability of the U.S. strategic nuclear forces to strike any adversary while ensuring
second-strike capability, is still retained.

Fourth, I have argued that, in order for quantitative arms reductions to have an effect on extended nuclear deterrence credibility, the U.S. arsenal must be reduced significantly below that of adversaries, or a significant reduction in second-strike capability. The former implies a unilateral arms reduction, while the latter implies elimination of one or two legs of the triad. I have argued that these two eventualities are unlikely to occur.

The conclusion of the first three arguments is that New START does not reduce the credibility of the U.S. extended nuclear deterrence in Korea, and thus that the first variable identified in chapter 3, the capabilities-variable, is not affected negatively. With the last argument, I suggest that the likelihood of nuclear arms reductions reducing the U.S. extended nuclear deterrence credibility in the future, is small.
Chapter 5

U.S. Extended Nuclear Deterrence Posture and Doctrine.

1.0 Introduction
The belief in the concept of deterrence has long permeated U.S. strategic thinking, and should be regarded as a cornerstone of U.S. defense policy. The understanding of how to deter, however, has evolved steadily over the decades since the Second World War. What is to be deterred, and who to protect, has also evolved, reflecting changes in the international security environment, and political and military ties with foreign nations.

The preceding chapter 4 argued that the numerical reductions of deployed strategic delivery vehicles, and associated nuclear warheads agreed to under New START, have little impact on the U.S. extended nuclear deterrence credibility on the Korean Peninsula. This is because the reductions do not affect the nuclear capabilities of the United States, and that the triad, and consequently second-strike capability, will be maintained.

The purpose of this chapter is to analyze the second variable identified in chapter 3: the nuclear policy-variable. The chapter aims to accomplish this by three steps: First, to outline the evolution of U.S. extended nuclear deterrence policy. Second, to present the 2001 Nuclear Posture Review (NPR), the 2005 Doctrine for Joint Nuclear Operations and the 2010 Nuclear Posture Review. And third, to compare the 2010 NPR to the two other documents, and to discuss the impact of the 2010 NPR on U.S. extended nuclear deterrence credibility in general, and on the Korean Peninsula in particular. The chapter argues that the policy changes from the 2001 NPR and 2005 DJNO to the 2010 NPR, are not significant enough to weaken the credibility
of the U.S. extended nuclear deterrence in Korea. The most significant change in the 2010 NPR is the Negative Security Assurance. North Korea, however, is exempt from this guarantee, and as such its status has not changed.

1.1 The Evolution of U.S. Extended Nuclear Deterrence
The first attempt by the U.S. government at formulating a nuclear deterrence strategy was as a response to J. Robert Oppenheimer’s claim that nuclear weapons would make war more likely. Bernard Brodie and Jacob Viner claimed the opposite; that the fear of massive retaliation would make an enemy unlikely to initiate an attack, and that nuclear weapons therefore would deter, rather than invite an enemy (Holloway 2006:39-40). This formed the basis of U.S. nuclear policy during the Cold War. The Truman administration formulated the first strategy aimed at containing communism in general, and the Soviet Union in particular. It became known as the Truman Doctrine, and the policy of “Containment”. It marked a shift from Franklin D. Roosevelt’s hope for cooperation between the United States and the Soviet Union (Gaddis 2003:59). The Truman Administration saw the Soviet Union as the principle threat against U.S. security, and against the security of her allies. The policy of containment sought to keep that threat at bay.

Containment was initially not a military policy, but a political one. On June 5th 1947, in an address to the graduating class of Harvard, Secretary of State George C. Marshall promised that the United States would provide comprehensive economic assistance to those countries that would embrace the U.S. liberal democratic system, and turn their backs on the Soviet communist system (Gaddis 2003-59-60). This policy, which became known as the “Marshall plan”, became an essential part in the early policy of containment in Europe: The U.S. wanted to keep the Soviet threat where it was: In Eastern Europe. Bruce Martin Russett (1988:283) argues that deterring an attack on Western Europe was in fact the sole objective of U.S. nuclear strategy in the first years following the Second World War. This was a result of the lack of means by which the Soviet Union could deliver strategic weapons to the United States, and the prospect of a Soviet attack on continental United States seemed
A clear military nuclear deterrence policy was not conceived before Dwight D. Eisenhower discarded the idea of a preemptive attack on the Soviet Union at the beginning of the 1950’s (Gaddis 2003:62). This coincided with the surprise revealing of a Soviet nuclear weapon in 1949, which broke the American nuclear monopoly. Secretary of State John Foster Dulles formulated the Eisenhower administration’s policy of massive retaliation: a strategy that called for a severely disproportionate response, up to, and including, nuclear weapons, against the Soviet Union, even for smaller conventional attacks. According to Dulles:

Local defense will always be important. But there is no local defense which alone will contain the mighty landpower of the Communist world. Local defenses must be reinforced by the further deterrent of massive retaliatory power. [...] Otherwise, for example, a potential aggressor, who is glutted with manpower, might be tempted to attack in confidence that resistance would be confined to manpower. He might be tempted to attack in places where his superiority was decisive.

Quoted in Freedman 2003:81

As the Soviet Union developed a competent bomber force in the mid 1950’s, the primary focus on extended nuclear deterrence gradually shifted in favor of deterring an attack on the United States itself (Russett 1988:283). This had a serious impact on the credibility of the U.S. extended nuclear deterrence, as a nuclear retaliation on the United States itself became likely in the event the United States employed nuclear weapons in defense of allies (ibid.). The credibility of massive retaliation became problematic. Was it likely that the United States would respond with a massive nuclear strike in the event of a limited conventional attack on Western Europe? This doubt was further compounded with the realization that this would lead to an equally massive retaliatory nuclear strike by the Soviet Union. The strategy of massive retaliation was consequently moderated in the mid 1950’s when Dulles reassured that massive retaliation would only be an option in face of an all-out attack on Europe. Other responses would be appropriate for smaller scale attacks (Freedman 2003:82).

Massive retaliation thus gradually evolved to a policy of “flexible response”: The introduction of tactical nuclear weapons in the mid to late 1950’s, enabled military and policy planners to widen the range of options for which nuclear weapons could be
employed. The essence of this strategy was to respond flexibly and somewhat proportionately to a conflict: Rather than heavy strategic nuclear bombing, tactical nuclear weapons allowed the military to target enemy forces with smaller nuclear yields, limiting the dangerous fallout, but still inflicting devastating damage. These weapons were fielded in Europe and in Asia, and were to be available to battle commanders where the battle would take place: Not in the continental United State, but on the territory of allies on the Cold War front lines.

During the Cold War, the views of the Europeans differed somewhat from that of the Americans. The Europeans, especially the Germans, wanted a strong extended nuclear deterrence, built on long range ballistic missiles and strategic bombers. The Americans were reluctant, knowing that a retaliatory strategic nuclear attack on the Soviet Union would definitively result in a counter-retaliatory nuclear attack on continental United States (Russett 1988:284). They wanted a deterrence strategy focused on denying territory coveted by the Soviet Union, the rational being that the Soviet Union would not attempt an attack on territory it would not be able to hold. The U.S. extended nuclear deterrence strategy that prevailed during the latter half of the Cold War, was a mix of retaliatory and punitive strategic weapons, and denial-based tactical nuclear weapons, designed to repel an adversary’s invasion.

The problem of credibility accompanied U.S. extended nuclear deterrence strategy throughout the Cold War. David Holloway alludes to an important element of credibility that is sometimes overlooked: Not only must the adversary find the threat to be credible, but the “pawn” must also find it credible (2006:40). Famous is Charles de Gaulle’s doubt in the willingness of an American President to sacrifice New York for Paris (Bidwai & Vanaik 2000:168). If the pawn does not see the nuclear guarantee as credible or secure, why should the adversary? Furthermore, if the pawn doubts the guarantee, the only rational alternative is to attempt to maximize security on its own. How the state can go about doing this will depend heavily on the resources that state possesses, but ultimately that state can be tempted to develop its own nuclear weapons. As a response to these doubts, the U.S. extended nuclear deterrence policy has been refined numerous times.
2.0 Nuclear Doctrine

As Scott Sagan (2009:165) notes, declaratory policy and documents serve several purposes. Most important of these is arguably the fact that they serve as signals, or letters of intent, to both allies and adversaries, so as to enhance the credibility of deterrence. Declaratory policies can also create commitment traps, meaning that if an adversary’s action clearly exceeds a specific response threshold, the pressure on the President to deliver on the threat increases: “In short, such threats do not just signal commitment, they create commitment” (Sagan 2009:170). Payne, Scheber and Guthe (2010:8) claim that this might be the reason for the U.S. not wanting to state exactly what kind of response a North Korea attack on the ROK would be. American officials, they say, are reluctant to detail the military response because that could “[...] lock the United States into certain retaliatory options, limit the flexibility of U.S. military plans, and arouse criticism from other countries in the region” (ibid.)14.

Consequently, the U.S. employs what is known as “calculated strategic ambiguity” in its public nuclear policy, the rational being that adversaries are less likely to initiate risky action if there is no clear nuclear threshold. If there was a declared threshold, that could invite unwanted action perceived to be close, but not over the threshold (DJNO 2005:viii).

2.1 Contemporary U.S. Nuclear Deterrence Strategy

The end of the Cold War is the single most important event that changed the strategic nuclear environment, and the event that has had the most impact on U.S. nuclear deterrence strategies. Nuclear deterrence is, however, still considered vital to U.S. security strategies, as stated in the Nuclear Posture Review Reports of 2001 and 2010. These two reviews discuss how the United States will implement nuclear deterrence in the new century. The question is how the Bush and Obama administrations believe they can craft a credible nuclear deterrence strategy. The next sections will attempt to answer those questions. These issues are important to discuss because they identify the

14 It should, however, be pointed out that such commitments need not be nuclear commitments, as argued by Bruno Tertrais (2009:24).
challenges the administrations perceived in the early twentieth century, and the declared nuclear posture is aimed at influencing both allies’ and adversaries’ understanding of the nuclear guarantee. The section begins with an analysis of the 2010 nuclear posture review, and contrasts it somewhat with the classified 2001 Nuclear Posture Review Report and the revised Bush nuclear doctrine of 2005.

2.2 The 2001 Nuclear Posture Review

There have been important changes in U.S. nuclear doctrine over the last years. President George W. Bush did not attempt to get the Comprehensive Nuclear Test-Ban Treaty (CTBT) passed in the Senate after its initial rejection in 1999, and withdrew from the Anti-Ballistic Missile Treaty (ABMT) (Warren 2011:432). According to Aiden Warren (2011:432):

> Bush attempted to move the nuclear option to the fore of American security strategy; a defining policy that was updated, refined, and reaffirmed through the unclassified and classified guidance documents it released during the administration’s tenure.

These claims are not, however, reflected in the 2001 Nuclear Posture Review Report. The 2001 NPR was, in contrast to the 2010 NPR, classified. Portions of it were leaked, and the Federation of American Scientists and Hans M. Kristensen were able to reconstruct some, if not most of it (see NPR 2001). It attempts to shift focus away from Cold War deterrence of major international nuclear states, to deterrence of regional “rogue” states in an unpredictable security environment (Payne 2005:138). What is striking about the 2001 NPR is the call for a deemphasizing of nuclear weapons in U.S. deterrence strategy: The rational being that threats of a strong nuclear response to an attack by a “rogue” state are not credible. (Payne 2005:141). The United States, according to the 2001 NPR, needs a larger deterrence toolbox, with both nuclear and conventional weapons, both offensive and defensive (ibid.). The 2001 NPR sought to strengthen the credibility of U.S. deterrence by deemphasizing nuclear weapons, and emphasizing conventional weapons, in essence a return to a softer form of “flexible response”. Secretary of Defense Donald Rumsfeld said in the unclassified
foreword that this would pave way for a drastic reduction of operationally deployed strategic nuclear warheads to the range of 1.700-2.200 (NPR 2001:1-2).

Gauging the impact of the 2001 NPR on extended nuclear deterrence is difficult, especially since the whole report is not available. David S. Yost (2004), discussing the impact of the report on NATO allies, argues that it was not controversial. Yost only discusses the proposed numerical reductions in strategic nuclear warheads envisaged in the report, saying

Short of a grave crisis in which the resolve and operational capabilities of the United States were tested, however, the US strategic nuclear force posture is significant for extended deterrence in Europe mainly on a political level. [...] It is widely believed that, even after the reductions envisaged in the NPR, the remaining US nuclear forces would be more than sufficient to fulfill their strategic and political purposes.

Yost 2004:709

Although Yost argues this based on the SORT treaty limits, his findings echo the findings of chapter 4. A few analysts have claimed that the classified NPR contains strategies for nuclear pre-emptive attacks. However, the most senior analysts do not report this, and there is no mention of pre-emption in the leaked sections of the report.

In short, the 2001 NPR outlined a strategy that focused less on deterring major powers, and more on deterring “rogue” states. Although classified, it was intended for Congress and is therefore somewhat polished, and arguably more focused on policy goals than military goals. In 2005 a document was leaked that revealed far more of what would actually trigger a nuclear response by the United States than the 2001 NPR did: the “Doctrine for Joint Nuclear Operations”.

2.3 The 2005 Doctrine for Joint Nuclear Operations

The classified draft called “The Doctrine for Joint Nuclear Operations” (DJNO) was issued by the Joint Chiefs of Staff and posted erroneously on the Pentagon’s web pages. In contrast to the NPR’s, the DJNO outlines under what conditions battle commanders may request, and ultimately use tactical nuclear weapons. Keep in mind

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15 See e.g. pp. 727 in Roland Bleiker (2003). «A rogue is a rogue is a rogue: US foreign policy and the Korean nuclear crisis». In International Affairs, Vol. 79, No. 4, pp. 719-737.
that these are tactical weapons, not strategic weapons, but the document is still relevant.

Before turning to the document itself, there are issues to keep in mind when reviewing a secret document. First, the document was intended to be read by neither politicians nor the public, and therefore is not polished like the NPR’s. Second, comparing the secret DJNO with the NPR’s is problematic: For one, the DJNO is a product of the military, not the civil administration. Third, it is not publicly known whether a similar secret doctrine is guiding U.S. nuclear policy today. It is, however, interesting to discuss the differences between the NPR’s and the DJNO, while keeping in mind that they might serve different objectives.

The DJNO lists 8 examples of what might trigger a nuclear response:

1. An adversary using or intending to use WMD against US, multinational, or alliance forces or civilian populations.
2. Imminent attack from adversary biological weapons that only effects from nuclear weapons can safely destroy.
3. Attacks on adversary installations including WMD, deep, hardened bunkers containing chemical or biological weapons or the C2 infrastructure required for the adversary to execute a WMD attack against the United States or its friends and allies.
4. To counter potentially overwhelming adversary conventional forces, including mobile and area targets (troop concentration).
5. For rapid and favorable war termination on US terms.
7. To demonstrate US intent and capability to use nuclear weapons to deter adversary use of WMD.
8. To respond to adversary-supplied WMD use by surrogates against US and multinational forces or civilian populations.

DJNO 2005:III-2

What is striking about these 8 examples is the projected willingness to use nuclear weapons in combat, and especially the willingness to use nuclear weapons preemptively. This is further underscored: “To maximize deterrence of [enemy] WMD use, it is essential that US forces prepare to use nuclear weapons effectively and that US forces are determined to employ nuclear weapons if necessary to prevent or retaliate against WMD use” (DJNO 2005:III-1 [my italics]). It clearly states what the
Joint Chiefs of Staff view as needed for a credible U.S. deterrence:

The effectiveness of deterrence depends on how a potential adversary views US capabilities and its will to use those capabilities. If a potential adversary is convinced that US forces can deny them their goals (by damage to their military, its support, or other things of value); and if that perception leads the potential adversary to limit their actions, then deterrence is effective. Deterrence of potential adversary WMD use requires the potential adversary leadership to believe the United States has both the ability and will to preempt or retaliate promptly with responses that are credible and effective.

DJNO 2005:1-6

It is obvious that this draft does not echo the Bush administration’s pledge to reduce the role of nuclear weapons in U.S. strategic thinking (Pincus 2005:2). The draft was later cancelled by the Pentagon, however the cancellation simply removes the document from the public domain and the internal reading list of the Pentagon (Nukestrat 2006). It does not change the recommendations of the Chiefs.

Since Barack Obama placed nuclear policy revision at the top of his agenda, a review and revision of the Bush administration’s nuclear policy was natural. This begun shortly after Obama’s inauguration and produced the 2010 Nuclear Posture Review (NPR).

3.0 The 2010 Nuclear Posture Review

The 2010 NPR is a review of the United States’ nuclear capabilities, including its nuclear triad and delivery vehicles, command and control infrastructure, fissile material production and nuclear policy (Perry & Schlesinger 2009:19). In addition, the object of the 2010 NPR is to provide “[...] a roadmap for implementing President Obama’s agenda for reducing nuclear risks to the United States, our allies and partners, and the international community” (NPR 2010:i). It does, however, place emphasis on the reservations the president has made in regards to nuclear disarmament:

Indeed, as long as nuclear weapons exist, the united States will sustain safe, secure, and effective nuclear forces. These nuclear forces will continue to play an essential role in deterring potential adversaries and reassuring allies and partners around the world.

NPR 2010:v
This represents a clear adherence to nuclear deterrence, and the NPR must be considered to be just as much a roadmap to nuclear deterrence, as it is to nuclear disarmament.

The 2010 NPR briefly analyses the current strategic environment, and contrasts it with the Cold War. Here, the 2010 NPR matches the 2001 NPR nearly perfectly: They both state that the United States no longer sees Russia as an adversary (NPR 2001:17), and that the “[…] prospects for a military confrontation [with Russia] has declined dramatically” (NPR 2010:iv). Furthermore, the 2010 NPR states that the U.S.-Sino relationship is characterized by increasing interdependence, but both highlight that the U.S. is concerned by China’s military buildup, both conventional and nuclear, and the secrecy in which it is shrouded (NPR 2010:v; NPR 2001:16-17). In addition, both NPR’s regard the Iranian and North Korean nuclear programs as highly troublesome, and both seek to shift attention from Europe to Asia (ibid.).

3.1 The Negative Security Assurance

The 2010 NPR goes further than the two other documents in several aspects, but maybe most important is the “Negative Security Assurance” (NSA): The United States pledges that it will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to, and in compliance with, the Non-Proliferation Treaty (NPR 2010:15). This is significant as it means that the United States will not use nuclear weapons in response to a massive conventional attack by a non-nuclear NPT state. However, it does not change the status of several of the U.S. adversaries, as these are either nuclear weapons states (Russia, China, and maybe North Korea), or not in compliance with the NPT (Iran, North Korea). In this regard, the NSA has little effect on the extended nuclear deterrence credibility in East Asia. Rather, the NSA is meant as a carrot to those states not members of, or in compliance with, the NPT:

This revised assurance is intended to underscore the security benefits of adhering to and fully complying with the NPT and persuade non-nuclear weapon states party to the Treaty to work with the United States and other interested parties to adopt effective measures to strengthen the non-proliferation regime.

NPR 2010:15
The NSA is actually in large part focused on North Korea. During a Department of Defense press conference, Under-Secretary James Miller stated that

part of the rationale for the negative security assurance and its change was, in fact, to encourage North Korea to go the opposite direction and to desire to be one of those states that are compliant with their nuclear nonproliferation obligations.  

Quoted in Seongwhun 2011:42

In the case of North Korea, a denuclearization and a return to NPT obligations would eliminate the U.S. nuclear threat (Kim 2012:77). Such specific conditions for U.S. nuclear retaliation is by some claimed to be weakening the American calculated strategic ambiguity (Seongwhun 2011:42). A valid objection is that the NSA proscribes a nuclear response to a massive chemical or biological attack by an NPT member on the U.S. or its allies. In the case of North Korea, returning to the NPT and abandoning its nuclear weapons program would remove the nuclear umbrella from South Korea, and nuclear weapons would not be used in response to a chemical or biological North Korean attack. Cheon Seongwhun (2011:43) argues that so long as North Korea holds on to its nuclear weapons, nothing will change in the U.S. extended nuclear deterrence on the peninsula. Yet, should North Korea abandon its nuclear weapons, the loophole in the NSA means that South Korea would only be covered by extended conventional deterrence. The problem is that North Korea still has large numbers of chemical and biological weapons, and they need not give these up when returning to the NPT. Paradoxically, if the deterrence of North Korea hinges on the nuclear aspect, South Korea could be more vulnerable with a nuclear-free North Korea.

The North Korean response to the NPR is, in light of the previous discussion, oddly reassuring: A Foreign Ministry spokesperson reacted negatively to the NPR, pointing out that North Korea is singled out for nuclear retaliation, and announced that North Korea will continue to build and modernize its nuclear arsenal (Seongwhun 2011:45). I agree with Seongwhun that there is little reason to believe North Korea will be motivated by the NSA to disarm. Consequently, all though the NSA is a significant move, it has little impact on the U.S. extended nuclear deterrence credibility in Korea.
3.2 Reduced Prominence of Nuclear Weapons

According to the NPR, the following four principles will guide U.S. nuclear policy under President Obama:

1) The United States will meet its commitment under Article VI of the NPT to pursue nuclear disarmament and will make demonstrable progress over the next five to ten years. We will work to reduce the role and numbers of U.S. nuclear weapons while enhancing security for ourselves, and our allies and partners.

2) The United States will continue to strengthen conventional capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks, with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons.

3) The United States would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners.

4) The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations.

NPR 2010:16-17

The emphasis on reduced prominence of nuclear weapons in U.S. policy that was lacking in the DJNO, is again firmly in place in the 2010 NPR. What is evident in these guidelines is the decreasing window of possible situations where the United States will contemplate using nuclear weapons. This begs the question of how the 2010 NPR contributes to U.S. extended nuclear deterrence credibility.

It appears that the Obama administration has placed priority on three fronts: First, the NPR clearly is designed to continue the deemphasizing of nuclear weapons envisaged in the 2001 NPR, and a further move to a less prominent role for nuclear weapons in U.S. policy. The question of how to maintain strategic deterrence at reduced force levels is devoted substantial paragraphs in the NPR. These paragraphs are more or less justifications for the force levels agreed to under New START. As argued in chapter 4, I see the force reductions under New START as having little, if any impact on deterrence credibility.

Second, to reassure allies of continued U.S. support and maintenance of the
nuclear umbrella. Of significance is the statement that forward deployed U.S. forces in key regions will remain (NPR 2010:31). Keeping Thomas Schelling’s “self-entrapment” in mind, this clearly serves extended nuclear deterrence as well. What might be worrisome to allies is the signaled shift in focus in U.S. extended deterrence policy, from nuclear to conventional deterrence. The 2010 NPR states:

U.S. nuclear weapons will play a role in the deterrence of regional states so long as those states have nuclear weapons, but the decisions taken in the NPR, BMDR\textsuperscript{16}, and QDR\textsuperscript{17} reflect the U.S. desire to increase reliance on non-nuclear means to accomplish our objectives of deterring such states and reassuring our allies and partners.

NPR 2010:28

The “Congressional Commission on the Strategic Posture of the United States”\textsuperscript{18} emphasized that a “softening” of U.S. nuclear weapons policy and further disarmament will be highly worrisome to some of the states living under the nuclear umbrella. Specifically, one important ally pointed out privately to the commission that “[…] the credibility of the U.S. extended deterrent depends on its specific capabilities to hold a wide variety of targets at risk […]” (Perry & Schlesinger 2009:21).

To compensate for the reduced role for nuclear weapons in deterrence, the 2010 NPR states that the United States will bolster its conventional deterrence. This is, however, not reflected in troop deployments, as these appear to remain at the same force levels across U.S. deployments to allies. The U.S. has, on the other hand, invested in missile defense systems, and agreed in September 2012 to develop and deploy a missile defense system in cooperation with Japan aimed at countering Chinese and North Korean missile capabilities (Shanker & Johnson 2012). According to Hyun-Wook Kim (2012:78-9) this signifies a shift in extended deterrence from “deterrence by punishment” to “deterrence by denial”. This is to some extent correct in regards to the nuclear threat from North Korea, it is arguably not correct concerning the conventional threat. So long as the U.S. troops in South Korea numbers roughly 28,500, the ability to deny a conventional, large scale invasion, is questionable,

\textsuperscript{17} 2010 QDR for Quadrennial Defense Review.
\textsuperscript{18} Known as the Perry-Schlesinger commission after the name of its chairman.
insomuch as North Korea fields the fourth largest conventional army in the world\(^\text{19}\). In regards to the conventional threat, U.S. extended deterrence still relies on punishment. The *credibility* of the U.S. extended nuclear deterrence to South Korea appears not to be affected. This is because the trip-wire of forward deployed U.S. forces will remain, and the reservations in the negative security assurance excludes states nuclear armed states and states not part of or honoring their NPT commitments.

*Third*, compared to the 2005 DJNO, the NPR seeks to shroud the U.S. nuclear policy in more ambiguity. According to William J. Perry and James R. Schlesinger (2009:36), calculated ambiguity is well suited for strategic deterrence because it instills uncertainty in adversaries about what actions might transgress the nuclear threshold. But they also note that in the event of an immediate crisis, calculated ambiguity might not have the same deterrence effect. It could also be argued, as Hans M. Kristensen (2010:10) does, that in a crisis, ambiguity might even have the opposite effect, namely increasing the risk of escalation: As a consequence of incremental escalation, the nuclear threshold can be move. If, on the other hand, an explicit threshold is crossed, this will put tremendous pressure on the U.S. president to act. As argued by Hyun-Wook Kim (2012:79-80) it seems unlikely that North Korea will provoke an acute crisis where the U.S. nuclear deterrence is actually challenged. The crises that North Korea has provoked so far have not been anywhere close to a nuclear threshold. As Scott D. Sagan (2003:17) notes, “Nuclear weapons deter adversaries from attacking one’s vital, and not minor, interests”. It seems logical that a strategy of ambiguity is well served in the current strategic environment, however it must be carefully considered should an acute crisis emerge.

In contrast to the DJNO, the NPR does not mention preemption at all, whether maintaining it or discarding it. The 2005 DJNO must be understood as part of the Bush administration’s overall justification of preemption after 9/11, and it should also be noted that the preemption envisaged in the DJNO is still only in extreme conditions, and not to be viewed as a policy of first strike. As long as the United States does not

\(^{19}\) See chapter 6 for a discussion of U.S. Force levels in Korea.
pledge “No First Use”, there lies an implicit threat of preemptive attack in the event of a nuclear crisis. The 2010 NPR has not ruled this out, and can be seen as part of the calculated ambiguity: Adversaries will not know what aggression will warrant a nuclear response.

4.0 Conclusion

From massive retaliation to flexible response, U.S. extended nuclear deterrence policy has evolved and changed in response to technological innovations and an ever-changing international security environment. Since the Cold War, however, the substantial cuts in deployed strategic nuclear warheads have given impetus to the nuclear abolition movements. Both the Bush and Obama administrations have paved way in this regard. The most important policy document that outlines the administrations’ views on nuclear weapons and deterrence is the Nuclear Posture Review report. The 2001 report by the Bush administration was confidential, but Obama published his 2010 report. In this report the administration highlights its vision for a nuclear-free world.

I have put forth three arguments: First, the NPR firmly concludes that the U.S. will maintain its nuclear forces at a ready state, and that it will maintain strong nuclear deterrence as long as there are nuclear weapons in the world. Obama has thus placed serious restraints on the possibility of a nuclear-free world, as it is hardly likely that states in a complicated and dangerous security environment, such as Israel, India and Pakistan, will relinquish their nuclear weapons. Therefore, the NPR reaffirms the U.S. commitment to nuclear weapons.

Second, the 2010 NPR reaffirms its pledge to protect allies at all costs, even with nuclear weapons. The NPR explicitly states that the United States, although having removed all of its forward deployed nuclear weapons from the Pacific region, relies on its capacity “[…] to redeploy nuclear systems in East Asia in times of crisis” (NPR 2010:32). It also states that no changes in its extended nuclear deterrence policies will change without consultation with its allies (ibid.).

Third, I have argued that the negative security assurance provided in the 2010
NPR will have no effect on the extended nuclear deterrence in Korea, because the likelihood of North Korea disarming is low. And *Forth*, the strategic ambiguity reflected in the 2010 NPR is well suited for the current strategic environment.

To conclude, there are no signs that point to the fact that the 2010 NPR has weakened the credibility of the U.S. extended nuclear deterrence.
Chapter 6

Extended Nuclear Deterrence On the Korean Peninsula:

*The 2010 NPR, Global Zero and the Credibility of the Nuclear Umbrella*

1.0 Introduction

The two preceding chapters discussed how New START and Global Zero have impacted the U.S. extended deterrence credibility. This chapter examines the deterrence situation on the Korean Peninsula and attempts to find evidence of such a weakened credibility. The central question is how President Barack Obama’s new nuclear policy has been received on the Korean Peninsula. Can the North Korean actions since 2008 be attributed to weakened extended nuclear deterrence credibility? Do expert analysts, policy makers, and the South Korean public show signs of reduced confidence in the credibility of the U.S. extended deterrence? And are the calls for redeployment of U.S. tactical nuclear weapons caused by concerns over credibility, or are they generated by other factors? Such calls must then be carefully analyzed so as to be able to attribute them to the correct causes that generate them. That these calls occur is not in itself a sign that credibility is lacking.

This chapter begins with an outline of U.S. security guarantees in the Pacific in general, and the guarantee to South Korea in particular. It then turns to the U.S. nuclear weapons that were deployed on the peninsula during the Cold War, before analyzing the relationship between the United States and North Korea under President Bush and Obama. The chapter then discusses whether the North Korean hostile actions
are internally or externally driven, before turning to how the South Korean public, analysts and policy makers have responded to the 2010 NPR and Global Zero. A substantial discussion is devoted to the calls for redeployment of U.S. tactical nuclear weapons, and whether these calls are generated by a lacking extended nuclear deterrence credibility, or whether they are generated by North Korean hostile actions. Thereafter, the calls for development of a South Korean nuclear weapon are discussed. The chapter concludes with a quick discussion of the United States Forces Korea (USFK) tripwire, before concluding that there are few signs that demonstrate a lack of credibility in the U.S. extended nuclear deterrence to South Korea.

2.0 U.S. Security Guarantees in the Pacific
A vital part of the U.S. extended nuclear deterrence policy is the security guarantees extended to its allies. NATO is the obvious example of a collective security guarantee: Article V of the NATO charter states that an armed attack on any NATO member is to be considered an armed attack on all NATO members. So far, the only instance where article V has been invoked was after the 9/11 attack. NATO is a collective security arrangement, and each member extends security guarantees to all the other members. There is, however, no equivalent to NATO in the Pacific region. Consequently, U.S. allies in the Pacific region rely on bilateral, treaty based security relationships, and nuclear debates are perceived mainly through bilateral lenses (Bush 2011:5; O’Neil 2011:1444). There are two states with especially firm security ties to the United States: Japan and the Republic of Korea (ROK). Both of them have clearly defined adversaries: Japan has a strained relationship with China, and the Republic of Korea is technically still at war with a hostile North Korea. They are also non-nuclear weapons states, but have both considered developing a nuclear weapon of their own (Payne, Scheber & Guthe 2010:1). Their relationship with the United States is strong, and according to Keith Payne, Thomas Scheber and Kurt Guthe (2010:3) the stronger the ties between pawn and protector, the more credible a pledge of defense is.
2.1 The U.S. Security Guarantee to the Republic of Korea

The Republic of Korea has enjoyed a security guarantee by the United States for more than five decades. The guarantee covers two fundamental purposes: First, the guarantee is designed to discourage an attack by North Korea, and second it is designed to assure and give confidence to the ROK leadership of U.S. commitment to defend them (Payne, Scheber & Guthe 2010:3). The commitment to defend the ROK was forged after the Korean War in the 1950’s, where the United States lost more than 33,000 soldiers while defending the South from the North (DMDC 2008). The defense of ROK was deemed necessary after a change in the Truman doctrine of containment: A move away from defending selected “strongpoints”, such as Western Europe and Japan, and to a defense of the “perimeter”\(^{20}\). The spread of communism had to be stopped everywhere, not just to key allies. The alliance between the ROK and the United States was forged by the ensuing war, and is still today referred to as forged in blood (Payne, Scheber & Guthe 2010:4). The defense of the ROK is valuable to the United States for several reasons. First, the country is, like the U.S., a democratic state with a market economy with strong economic ties to the U.S. In fact, the ROK is the 14\(^{th}\) largest economy in the world, and the seventh largest trading partner of the United States (ibid.). Second, the Republic of Korea has provided military support to the United States in several conflicts, including the Vietnam War, Afghanistan and Iraq. And third, the United States has strong interests in maintaining peace on the Korean Peninsula because a war between North and South could quickly drag other major players into the conflict, such as China, Russia and Japan (ibid.).

The formal alliance between the Republic of Korea and the United States, called the Mutual Defense Treaty, was signed in 1953, two months after the ceasefire with North Korea. The purpose of the treaty was to commit the United States to the future defense of the ROK, and to assure it that it would not be abandoned. It states that “[...] no potential aggressor could be under the illusion that either of them stands alone in the Pacific area” (Mutual Defense Treaty 1953). Article four of the treaty

grants the United States the right to deploy and station troops in the Republic of Korea as determined by mutual agreement. After the ceasefire that ended combat on the peninsula, the United States stationed over 300,000 troops in the ROK, but this number has been in steady decline, and was in 2010 at approximately 28,500, the third largest peace time deployment of the United States21 (Payne, Scheber & Guthe 2010:12). The presence of these troops is integral to the U.S. assurance to the ROK, and to U.S. deterrence, echoing Thomas Schelling’s notion of self-entrapment. Payne, Scheber and Guthe (2010:11) also recognize this:

Permanently stationed ground forces, in particular, seem to have an assurance effect not duplicated by temporary deployments [...] probably because they are unlikely to be withdrawn overnight and often are positioned where they will be in direct engagement by an enemy attack, thus ensuring U.S. involvement in a conflict.

As late as March 2012, President Obama reiterated that defense spending cuts would not affect the security relationship between the U.S. and the Republic of Korea, and that “America’s armed forces are going to stay ready for the full range of contingencies and threats” (Obama 2012).

The Mutual Defense Treaty of 1953 does not mention nuclear weapons, but the pledge to protect the ROK with nuclear weapons has been reaffirmed by the U.S. Secretary of Defense each year at the annual Security Consultative Meetings (SCM), held with the ROK Minister of Defense, since 1978 (Payne, Scheber & Guthe (2010:6). This pledge was elevated after North Korea conducted a nuclear weapons test in 2006, and revealed to the world that it had successfully enriched nuclear fuel to weapons grade. The test was condemned by the United Nations Security Council. President George W. Bush condemned the test immediately following the announcement by the North Koreans, and further stated that he “[...] reaffirmed to our allies in the region, including South Korea and Japan, that the United States will meet the full range of our deterrent and security commitments”, and that “The United States remains committed to diplomacy. And we will continue to protect ourselves and our interests” (CNN 2006).

21 Behind Germany and Japan
Secretary of Defense Leon Panetta reaffirmed these promises at the 2011 SCM: “[...] the continued U.S. commitment to provide and strengthen extended deterrence for the ROK, using the full range of capabilities, including the U.S. nuclear umbrella, conventional strike, and missile defense capabilities” (Yonhap News Agency 2011). One evolution of this pledge is worth noting: Before the 2009 SCM the wording of this assurance was “firm U.S. commitment and immediate support to the ROK, including continuation of the extended deterrence offered by the U.S. nuclear umbrella” (Payne, Scheber & Guthe 2010:7). This is interesting because, beginning with the 2009 SCM communiqué, conventional strikes and missile defense are now mentioned. This is in accordance with the Obama administration’s policy of a reduce role for nuclear weapons in U.S. strategic thinking. According to Keith Payne, Thomas Scheber and Kurt Guthe (2010:7), this may be a signal to the ROK that the U.S. will rely more on conventional deterrence, and less on nuclear deterrence.

2.2 U.S. Nuclear Weapons in South Korea
The United States introduced tactical nuclear weapons to South Korea during the Cold War, but removed all of them in 1991, a move that was intended to persuade or induce North Korea to abandon its nuclear weapons program (Payne, Scheber & Guthe 2010:5). Seoul agreed to the removal of American nuclear weapons for the same reasons. Since then, the United States extended nuclear deterrence has relied on strategic and non-strategic nuclear weapons deployed elsewhere (Payne, Scheber & Guthe 2010:14). There have, however, been calls for a redeployment of American nuclear weapons in the last decade. This will be further discussed below.

3.0 North Korea: From Bush to Obama
George W. Bush did not have an easy relationship with North Korea, having first placed it on the “axis of evil” list, before softening his stance by lifting trade sanctions towards the end of his second term (Funabashi 2008:115). Bush’s hard stance, beginning after the revelation of North Korea’s nuclear weapons program in 2002, was diametrically opposite of what the ROK government’s “sunshine policy” was aiming
for: While the Bush Administration’s focus was on rapid “regime change”, South Korean president Kim Dae-jung focused on positive engagement and believed Kim Jong-il’s regime was changing for the better. Consequently, Dae-jung saw the hostile U.S. policy as detrimental to the South Korean efforts (Kim 2002:109-110). This was also echoed in public opinion polls: In a 2002 U.S. state department poll, 46% of those South Koreans polled had an “unfavorable” or “somewhat unfavorable” view of the United States, citing American unilateralism as the principle reason (Woo-Cumings 2005:62).

George W. Bush did, however, manage to reach some of his administration’s goals on the peninsula. Yoichi Funabashi (2008:110), writing on Bush’s accomplishments in East Asia, notes that the security relationship between U.S. alliance partners grew stronger during Bush’s presidency, and the “six-party talks” with North Korea showed prospects. These negotiations started after the North Korean withdrawal from the NPT in 2003, but at first delivered few tangible results. The October 2006 underground nuclear detonations, although garnering heavy condemnation, led to an increased effort in the six-party talks, and the 5th round of the talks, held in February 2007, yielded the first positive breakthrough: North Korea promised to shut down its nuclear enrichment facility in Yongbyon and allow IAEA to inspect the facility, in return for emergency assistance provided by the other parties. North Korea delivered on its promise, and IAEA inspectors verified the shutdown of Yongbyon.

President Barack Obama approached the Korean issue with a promise of dialogue, but the achievements of the six-party talks came to an abrupt end early in his first term: In 2009, North Korea was again condemned by the UN Security Council for launching what Pyongyang called a satellite, but which was widely believed to be a ballistic missile test (BBC 2009). Shortly thereafter, in defiance of the UN condemnation, North Korea conducted an underground nuclear test (ibid.). President Obama issued a statement calling North Korea’s pursuit of nuclear weapons “in blatant

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22 The members were South Korea, North Korea, United States, China, Japan and Russia. For history and analysis of the six-party talks, see Emma Chanlett-Avery and Ian E. Rinehart (2012) North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation, CRS Report for Congress.
defiance of the United States and the United Nations Security Council” (Quoted in BBC 2009). This also lead to the cancellation of all U.S. aid to North Korea, and North Korea has not received any form of aid since 2009 (Chanlett-Avery & Rinehart 2012:20). Despite this, the Obama administration has maintained a policy of “strategic patience”: waiting for the North Koreans to reengage in negotiations while maintaining pressure on the regime (Chanlett-Avery & Rinehart 2012:5). If North Korea meets certain criteria, i.e. take steps towards denuclearization, the six-party talks can resume, and the U.S. promises substantial aid should North Korea get rid of its nuclear arsenal and normalize relations with the South (ibid.).

Since the 2009 missile and nuclear tests, North Korea has engaged in several hostile and provocative acts, culminating in the shelling of Yeonpyeong Island and the sinking of the ROK naval corvette Cheonan. When Kim Jong-il died in 2011, his son Kim Jong-un inherited the position as Supreme Leader of North Korea. Bilateral negotiations between the U.S. and North Korea resumed, and resulted in the “Leap Day Agreement” where Kim Jong-un vowed to freeze nuclear tests and long-range missile tests, and the nuclear fission production at Yongbyon (The Economist 2012). President Obama pledged 240.000 tons of nutritional assistance in return (Chanlett-Avery & Rinehart 2012:7). This conciliatory move was, however, only temporary, when two weeks later, on March 16 2012, North Korea announced it would launch the Kwangmyŏngsŏng-3 rocket, reported by Pyongyang to carry another earth observation satellite similar to the one launched in 2009. The rocket was launched on April 13, and was said to mark the 100th anniversary of Kim Il-Sung’s birthday. The launch was a failure, as the rocket exploded and plummeted into the Yellow Sea a mere 90 seconds into its flight (ibid.).

During the Obama administration’s tenure, North Korea has made two demands to the United States to be fulfilled before it will conduct denuclearization: to be recognized as a nuclear weapon state, and to sign a peace treaty with the U.S (Chanlett-Avery & Rinehart 2012:8). These demands are viewed by many analysts to be no more than tactical moves, and that North Korea has no interest in disarming (ibid.). The overall trend in the relationship between North Korea and the U.S.-ROK is
difficult to assess, as conciliatory moves are followed by provocations in a fairly rapid cycle. It does seem, however, that the provocations have become more serious beginning with the 2009 rocket launch and nuclear test. It is prudent to ask whether this negative trend can be attributed to the changed U.S. nuclear policy, or whether it is driven by completely different dynamics. This is the topic for discussion in the following section.

3.1 North Korean Provocations: Internal or External?

It can be argued that North Korea’s apparent increasing willingness to take risks and provoke South Korea through the shelling of Yeonpyeong island and the sinking of the Cheonan in 2010, were results of a lacking U.S. extended deterrence credibility. Brigadier General Kim Seung Taek (2010:2) argues along these lines:

Just as America’s nuclear arsenal consisting of thousands of warheads have failed to dissuade and deter Al-Qaeda from committing acts of terrorism, so too has the extended deterrence policy of the United States been ineffectual in deterring North Korea from engaging in limited local provocations and escalating tensions on the peninsula.

In responding to this statement it is prudent to remind readers of the fact that the nuclear guarantee extended to South Korea is not designed to deter skirmishes and acts of state terrorism. The “thousands of warheads” are not an instrument in deterring North Korea from “limited local provocations”. Hyun-Wook Kim (2012:78) commits the same error when he concludes that the Negative Security Assurances provided in the 2010 NPR is potentially weakening the U.S. extended deterrence on the Korean Peninsula because smaller provocations cannot be deterred. As mentioned before, this is a common misperception of nuclear deterrence.

Andrew O’Neil (2011:1447-8) argues that the willingness to run risks has nothing to do with American security guarantees to South Korea, or a weakening of its credibility, but rather a result of North Korean technological improvements in their own nuclear weapons program. Such conflict-seeking/conflict-escalating behavior, according to O’Neil, is common in states that have newly acquired nuclear weapons, and is a part of testing the state’s new nuclear deterrence. O’Neil also cites previous
North Korean provocations that were equally, or more serious, such as the downing of Korean Air Flight 858 in 1987, killing more than 100 civilians, and the killing of South Korean cabinet ministers in Rangoon in 1983 (ibid.). These actions took place during the Cold War when North Korea had more or less secure backing from the Soviet Union and China, but also at a time when the U.S. extended deterrence was worded more strongly than today. Even more important, the hostile actions in the 1980’s took place in the face of deployed U.S. tactical nuclear weapons in South Korea. The recent destabilization efforts by the North Korean regime cannot in itself be proof of a lack of credibility in the American extended nuclear deterrence.

Scott Snyder (2009) in his testimony to the House Committee on Foreign Affairs following the 2009 nuclear test, notes that North Korea appears to be inward looking rather than outward looking, meaning that it is more concerned with domestic issues than international. Snyder argues that the provocations leading up to the 2009 test was a result of Kim Jong-il seeking to “[…] lay the institutional and political foundations for a succession process from Kim Jong Il (sic.) to a successor leadership” (2009:7). The timing of the 2012 rocket launch appears to be motivated by the same internal reasons: Most analysts believe the launch was to provide the centerpiece for the 100th anniversary of Kim Il-Sung’s birthday, a celebration that was vital to Kim Jong-un establishing legitimacy after his anointment (Chanlett-Avery & Rinehart 2012:1). These provocations are part of the regime’s survival techniques and play a role in the internal power struggles: The nuclear weapons are intended to not only deter adversaries, but to cultivate the military’s support and thus protect the regime from coups d’état (Byman & Lind 2010:63).

There appears to be a connection between stalemates in negotiations and North Korean aggression, suggesting that North Korea uses a form of military blackmail to illicit aid and concessions. In November 2011 Pyongyang invited U.S. nuclear experts to inspect the construction of a new uranium enrichment facility that was unknown to the international society. Emma Chanlett-Avery and Ian E. Rinehart (2012:9) speculate that North Korea revealed this in an attempt to enhance its bargaining position in future negotiations. Andrei Lankov (2010) calls the North Korean regime “the world’s
most Machiavellian”, and argues that the sole reason for the North Korean nuclear program is to solidify the regime, and to extract aid from the outside world: “[North Korea] survives by making trouble, since it has to make trouble just to stay afloat” (ibid.). North Korea has through nuclear extortion been able to illicit more than $6 billion in food and cash aid from foreign governments since the end of the 1990’s (Byman and Lind 2010:65). Lankov argues that the apparent increase in provocations is a result of the tougher stance of the Obama administration in terms of sanctions and refusal to give aid (ibid.), ergo that the actions are aimed at forcing concessions in negotiations. I have no evidence to suggest that North Korean aggression and the toughness of the American policies are directly related, but the thought that they are is interesting. In any event, the likelihood of North Korea using its nuclear weapons physically is small, but its nuclear deterrent is used to back up its conventional attacks, and make a South Korean-U.S. response impotent (Kim 2012:79-80).

It appears safe to conclude that the North Korean nuclear, missile, and rocket tests, and hostile actions against South Korea, are not results of a weakening of the American extended nuclear deterrence credibility. The actions of North Korea are driven not by external events, but by internal. Although the toughness of U.S. policy might influence the behavior of North Korea, the behavior is arguably driven by the internal need for aid, rather than because of external hostility. There is no evidence of weakened U.S. extended nuclear deterrence credibility in the North Korean actions.

4.0 South Korea and the 2010 NPR
Since there is little evidence to suggest that the actions of North Korea can be attributed to a weakened U.S. extended deterrence credibility, investigating the South Korean response to the 2010 NPR, and Obama’s Global Zero initiative, will gauge the confidence in the U.S. nuclear umbrella and the credibility of the extended nuclear deterrence perceived by the pawn.

The 2010 NPR states that the new nuclear policy of the United States will not affect the security relationship between the U.S. and the ROK. Extended nuclear deterrence is to remain effective and strong. Yet, the United States continues to
withdraw troops from the Demilitarized Zone (DMZ) on the border between North and South Korea, and reduces its presence on the peninsula. This section analyses and discusses how the 2010 NPR and Obama’s nuclear policy has been received in Korea.

Scott Snyder (2011) writes an extensive analysis of the South Korean responses to Obama’s Global Zero initiative and the 2010 NPR. Snyder observes that most of the expert South Korean analysts appear to have accepted the new policy, and remain confident in the U.S. extended deterrence (Snyder 2011:149). Rather than viewing the review as specifically relevant for the U.S.-ROK relationship, they focus on the implications for, and signals perceived to be sent to, North Korea. In response to the 2009 North Korean nuclear test, President Obama and ROK president Lee Myung-bak issued a “Joint Vision Statement” where Obama reiterated the U.S. extended nuclear deterrence commitment to the ROK (Snyder 2011:149). This reassurance was well received in Seoul (ibid.). The statement echoes the annual reassurances issued at the Security Consultative Meetings, but was seen as particularly important because it was uttered by the president. Tae-woo Kim, an analyst with the Korean Institute for Defense Studies, even argued that the extended nuclear deterrence guarantee was strengthened: “The June 16 summit can be viewed as a success in both elevating the legal standing of the nuclear umbrella as well as expanding the scope of protection” (cited in Snyder 2011:150). This was in fact echoed by the pro-North Korean newspaper Chosun Sinbo stating that this was another reason to strengthen the North Korean nuclear deterrent (ibid.).

Although the South Korean government appears to have accepted the NPR, and remains confident of the U.S. extended nuclear deterrence, the NPR appears to have split the expert analysts. Those who remain confident cite the willingness of the U.S. to involve allies in the review process, and the assurances given to them. Specifically, the decision by the United States not to issue a “No First Use” pledge was seen as a clear message to nuclear-weapons aspiring states that a nuclear retaliation for a conventional attack still remains an option (Snyder 2011:151). Said one analyst: “I feel safe as long as the US maintains air strike capability in US bases in Japan and regular patrols of the [aircraft carrier] USS George Washington in the west Pacific”
(anonymous, cited in Snyder 2011:151).

This relaxed attitude towards the 2010 NPR and Global Zero is, however, not shared by all conservative politicians and analysts (Snyder 2011:149). Snyder (ibid.) recalls one analyst stating that the initiative is “attractive, but is [Obama] obsessed with the idea of a nuclear freeze or is he also looking at protection of allies?”. Some analysts who are skeptical about the NPR complain about a “downgrading of allies” (CSIS 2010:2). Exactly what this is meant to entail is difficult to say, but in a Center for Strategic and International Studies forum, one analyst stated that the U.S. commitment to protect its allies with nuclear weapons in the event of a chemical or biological attack was weakened in the 2010 NPR (ibid.). Furthermore, the strengthening of ballistic missile defense, export controls, improved conventional capabilities, and condemnation of violators envisaged in the NPR did not impress all of the Korean participants at the forum. They preferred an explicit threat of nuclear retaliation (ibid.). All in all, however, the 2010 NPR has been well received in South Korea, and the ROK government’s apparent relaxed attitude towards it implies that it is content with the credibility of the extended deterrence. It should also be noted that the ROK government is walking a tightrope, having to balance its North Korean policy not just in the face of public opinion, but also so as not to provide North Korea with further reason to commit hostile acts.

Hyun-Wook Kim (2012:79) questions whether the move away from “deterrence by punishment” towards “deterrence by denial”, based on missile defense and conventional military power, is well suited for the Korean Peninsula. His argument is that nuclear weapons provide some sort of psychological parity on the peninsula: Without a backing of U.S. nuclear weapons, South Korea is vulnerable to nuclear blackmail from the North. A question that therefore seems to recur is that of whether South Korea should threaten to develop its own nuclear weapon, or actually doing so, and the question of redeployment of U.S. nuclear weapons to the peninsula.
4.1 The Dual Track Approach

The fact that North Korea has nuclear weapons on its territory, and South Korea does not, obviously creates a nuclear imbalance. The withdrawal of the U.S. nuclear weapons from South Korea was done to encourage the North to abandon its nuclear quest, a policy that failed. There have been calls for redeployment of U.S. nuclear weapons to South Korea since North Korea revealed its nuclear program (Kim 2011). These calls have been spurred by the continued nuclear weapons program of North Korea, and after the two nuclear detonations in 2006 and 2009, and several missile and rocket tests, those calls have become stronger. The failure of the last North Korean ballistic missile test in 2012 does not ease this fear, as the ROK is well within striking distance already. A further worry is that, if North Korea develops a working ICBM able to strike the U.S. mainland, the credibility of the U.S. nuclear extended deterrence will be weakened. Conservative politicians and academics in South Korea claim that such a weakening can be offset by a redeployment of tactical nuclear weapons. One sophisticated plan for redeployment is the so-called *Dual Track Approach*: By first threatening to redeployment U.S. nuclear weapons, the U.S. and South Korea can negotiate with North Korea for a denuclearization of the peninsula on even terms. In this approach, a target date is set for redeployment to put pressure on the North Koreans. Should the negotiations fail, redeployment will be carried out. Once the redeployment is complete, negotiation for a mutual disarmament can take place (Seongwhun 2011:58). The following figure shows this dynamic:
Figure 6.0 Dual Track Approach

Gary Samore, Obama’s weapons of mass destruction policy coordinator, stated in 2011 that the United States would, in fact, redeploy tactical nuclear weapons if requested by Seoul, although the White House immediately attempted to backpedal, and claimed that this was not the case (Kim 2011). The ROK government has not shown any propensity towards such a request, but what are the arguments for and against redeployment? Is it likely that redeployment will have any effect on North Korean behavior, and is an introduction of nuclear weapons on South Korean soil likely to happen? The next sections attempt to answer those questions.

4.2 Reintroduction of Nuclear Weapons to the ROK
The opposition to redeployment of U.S. tactical nuclear weapons has stated several arguments: First, they argue that the current U.S. nuclear forces of SSBNs, and conventional forces in Korea and Japan, are capable of delivering a strong and credible deterrent. Second, they argue that there is strong opposition in the Korean public, and that redeployment would ignite heavy resistance. Third, redeployment could derail the Six Party Talks with North Korea and infuse the situation. And fourth, a redeployment
would be completely detrimental to President Obama’s efforts to reduce the salience of nuclear weapons in U.S. strategic thinking (Kim 2011).

In regards to the second point, there is contradicting evidence: A 2011 ASAN Institute for Policy Studies poll found that 75.4% of the respondents say they feel threatened by the nuclear capabilities of North Korea, and 67.3% of the respondents favored a redeployment of U.S. tactical nuclear weapons (Space Daily 2011). It is their first argument, however, that is the obvious crux of the problem: If the SSBNs and conventional forces of the U.S. are delivering a strong and credible deterrent, the redeployment of tactical nuclear weapons should be solely to implement the dual track approach, or an equivalent plan for denuclearization. If the extended nuclear deterrence is not credible, proponents argue that redeployment should occur for four reasons; one, there is a clear imbalance in favor of the North over the South; two, the wanted effect of removing the weapons in the first place, inducing North Korea to abandon its nuclear weapons program, did not materialize; three, tactical nuclear weapons will moderate the North Korean leadership and prevent further provocations; and four, a redeployment would, proponents say, strengthen an already weakened extended nuclear deterrence credibility, increase leverage over the North, and encourage Beijing to place more pressure on North Korea (Kim 2011).

Given the fact that North Korea is conducting its provocative actions in the face of U.S. strategic nuclear weapons, and that North Korea conducted similar provocations during the 1980’s when the U.S. deployed tactical nuclear weapons on the peninsula, it does not appear likely that a reintroduction of tactical nuclear weapons will moderate the North Korean leadership. Consequently, the argument comes down to whether or not the current U.S. extended deterrence is strong enough, and whether a dual track approach is likely to lead to a renewed denuclearization effort on the peninsula. As argued above, the provocations seen from North Korea appear to be internally driven, not externally, and the South Korean concern over the U.S. extended deterrence appears to be driven by the recurrence of these provocations from the North. Duyeon Kim (2011) seems to agree, stating that this new public debate on tactical nuclear weapons is a result of the evolution of the North Korean nuclear
weapons program, the two nuclear tests, several missile and rocket launches and the shelling of Yeonpyeong. Given the fact that U.S. extended nuclear deterrence is not aimed at deterring these small scale attacks, and never has been, it is not a weakened credibility of the nuclear extended deterrence that is causing these South Korean concerns, but more likely the hostile actions stemming from the internal relations of North Korea. I therefore argue that a reintroduction of tactical nuclear weapons will have little, if any effect on these provocations: First, a reintroduction would almost certainly derail the current form of the six-party talks, which is the preferred venue for overt negotiations with North Korea. Second, it seems overly optimistic to believe that simply reintroducing tactical nuclear weapons will curtail North Korean provocations, all the while similar provocations were undertaken in the 1980’s while the U.S. deployed these weapons. Third, it seems highly unlikely that the ROK or the U.S. government will pursue such a move in the current political and strategic climate, as it would be completely detrimental to the nuclear policy of President Obama. I state this in spite of the provisions in the 2010 NPR saying that the U.S. relies on its capacity to redeploy nuclear systems to East Asia, as mentioned in chapter 5. The current strategic environment on the Korean Peninsula is marked by conflict, but not by imminent war. Short of imminent war, I see no circumstances that the Obama administration would consider such a move.

On the other hand, if implementation of the dual track approach becomes a viable alternative, redeployment is the only option if North Korea does not yield to the threat of deploying tactical nuclear weapons. The mutual denuclearization negotiations that this is said to lead to, is by no means certain to take place. As argued above, North Korean talk of denuclearization appears to be tactical in nature, and its willingness under any circumstances to give up its nuclear deterrent, is questionable. It is debatable whether a reintroduction of tactical nuclear weapons will be qualitatively different from the current situation. Seen from a North Korean perspective, the threat posed by the U.S. nuclear arsenal would arguably not be much greater with such a reintroduction, all the time the U.S. already has the ability to punish Pyongyang effectively with its strategic nuclear weapons. One could argue that the use of tactical
nuclear weapons will create a significantly smaller fallout, compared to the fallout pattern by strategic weapons discussed in chapter 4, and that this makes their use more plausible, but the threshold is still extremely high. If North Korea is unwilling to denuclearization under any situation, the potential gains from redeployment, i.e. mutual denuclearization negotiations, is overshadowed by the potential losses, i.e. increased risk of hostilities. Given the difficulty of predicting North Korea’s actions, and its willingness to run risks, it is arguably prudent to err on the side of caution. The worries of the South Korean analysts who favor this approach should not be discarded, but the viability of this approach should be carefully assessed. More importantly, as far as I can tell, the motivation behind the dual track approach is not to bolster U.S. extended deterrence, but to curtail the growing threat of North Korea, and to kick-start forceful denuclearization efforts. Consequently, the calls for the dual track approach are not generated by a weakening confidence or lack of credibility in the U.S. extended deterrence.

**4.3 A South Korean Nuclear Weapon**

Not only has the repeated North Korean provocations spurred a debate over redeployment of U.S. nuclear weapons, it has also spurred a debate over whether the ROK should develop its own nuclear weapon:

> North Korea’s second nuclear test has stimulated a [...] debate in South Korea over whether or not South Korea should pursue “nuclear sovereignty” by having its own independent capacity to pursue a nuclear weapons program [...].
> Snyder 2009:5

In the ASAN poll, 68.6% of South Koreans state they believe the ROK should have its own nuclear weapons (Space Daily 2011). This contradicts the findings of Christopher W. Hughes from 2007, where he states that “[...] Seoul has lived with the threat of devastation from North Korea’s conventional weapons for many decades and the city’s population may not see the risks of nuclear attack as a threat qualitatively different enough to warrant South Korea’s own nuclear weapons.” (2007:98). The ROK did have a nuclear weapons program in the 1970’s, but it ended with the assassination of
Park Chung Hee in 1979 (Kim 2012:75). South Korea does, however, have nuclear power reactors and conducts nuclear research. In 2004 it was revealed that scientists in South Korea had experimented with uranium enrichment, but did not enrich it to weapons grade (Kang et.al 2005:48). On the one hand, South Korea has the equipment and know-how to enrich uranium to weapons grade, and thus to develop a nuclear weapon. On the other hand, doing so will likely result in massive international pressure, and the United States will certainly not tolerate such a weapons program. There is also very little support among the South Korean political elites (Snyder 2011:152). It is therefore unlikely that the ROK will develop a nuclear weapon in today’s strategic environment.

4.4 Transfer of OPCON and the Tripwire

There is one final aspect of the extended nuclear deterrence credibility to consider: the state of the U.S. tripwire deployed along the DMZ. As mentioned, the United States had in 2010 approximately 28.500 USFK personnel stationed in Korea. These are the tripwire that is meant to secure U.S. involvement in a war with North Korea. As part of the U.S. “Strategic Flexibility” concept, there is a process to change the status of the USFK from “forward deployed” to “forward stationed”. Forward stationed troops, in contrast to forward deployed troops, can be deployed elsewhere to support other missions (Kim 2012:82). This means that another conflict in East Asia, a dispute in the Taiwan Strait for instance, could deplete the troops in Korea, effectively removing the tripwire. If there are very few U.S. forces in South Korea, their extraction in a crisis is easier, and the U.S. commitment can be drawn into question. Furthermore, by U.S.-ROK agreement, a transfer of wartime operational control (OPCON) was planned to take place in 2012. This move was instigated by ROK President Roh Moo-hyun who wanted to consolidate ROK command of a joint war effort, and was agreed to by the U.S. so as to allow for the change in USFK status (Kim 2010:1). However, the North Korean provocations leading up to this planned transfer lead to a postponement to 2015. As long as the OPCON remains in U.S. hands, it is doubtful that the U.S. can change its USFK status from “forward deployed” to “forward stationed”. The tripwire
appears to be secure at least until 2015, but should the transfer take place, the ROK and the U.S. will have to coordinate the composition of the USFK closely.

4.5 The Future of Nuclear Weapons in South Korea

There are several scenarios that can change the status quo and force a change in U.S. extended nuclear policy on the Korean Peninsula. Much depends on how North Korea will behave under the leadership of Kim Jong-un. According to Andrei Lankov (2012) there is little reason to believe that Kim Jong-un will substantially change the policies of North Korea. Regime change might very well come, but it will be long into the future.

Although the 2010 NPR states that the United States relies on its capacity to redeploy tactical nuclear weapons to East Asia, it seems unlikely that the current U.S. administration will consider such a move, unless there is reason to believe a war is imminent. On the other hand, a change in U.S. leadership can have just as much an impact on the U.S. extended nuclear deterrence policy in Korea. In fact, the House Armed Service Committee adopted an amendment to the national defense authorization bill for the fiscal year 2013 that supports “steps to deploy additional conventional forces of the United States and redeploy tactical nuclear weapons to the Western Pacific region” (Rogin 2012). The amendment was passed by 32 to 26 votes, with all but one Republican voting yes, and the support of two Democrats. The amendment was a response to the North Korean missile test of 2012 (ibid.). It is unclear what to make of such a move. One the one hand, it can be simple party politics, with Republicans wanting to mark a tougher stance on North Korea before the 2012 presidential elections. On the other hand, it might show that Republicans do favor redeployment. President Obama`s opponent in the 2012 presidential elections, Governor Mitt Romney, argued against the ratification of New START, and claims that abolition of nuclear weapons is a utopia (Cohen 2011). At this time, it is not clear what actions Romney proposes in regards to extended nuclear deterrence, and campaign rhetoric does not always translate to presidential policy. Nevertheless, it is not inconceivable that a future government could perceive the dynamics and requirements
of extended nuclear deterrence credibility differently from today’s administration.

It is difficult to assess what changes in the strategic environment that might lead to a revival of South Korean nuclear weapons research. The primary catalyst in this regard would likely be abandonment by the United States. It is possible that a future U.S. administration will further decrease the salience of nuclear weapons in American extended deterrence policy. If, in the future, the nuclear umbrella is retracted and South Korea is no longer covered by a U.S. extended nuclear deterrent, a nuclear weapons equipped South Korea could be the result.

5.0 Conclusion

The ties between the United States and South Korea are strong, and the military and political commitment by the U.S. to South Korean security has been substantial since the ceasefire that ended hostilities in the Korean War. The security guarantee extended to South Korea has since the late 1970’s involved a promise by the United States to use all measures, including nuclear weapons, in the defense of the ROK. This nuclear guarantee was supported by tactical nuclear weapons deployed on the peninsula up until George H.W. Bush withdrew them in 1991. Since then, South Korea has relied on U.S. extended nuclear deterrence based on the strategic nuclear triad.

The principle target of the U.S. extended nuclear deterrence guarantee to South Korea is North Korea. The authoritarian regime in Pyongyang has been an elusive negotiation partner in East Asia throughout the last decades, and negotiations took on a new dimension when North Korea admitted to having a nuclear weapons program in 2002. President Bush adopted a hardline stance, but despite a North Korean nuclear detonation in 2006, the six-party talks slowly gained momentum, and in 2007 provided some North Korean concessions. The negotiations came to an abrupt end in 2009 when North Korea conducted a second underground nuclear detonation, and later launched a missile masked as a satellite rocket. This marked a shift in the relationship between North Korea and the United States. Since the 2009 tests, North Korea has engaged in several provocative and hostile acts towards the South, culminating in the shelling of Yeonpyeong and the sinking of the Cheonan.
I have put forth six arguments. *First*, I have argued that the continued provocations by North Korea are not results of external factors, but rather stems from internal events. The transition from Kim Jong-il to his son Kim Jong-un must be said to be the principle event that triggered the provocations from 2009 to 2012. The provocations leading up to, and including, the nuclear test in 2009 is likely to be the result of Kim Jong-il’s attempt to solidify his position and lay the groundwork for the leadership transition to his son. The rationale behind the sinking of *Cheonan* is arguably the same. Similarly, the timing of the 2012 rocket/missile launch, right after the death of Kim Jong-il, is believed to be the result of Kim Jong-un’s attempt to legitimize his anointment to Supreme Leader. Consequently, the provocative actions by North Korea during President Obama’s tenure are not caused by lacking extended nuclear deterrence credibility.

*Second*, I have argued that the 2010 NPR and Obama’s Global Zero initiative was well received in South Korea, and that the government feels confident in the U.S. commitment to extended nuclear deterrence. There has been some opposition to the NPR, mostly from conservative analysts and politicians, but the objections appear to be of minor importance, and most analysts appear to believe that the changes in U.S. extended nuclear deterrence policy are not as substantial as what Obama’s rhetoric on nuclear issues might suggest. One indication of concern is worth mentioning: The South Korean government has repeatedly asked for, and received, confirmations of the U.S. extended nuclear deterrence, but it is hard to know whether the ROK is truly questioning the U.S. commitment, or whether it is pressing the U.S. to send signals of resolve to the North.

*Third*, I have argued that the call for redeployment of U.S. tactical nuclear weapons by some analysts and politicians is a result of North Korean actions, and not of a lack of U.S. extended nuclear deterrence credibility. The argument that North Korean hostilities will be curtailed with a reintroduction of tactical nuclear weapons is weak for two reasons: One, the hostile acts by the North are committed not because of a lack of credibility in the nuclear guarantee that redeployment is said to rectify, but, as argued above, because of internal events. Second, the hostile acts committed by the
North are not very different from the hostile acts it committed in the 1980’s, a time when U.S. tactical weapons were indeed deployed in South Korea.

*Fourth*, I have argued that the primary motive for the dual track approach seems *not* to be to deter North Korean hostility, but rather to kick-start *denuclearization*. Through nuclear parity, proponents believe the North will be more willing to dismantle its nuclear arsenal if there is a similar denuclearization process in the South. I have not attempted to argue for or against such a plan for denuclearization, however it must be pointed out that it is unlikely that the United States will redeploy tactical nuclear weapons in the current political and strategic environment, as such a move runs counter with Obama’s nuclear weapons policy. Similarly, the calls for a South Korean nuclear weapons of its own faces the same obstacles to success as redeployment of U.S. weapons, but its development is severely hampered by the international pressure such a move would face. There is no reason to believe that the United States would tolerate a South Korean nuclear weapons program, rather the U.S. reaction would likely be extremely negative. There is also very little support for a South Korean nuclear weapons program among the ROK political elite.

*Fifth*, I have argued that the USFK tripwire appears to be secure at least until 2015. The transfer of OPCON and the future of the USFK is a source for concern, but this move has been postponed several times, now to 2015. It is not certain that the transfer will go through as planned, and for now, the tripwire appears to be secure.

*Sixth*, I have argued that the U.S. extended nuclear deterrence guarantee to South Korea can change in the future, provided there is a change in the current political and strategic environment. The actions of North Korea under Kim Jong-un will naturally impact how the U.S. extended nuclear deterrence is crafted, but a change in political leadership in the U.S. is just as much a factor that can influence nuclear posture, and lead to an eventual buildup of nuclear weapons in South Korea.

To conclude, by putting forth these six arguments, I argue that there is little evidence of a weakened U.S. extended nuclear deterrence credibility on the Korean Peninsula.
Chapter 7

Conclusion

This thesis has been a qualitative case study analysis of whether Barack Obama’s nuclear policy, expressed in the 2010 Nuclear Posture Review, and New START, has weakened the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula. Specifically, the central research question was

Has President Barack Obama’s Global Zero initiative, as expressed in the 2010 NPR and New START, weakened the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula?

In answering that question, I have analyzed two variables: nuclear capabilities and nuclear policy. Thereafter, I examined, analyzed, and discussed the deterrence situation on the Korean Peninsula, asking whether the hostile actions of North Korea are internally or externally driven, and thus whether the hostilities since 2008 can be attributed to a lack of extended deterrence credibility. I thereafter examined the South Korean responses to the 2010 NPR to see how the pawn has reacted to the changed nuclear policy of the defender. The calls for redeployment of U.S. tactical nuclear weapons were then analyzed, and the causes for these calls were discussed. Lastly, I have analyzed the calls for a development of a South Korean nuclear weapon, and the likelihood of a nuclear weapon being introduced to South Korea, whether U.S. or Korean. This chapter first summarizes the findings of chapters 4, 5, and 6, before drawing the final conclusion. It ends with a few recommendations and reflections.
1.0 Chapter 4: Nuclear Capabilities-variable

Chapter 4 analyzed the strategic nuclear capabilities of the United States. By first outlining the three legs of the triad, and thereafter detailing the properties of each delivery vehicle and associated warhead, a detailed picture of the total capabilities of the U.S. strategic arsenal was given. This in turn was compared to the limits of 800 strategic launchers, 700 strategic ICBMs, SLBMs and bombers, and 1550 warheads in New START. The counting rules of New START actually allow the United States to retain more deployed warheads than the limit of 1550. Consequently, the reductions in deployed warheads will be substantially smaller than the limits suggest.

The chapter concludes that there is little evidence to suggest that New START limits the nuclear capabilities of the United States in any substantial way. The nuclear triad will be maintained, securing second-strike capability, and the number of strategic delivery vehicles and warheads far surpass any critical level. In post-New START, the United States will still have the ability to strike anywhere on earth with overwhelming power, without jeopardizing second-strike capability. One interesting note is worth mentioning: In regards to North Korea, the fallout pattern by an actual nuclear strike by the United States can potentially cause severe casualties in South Korea and/or China. Such a realization does have an impact on the credibility of the U.S. extended nuclear deterrence, but it is not caused by Obama’s nuclear policy, but by geography, and has therefore not been a central element of my discussion. The conclusion of the chapter is that New START has not weakened, and will not weaken, the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula.

1.1 Chapter 5: The Nuclear Policy-variable

The nuclear policy of the United States has changed and evolved to response to technological innovations and changes to the international security environment. The fall of the Soviet empire was the most important event that permitted substantial changes in U.S. nuclear policy, and permitted the first comprehensive nuclear disarmament. President Barack Obama quickly ordered a review of the U.S. nuclear policy after being elected. The resulting review, the 2010 Nuclear Posture Review,
serves as a roadmap to the implementation of Obama’s nuclear vision.

Chapter 5 argued that the 2010 NPR places heavy restrictions on an American comprehensive nuclear disarmament. The United States will maintain a strong nuclear deterrence so long as there are nuclear weapons in the world. There is little reason to believe that the other nuclear weapons states will relinquish their nuclear weapons before the United States. The 2010 NPR also reaffirms the pledge to protect allies even with nuclear weapons. Extended nuclear deterrence will still be maintained. And last, the chapter argues that the Negative Security Assurance provided in the 2010 NPR will not affect the deterrence situation on the Korean Peninsula, as North Korea is exempt from it. The conclusion is that the 2010 NPR has not weakened the U.S. extended nuclear deterrence on the Korean Peninsula.

1.2 Chapter 6: Deterrence on the Korean Peninsula

In chapter 6 I attempted to find evidence of weakened U.S. extended nuclear deterrence credibility on the Korean Peninsula. First, the actions of North Korea were analyzed, and the discussion attempted to explain what drives North Korea to engage in repeated hostile actions. I conclude that the actions of North Korea are not driven by external factors, such as a weakened U.S. extended nuclear deterrence credibility, but rather internal factors, such as regime survivability and power consolidation. The chapter then turned to analyzing South Korean responses to the 2010 NPR, and the calls for redeployment of U.S. tactical nuclear weapons. All in all, the 2010 NPR was well received by the ROK government. Again, the criticism that surfaced appears to be motivated more by the actions of North Korea than by lack of confidence of the U.S. nuclear guarantee. Given that these North Korean actions are internally motivated, the South Korean calls for redeployment are consequently not caused by lack of extended nuclear deterrence credibility. Lastly, chapter 6 argued that there is little reason to believe that the United States will redeploy tactical nuclear weapons to South Korea in the future, and unlikely that the South Koreans will develop a nuclear weapon of their own.

The chapter concludes that there is no evidence of a weakened U.S. extended
nuclear deterrence credibility on the Korean Peninsula.

2.0 Final Conclusion

The three chapters give three conclusions:

2. There is no evidence to suggest that the nuclear capabilities of the United States will be weakened by President Obama’s nuclear policy or New START.
3. The nuclear policies expressed in the 2010 NPR have not weakened the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula.
4. There is no reason to conclude that the North Korean hostile actions since 2008, nor that the South Korean calls for redeployment of U.S. tactical nuclear weapons, are caused by a weakened U.S. extended nuclear deterrence credibility. Rather, they appear to be caused by North Korean internal factors.

Together, the conclusions of chapter 4, 5, and 6 paint a clear picture: Barack Obama’s nuclear policy, expressed in the 2010 NPR and New START, has not weakened the credibility of the U.S. extended nuclear deterrence on the Korean Peninsula.

3.0 Recommendations and Reflections

A major obstacle to overcome in writing this thesis was the lack of theoretical rigorousness and clarity regarding credibility in deterrence theory literature. I was unaware of how little effort had been directed at defining credibility, and at breaking the concept down into measurable subparts. Although Thomas Schelling, among others, devotes time to explaining the difficulties of credibility, and suggests measures that might enhance it, little effort is taken to explain what credibility is. I find it puzzling that credibility is often presupposed in deterrence literature, that credibility is something a deterring state either has, or has not. Credibility is arguably the cornerstone of deterrence, and should have been studied in much more detail than it apparently has. I strongly suggest further research on the theoretical underpinnings of deterrence credibility in general, and extended deterrence credibility in particular.
At the beginning of this research project, I expected to find evidence of a weakened U.S. extended nuclear deterrence credibility. Based on the deterrence theory literature, I believed that Obama’s “softer” policy would resonate badly with both allies and adversaries in South East Asia, and that allies would express more concern over U.S. extended deterrence. I also expected that New START would provide substantial reductions in deployed strategic launchers and warheads. In hindsight, this belief might in fact have aided me to overcome a possible confirmation bias, as I searched thoroughly for such confirmatory evidence, only to find very little, if anything at all. I am thus confident in my conclusions.

Last, I would like to reiterate that this thesis should not be read as an attempt to contribute to a debate over whether comprehensive nuclear disarmament is safe or dangerous, whether nuclear deterrence should be maintained or discarded, or whether President Obama’s nuclear policy is “good” or “bad” for America, its allies or adversaries. I maintain that, as long as nuclear guarantees are extended, strong deterrence credibility is vital. If states do rely on these nuclear guarantees for their security, and nuclear proliferation, for instance, is halted because of it, utmost care should be devoted to crafting a credible extended deterrence.
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