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YILDIZ TECHNICAL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
POLITICAL SCIENCE AND INTERNATIONAL RELATIONS DEPARTMENT
MASTER OF ARTS PROGRAM

MASTER THESIS

NORTH KOREAN NUCLEAR CRISIS: EVALUATION FROM THEORETICAL PERSPECTIVE

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ABSTRACT

NORTH KOREAN NUCLEAR CRISIS: EVALUATION FROM THEORETICAL PERSPECTIVE

Kahraman Süvari

April, 2016

The international community has viewed North Korea's nuclear program as a major security issue since the early 1990s. The North's complete withdrawal from the Nuclear Nonproliferation Treaty (NPT) in 2003 and carrying out of subsequent nuclear tests have further increased international concerns over the nuclear issue. The main objective of this thesis is to understand and analyze the North Korean nuclear crisis from a theoretical perspective. As North Korea's nuclear ambitions have come to represent the main cause of the crisis, this research study focuses on the reasoning behind the North's decision to develop nuclear weapons. Neorealist theory which explains the behaviors of states with structural factors is used to understand North Korea's nuclear weaponization decision. This thesis argues that external factors that are perceived as threats to the national security of North Korea are dominant motives for the North to develop nuclear weapons. Apart from the introduction and conclusion, this thesis consists of three main chapters. In the first chapter, in order to provide theoretical framework, the basic assumptions of neorealism and its understanding of nuclear weapons are explained. In the second chapter, the historical development of North Korea's nuclear program is examined. Lastly, in the final chapter, the main factors that motivate the North to build its own nuclear weapons are analyzed through the lens of neorealist theory. In this thesis, it is concluded that North Korea, facing external threats, has used the nuclear weapon option to ensure its continued existence as an actor in the international system.

Keywords **:** Nuclear Weapons, North Korea, Nuclear Proliferation, Neorealism

ÖZ

KUZEY KORE NÜKLEER KRİZİ: TEORİK BİR DEĞERLENDİRME

Kahraman Süvari

Nisan, 2016

1990'ların başından itibaren Kuzey Kore'nin nükleer programı uluslararası toplum tarafından önemli bir güvenlik sorunu olarak görülmektedir. 2003 yılında NPT anlaşmasından tamamen çekilmesi ve daha sonra gerçekleştirdiği nükleer denemeler, Kuzey Kore'nin nükleer meselesi ile ilgili uluslararası endişeleri daha da artırmaktadır. Bu tezin amacı Kuzey Kore nükleer krizini anlamak ve teorik açıdan incelemektir. Söz konusu nükleer krizin temel kaynağı Kuzey Kore'nin nükleer amaçları olduğundan, bu çalışma Kuzey Kore'yi nükleer silah geliştirmeye iten ana sebepler üzerinde yoğunlaşmıştır. Kuzey Kore'nin nükleer silahlanma kararını anlamak için devletlerin davranışlarını yapısal faktörler ile açıklayan neorealist teori kullanılmıştır. Bu tez, Kuzey Kore'yi nükleer silah geliştirmeye iten ana etmenlerin tehdit olarak algıladığı dış faktörler olduğunu öne sürmektedir. Giriş ve sonuç bölümlerinden ayrı olarak bu tez üç bölümden oluşmaktadır. Birinci bölümde, teorik bir çerçeve oluşturmak için, neorealizmin temel varsayımları ve nükleer silahlara olan yaklaşımı açıklanmaktadır. İkinci bölümde, Kuzey Kore'nin nükleer programının tarihsel gelişimi incelenmektedir. Son olarak, üçüncü bölümde ise Kuzey Kore'yi nükleer silah geliştirmeye iten temel faktörler neorealizm teorisi ile analiz edilmektedir. Bu tezde, dış tehditler ile karşı karşıya olan Kuzey Kore'nin uluslararası sistemde bir aktör olarak varlığını sürdürebilmesi için nükleer silah seçeneğini kullandığı sonucuna ulaşılmıştır.

Anahtar Kelimeler : Nükleer silahlar, Kuzey Kore, Nükleer Silahların Yayılması, Neorealizm

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Istanbul, April 2016 Kahraman SÜVARİ

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LIST OF ABBREVIATIONS AND ACRONYMS

ADM	:Atomic Demolition Mines
ANSP	:National Intelligence Agency of South Korea
CFC	:Combined Forces Command
CIA	:Central Intelligence Agency
DMZ	:Demilitarized Zone
DPRK	:Democratic People's Republic of Korea (North Korea)
HEU	:Highly Enriched Uranium
HFO	:Heavy Fuel Oil
IAEA	:International Atomic Energy Agency
ICBM	:Intercontinental Ballistic Missile
KCNA	:Korean Central News Agency
KEDO	:Korean Peninsula Energy Development Organization
KGB	:Soviet Union's Intelligence Agency
KPA	:Korean People's Army
Kt.	:Kiloton
KWP	:Korean Working Party
LWR	:Light Water Reactor
MAD	:Mutual Assured Destruction
Mwe	:Megawatts of Electricity
Mwt	:Megawatts of Thermal Energy
NPR	:Nuclear Posture Review
NPT	:Nuclear Non-Proliferation Treaty
NSF	:National Safety Forces
OPCON	:Operational Control
SDF	:Self-Defense Forces
SLBM	:Submarine-Launched Ballistic Missile
UINR	:United Institute for Nuclear Research
UN	:United Nations
UNSC	:United Nations Security Council
US	:United States
WMD	:Weapons of Mass Destruction

1. INTRODUCTION

One of the biggest turning points in history was the use of the atomic bomb in the Second World War. All humanity was for the first time faced with the revolutionary nature of nuclear power when the United States dropped atomic bombs on the Japanese cities of Hiroshima and Nagasaki in 1945. What makes these weapons so unique is that they have an incredible destructive power. With the end of World War Two, the United States emerged as the sole nuclear power in the world. The American monopoly on atomic weaponry broke down when Soviet Union conducted its first atomic bomb test in 1949. Thus, the nuclear arms race began between the two super powers. Over time, other states appeared as nuclear powers in the world. Since the mid-1960s, many in the international community began to believe that nuclear weapons proliferation posed one of the most serious threats to international peace and security. Thus, in order to prevent the spread of nuclear weapons throughout the world, the Non-Proliferation Treaty (NPT) which became the cornerstone of the non-proliferation regime was introduced in 1968. Since then, only five countries (the United States, Soviet Union (Russian Federation), France, the UK, and China) which are at the same time the five permanent members of the United Nations Security Council are legally recognized as nuclear weapon states. With the treaty, these countries have earned the "nuclear weapon state" status. Other states which have signed the NPT are recognized as having non-nuclear weapon status. These states committed not to develop or acquire nuclear weapons. India, Israel and Pakistan which also have nuclear capabilities never signed the NPT. Under the NPT, states also have the right to withdraw from the treaty if they need. The point is that since the adoption of the treaty in 1968, no country has used the right to pullout from the treaty except North Korea (officially known as the Democratic People's Republic of Korea).

North Korea has thus become the only country to withdraw from the NPT and develop nuclear weapons. In fact, North Korea has had a nuclear program for several decades. However, the North's nuclear program did not draw the attention of the

international community significantly until it first announced withdrawal from the NPT in 1993. Since then, the North Korean nuclear issue has become an "international nuclear crisis." Thus, the nuclear program of North Korea could be viewed as a proliferation case that threatens global security and has immediately faced heavy international pressure in response. Despite the North suspending its decision, thanks to the efforts of the United States, it has nevertheless continued with its nuclear program. In 2003, North Korea declared its withdrawal from the NPT. Two years later, the North announced possession of nuclear weapons. North Korea also performed three underground nuclear tests in 2006, 2009 and 2013. Thus, the DPRK has become the world's de facto ninth nuclear power.

The aim of this thesis is to understand and analyze the North Korean nuclear crisis from a theoretical perspective. As North Korea's nuclear ambitions have represented the main source of this crisis, the reasoning behind the North's decision to acquire nuclear weapons is the primary interest of this research study. This thesis argues that external factors that are perceived as threats to North Korea's national security represent the main motives for the North to develop nuclear weapons. Neorealism is used as an applicable theory to analyze North Korea's decision in regard to nuclear weapon. It is also important to explore the historical trajectory of the North's efforts to acquire nuclear weapons. Within this context, this thesis has two main research questions: How did North Korea develop nuclear weapons? What are the main motivations of North Korea to become a nuclear weapon state?

There is much work in the field of North Korean studies that explain North Korea's nuclear ambitions relating to its threat perceptions and external security concerns.[1] However, in this thesis, while North Korea's nuclear weapons decision is considered as a way to protect itself against external threats, it is also evaluated theoretically and compared with other alternative strategies that are used by states to ensure their security. Thus, through the use of secondary sources, this thesis aims to understand

[1] For example; Bruce Cumings, *North Korea: Another Country* (New York: New Press, The, 2004); Michael J. Mazarr, *North Korea and the Bomb: A Case Study in Nonproliferation* (New York: Palgrave Macmillan, 1997); Andrew O'Neil, *Asia, the US and Extended Nuclear Deterrence: Atomic Umbrellas in the Twenty-First Century*, 1 edition (London ; New York: Routledge, 2013); David C. Kang, "Rethinking North Korea" *Asian Survey* 35, no. 3 (1995): 253–67; Andrei Lankov, *The Real North Korea: Life and Politics in the Failed Stalinist Utopia*, Upd Rev edition (New York, NY: Oxford University Press, 2014); Youngwon Cho, "Method to the Madness of Chairman Kim: The Instrumental Rationality of North Korea's Pursuit of Nuclear Weapons," *International Journal* 69, no. 1 (2014):5-25.

the North Korean nuclear weaponization decision by providing a theoretical examination of the North Korean nuclear program and alternative options, evaluated in accordance to neorealist theory.

Research on the DPRK's nuclear issue is important, viewed by the international community as a challenge to the global non-proliferation nuclear regime, it presents one of the most important security concerns in world politics. The geopolitical position of North Korea also makes it worth studying its nuclear program. The DPRK, the most isolated and militarized nation on Earth, is located on the Korean Peninsula in the Northeast Asian region. Northeast Asia has an important position in the global economy and it is also one of the world's highly nuclearized regions. It includes four nuclear weapon states (China, North Korea, Russia and the USA), the most advanced threshold nuclear state (Japan), and also one of the world's major nuclear technology exporters (South Korea). Under these circumstances, any misunderstanding or miscalculation between actors may cause unwelcome consequences which would be catastrophic for the region.

The structure of this thesis will be as follows:

In the next chapter of the research study, in order to provide a theoretical framework for the causes of nuclear proliferation and the role of nuclear weapons in the international system, neorealism and its approach to nuclear proliferation will be discussed. In the first section of the chapter, neorealist theory as a school of thought in the discipline of international relations will be described and examined. What are the basic assumptions of neorealism? Neorealist theory, commonly known as structural realism, provides a general theoretical approach to states' behavior and the structure of the international system. The main tenet of neorealist theory is that the international structure is anarchical and each state seeks power to protect itself in order to survive in the international system. In the second section of this chapter, the proliferation of nuclear weapons will be analyzed from a neorealist perspective. First of all, the importance of nuclear weapons will be explained. Nuclear weapons are used as the ultimate deterrent force by states that possess them. Although nuclear weapons are categorized as weapons of mass destruction (WMDs), they are in a unique category because of their incredible destructive force. Then, the question of why states decide to acquire nuclear weapons will be addressed. For neorealist thought, the nature of the international system, uncertainty surrounding the intentions

of others and external threat perceptions are the most influential factors in the nuclear weapons decision of a state. Lastly, the relationship between the proliferation of nuclear weapons and international stability will be discussed. Three different approaches to this subject will be evaluated from three theorists. For Kenneth Waltz, the spread of nuclear weapons among nations brings stability because their deterrence capability prevents the use of force by states. However, according to Scott Sagan, the proliferation of nuclear weapons increases the risk of nuclear warfare. John Mearsheimer agrees that nuclear weapons reduce the possibility of war. However, he proposes controlled nuclear proliferation in the international system.

The third chapter will focus on the historical background of North Korea's nuclear weapon program. As the exact date of North Korean Leadership's decision to initiate nuclear weapon program is unknown[2], the development of the North Korean nuclear program will be examined from its early nuclear activities to the third nuclear test which was conducted in 2013. This chapter will have four sections. Firstly, how North Korea acquired the technical know-how and capability, given its limited resources to produce weapons grade plutonium, will be explored. North Korea's interest in nuclear technology has a long history. However, international concern about North Korea's nuclear program only arose after the first nuclear research reactor was built by the North in the late 1980s. This facility made the production of fissile material for a bomb possible for North Korea. In the next two sections, the first and second nuclear crisis will be explored. How did these nuclear crises erupt and develop? North Korea's nuclear issue turned to a "crisis" when the North announced that it had intentions to withdraw from the NPT in 1993. The first North Korean nuclear crisis is important because in this critical moment North Korea and the United States came close to a military confrontation. The concern during that time was that North Korea might already have had nuclear weapons. This meant that any further escalation between these two states might bring a nuclear war to the world. The Crisis ended with the historical agreement named "The Agreed Framework" signed between the United States and North Korea in 1994. With this agreement, the North agreed to suspend its nuclear activities and continue to remain in the NPT. In the third section, the second nuclear crisis will be discussed. At the

[2] Jonathan D. Pollack, *No Exit: North Korea, Nuclear Weapons, and International Security*, 1 edition (London : New York: Routledge, 2011), 81.

beginning of the 2000s, the agreement collapsed and North Korea withdrew from the NPT. Although the international community has increased its pressure on the North to comply with the international non-proliferation regime, North Korea has continued to develop its nuclear program. In 2005, the North declared that it had nuclear weapons. In 2009, North Korea admitted that it had a highly enriched uranium program. In the last section of the chapter, North Korea's nuclear tests and ballistic missile program will be explained. Nuclear testing has demonstrated that North Korea has a workable nuclear explosive device. The DPRK's ballistic missile program is also important because ballistic missiles are delivery systems that carry the warheads to possible targets.

In Chapter Four, the main factors behind North Korea's nuclear decision will be examined from the perspective of neorealist theory. Since its establishment, North Korea may have had different strategic goals in the region. But, the DPRK's foremost aim has always been to survive. Within this context, the North's threat perceptions make it feel insecure in the region and therefore, have motivated it to develop nuclear weapons. It might be also true that developments in the nuclear field have strengthened the position of the regime in the country. However, in this thesis, North Korea will be examined with the "billiard ball" conceptualization of neorealism which means that the domestic structure of the country will not be considered. Under this framework, in the first section, the major external security concerns of North Korea will be discussed. The United States' hostile policy toward the North which features especially since the Korean War has been the main factor that pushed North Korea into developing nuclear weapons. The extended deterrence strategy pursued by the United States in the region also reduced the North's security. South Korea and Japan, as the main allies of the United States, individually represent the main threatening figures for North Korea. Moreover, the North's relationship with China is highly controversial especially after the end of the Cold War. How did these issues motivate the North to develop its own nuclear weapon program? In this section, the role of the North's nuclear capabilities in countering these threats will also be examined. In the second section, the question of North Korea's decision to obtain nuclear weapons being considered a reasonable choice will be discussed. To cope with external threats, states can implement different strategies, for example, balancing or bandwagoning. However, for the North, these strategies do not provide

full protection to for its national security. Thus, a nuclear option became a necessary choice for North Korea in order to secure its existence in the international system. Lastly, in the same chapter, the denuclearization of two countries (Ukraine and Libya) will be examined. These two non-proliferation cases strengthen North Korea's justification for the nuclear weapon decision.

In the final chapter, the main findings will be summarized and a conclusion will be provided with a general assessment of the research questions.

2. NEOREALISM AND NUCLEAR WEAPONS

2.1 Introduction

This chapter presents a theoretical and conceptual framework for the research in this thesis. It sets out to examine neorealism as a theory of international relations and how neorealist theory approaches nuclear weapons in international politics. Neorealism is the appropriate theory in order to examine the main factors and motives that drive North Korea to develop nuclear weapons because the key concepts and basic tenets of neorealist theory such as power, anarchy, self-help and balance of power will help us to understand and analyze the question of why North Korea decided to acquire nuclear weapons when the majority of states in the world do not seek to obtain this ultimate weapon. Moreover, in the realist tradition, neorealism has been chosen specifically as a guiding theory. This is because the decisive influence on North Koreas nuclear weapons development stems from systematic factors related to the structure of international system rather than originating in its authoritarian administrative structure.

This chapter will be divided into two sections. The first section will focus on the basic assumptions of neorealism as a theoretical base. The main concepts of the theory will be explored in this section. The role of nuclear weapons in international politics through a neorealist lens will be disscussed in the second section of this chapter.

2.2 Neorealism as a Theory of International Relations

Neorealism also termed structural realism, introduced by Kenneth N. Waltz in his classic book “Theory of International Relations” (1979), counts among the most well-established theories of international relations. It was developed as a systematic reformulation of classical realism. Knud Erik Jorgensen states that neorealism

represents a "significant rupture within the realist tradition."[3] But what did this new realism bring to the old style realism? Or should neorealism, which emerged and was developed after the second half of the Cold War, be treated as a continuation of classical realism? Although there are similarities between neorealism and classical realism, neorealism is different from classical realism in many ways. When we look at the core differences between the two theories, firstly, Waltz argues that neorealism defines international politics as an international system which shapes and structures the behaviors of actors (states). On the other hand, for classical realists such as Morgenthau, the interaction of states determines international outcomes. Therefore, while classical realism has a primarily inductive approach, neorealism has a deductive approach.[4] Another main difference between neorealism and classical realism is their understanding of power. For classical realists, states have always had a desire to obtain more power, a drive originating in human nature. In other words, "power is sought as an end in itself in international politics".[5] However, for neorealists, power is a means to an end. The international political structure puts security pressure on states. Under this pressure, the main concern of states is to survive. Therefore, states seek power as the best means to maintain their security.[6]

So, with these new features, why did Waltz need to develop neorealism? Waltz says that he aimed to do the followings[7]:

1. Develop a more rigorous theory of international politics than earlier realists had done.
2. Show how one can distinguish unit-level from structural elements and then make connections between them.
3. Demonstrate the inadequacy of the prevalent inside-out pattern of thinking that has dominated the study of international politics.
4. Show how state behavior differs, and how expected outcomes vary, as systems change.
5. Suggest some ways in which the theory can be tested and provide some examples of its practical application, largely to economic and military problems.

Neorealism as a systematic approach to international relations explains varying state behavior and state interactions by invoking structural factors.[8] In the following parts

[3] Knud Erik Jørgensen, *International Relations Theory: A New Introduction*, First Edition edition (Basingstoke ; New York: Palgrave Macmillan, 2010), 84.
[4] Kenneth N. Waltz, "Realist Thought and Neorealist Theory" *Journal of International Affairs*, v. 44, no. 1 (1990): 29, 33.
[5] Brian C. Schmidt, "Realist Conceptions of Power," in *Power in World Politics*, ed. Felix Berenskoetter and Michael J. Williams, 1 edition (New York: Routledge, 2007), 48.
[6] John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W. W. Norton & Company, 2003), 19.
[7] Kenneth N. Waltz, "Reflections on Theory of International Politics : A Response to My Critics" in *Neorealism and Its Critics*, Robert O. Keohane (New York: Columbia University Press, 1986), 322.

of this section, neorealist theory, its major concepts and basic assumptions will be examined.

2.2.1 Power and State

Power as a concept in international relations is mostly associated with the realist school of thought.[9] For neorealists as classical realist scholars argue, "Power is the currency of international politics"[10]. More power means that one has, "the more to say about which games will be played and how".[11] What is power? What are the means of power? And how much power do states want? For Waltz, "a state's power can thus be understood as a combination of its capacity to influence others to behave as it wants them to and, conversely, to resist the unwelcome influence of others".[12] Mearsheimer defines power in two different ways. The first definition is that "power represents nothing more than specific assets or material resources that are available to a state." The second meaning of power as he defines is that "power is all about control or influences over other states" or "the ability of one state to force another to do something".[13] From these definitions, it can be argued that in order to analyze power, we need to consider at least two actors. Therefore neorealists focus on relative power by comparing the capabilities of the states. According to them, the relative distribution of capabilities is the key independent variable to describe outcomes such as wars and alliances in international system. Waltz argues that the size of population and territory, resource endowment, economic capability, military strength, political stability and competence; all these aspects of power have effects on the position of states.[14] States have to use these combined capabilities to pursue their own goals. However, Mearsheimer divides power in two types. One form of power is "latent power" which means socio-economic ingredients such as state's wealth and the size of population. The other type of power is "military power" which consists of the size and strength of a state's army and its supporting air and naval

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[8] Jørgensen, *International Relations Theory*, 85.
[9] Schmidt, "Realist Conceptions of Power" 43.
[10] Mearsheimer, "Structural Realism" 78.
[11] Kenneth N. Waltz, *Theory of International Politics* (New York: McGraw-Hill, 1979), 194.
[12] George Perkovich, "Is India a Major Power?" *The Washington Quarterly* 27, no. 1 (2004 2003): 129.
[13] Mearsheimer, *The Tragedy of Great Power Politics*, 57.
[14] Waltz, *Theory of International Politics*, 131.

forces.[15] Alongside other means of power, realists give most importance to military strength as a material means of power for the survival of states in world politics. States always fear that there is a possibility of being attacked by an aggressor in the system. Military forces have vital importance for states in order to protect themselves within the anarchical international order. For instance, due to its defensive characteristic, nuclear weapons play a very important role in the defense of a country. Mearsheimer claims that "factors of military power have been most important in shaping past events, and will remain central in the future".[16] According to him, in world politics, the most important effective power for states is their military strength in relation to other states. He gives Japan as an example. Although Japan has a strong economy in the world, it cannot be treated as a great power because it has a very weak military capability and its security is dependent on The United States of America.[17]

State power is also emphasized by neorealist scholars because of the unique position of the "state" in the international political system. As mentioned before, Waltz sees the international structure as formed through the coexistence of states (like units). Conversely, the interactions and behavior of states are affected by the international structure.[18] In this context, with regard to neorealism, unitary states are the main actors of the international system. However, Waltz admits that there are also other actors apart from states in the international system, stating that "structures are defined not by all of actors but by the major ones".[19] For instance, there are international institutions which are formed by states in world politics. For neorealists, these institutions are not independent actors. They are only tools that serve the interests of great powers. Mearsheimer claims that "the most powerful states in the system create and shape institutions so that they can maintain their share of world power"[20]. That is to say, the other actors do not have any great effect on international political structure.

[15] Mearsheimer, *The Tragedy of Great Power Politics*, 56.
[16] John J. Mearsheimer, "Back to the Future: Instability in Europe after the Cold War" *International Security* 15, no. 1 (1990): 7.
[17] Mearsheimer, *The Tragedy of Great Power Politics*, 55–56.
[18] Waltz, *Theory of International Politics*, 91,100.
[19] Ibid., 93.
[20] John J. Mearsheimer, "The False Promise of International Institutions" *International Security* 19, no. 3 (1994): 13.

Additionally, neorealists claim that states are unitary actors. In the international system, there is no differentiation between states by the functions they perform. They are similarly "like units". There is an "abstraction from every attribute of state except their capabilities".[21] In other words, states are similar units in the international system, but they have different capabilities. If states in world politics have such attributes as different regime types, different populations or different domestic politics, how do they then become units that they are similar? For Mearsheimer, as international structure has the greatest impact on state behavior, neorealists pay no attention to the domestic aspects of states, such as cultural differences or who the decision makers are. Neorealists assume that states are "black boxes"[22] and are similar to all extents, except in their capabilities. According to Waltz, besides states in the international system being like units, they are also similar in their actions although each state has its own domestic structure.[23] In order to illustrate this statement, he explores the behaviors of the two super powers of the Cold War, the United States and Soviet Russia. He argues that although these two powers had completely different regime types, different economic system and so on, their behavior as units in the international system has many similarities. For example, according to Waltz, during the cold war, the United States and the Soviet Union, both followed interventionist policies and spent most their efforts fighting peripheral wars.[24]

The other main assumption of the neorealist school of thought is that states are rational actors in the international system. For Waltz, rationality is qualified by the statement that, "some do better than others- whether through intelligence, skill, hard work or dumb luck".[25] According to Mearsheimer, the argument that states are rational actors means that "they are aware of their external environment" and "they think intelligently about how to maximize their prospects for survival in short term as

[21] Waltz, *Theory of International Politics*, 93,97.
[22] John J. Mearsheimer, "Structural Realism" in *International Relations Theories*, ed. Tim Dunne, Milja Kurki, and Steve Smith, 3 edition (Oxford: Oxford University Press, 2013), 72. Neorealists also use to explain the similarity of states with billiard ball illustration. In this analogy, billiard balls represent sovereign states.
[23] Waltz, *Theory of International Politics*, 96.
[24] Kenneth N. Waltz, "The Emerging Structure of International Politics" *International Security* 18, no. 2 (1993): 47.
[25] Waltz, *Theory of International Politics*, 77.

well as long term."[26] Furthermore, although Waltz does not use the assumption of rationality explicitly[27], Mearsheimer claims that, "states are rational actors in international system".[28]

Since states are the most important units of international politics, the nature of the international system influences and constrains their attitudes.

2.2.2 Anarchy as an Ordering Principle

For neorealist theory, the ordering principle in international structure is anarchy. In contrast to the hierarchical order of domestic politics, the nature of international politics is anarchy. But what does "anarchy" means in this terminology? The word "anarchy" meaning absence of rule, being without a government, stems from the Greek "arche" (rule, empire). In general understanding, anarchy refers to chaos or disorder.[29] However, for neorealists, the anarchic international system does not mean that there is chaos in the system, but it means that there is no any authority which sets the rules of the game, over sovereign states. According to neorealist thought, an anarchic international system is the main force that affects the motives and behaviors of states.[30] For Waltz, in the international political system, that there is no authority means that there is no "relations of super- and subordination". So, unlike in domestic politics, while units have no right to command, they also do not need to obey any kind of rules.[31] In other words, for neorealists, the international system is the condition of anarchy in which there is no centralized sovereign authority that enforces the rule of law.[32]

If there is no disorder in the international political system, that means there is an order in the system. But how can there be order under anarchy? Waltz explains this

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[26] John J. Mearsheimer, "Reckless States and Realism" *International Relations* 23, no. 2 (2009): 244.
[27] Peer Schouten, "Theory Talks: Theory Talk #40 - Kenneth Waltz" *Theory Talks*, 2011, accessed February 1, 2015, http://www.theory-talks.org/2011/06/theory-talk-40.html; Mearsheimer, "Reckless States and Realism" 242.
[28] Mearsheimer, "The False Promise of International Institutions" 10; Mearsheimer, "Structural Realism," 74.
[29] Jack Donnelly, *Realism and International Relations* (Cambridge England ; New York: Cambridge University Press, 2000), 81.
[30] Joseph M. Grieco, "Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism" *International Organization* 42, no. 3 (1988): 488.
[31] Waltz, *Theory of International Politics*, 88.
[32] Jill Steans et al., *An Introduction to International Relations Theory: Perspectives and Themes*, 3 edition (Harlow: Routledge, 2010), 54.

situation with microeconomic theory as developed by Adam Smith. Waltz argues that microeconomic theory explains how an order is automatically formed through the self-interested actions and interactions of units. It begins with the economists' assumption concerning units. Economists describe acting units as a "single minded profit maximizer." The second concept that economists assume is the market. The market consists of the activities of units. In the market, each unit, such as a firm or individual wants to make profit. The units are selfish and all want benefit for themselves. "The market rewards some with high profits and assigns others to bankruptcy."[33] By using this analogy, Waltz claims that "international-political systems, like economic markets, are individualist in origin, spontaneously generated, and unintended".[34]

However, the order that exist in international system does not mean that the actors are secure. In an anarchic world system where there is no high authority above states, there exists a very dangerous environment. Waltz argues that "among states, the state of nature is a state of war."[35] Mearsheimer compares the international political system to a "brutal arena where states look for opportunities to take advantage of each other… There is an always possibility of war in background".[36] Whereas in domestic politics, being a hierarchical order, governments represent the only authority and power able to punish a criminal legally, in the absence of supreme authority over states means there is no punishment mechanism for aggressor states. Mearsheimer terms this situation as a "911 problem – the absence of a central authority to which a threatened state can turn for help". When a threatened state dials up 911, nobody comes to rescue the dialer.[37] For example, it is imagined that a man is attacked by a thief on the street. He calls the police, hoping either that they catch the thief or at least they bring back the things that were stolen. If the police cannot succeed in doing at least one of two, then the man begins to bear arms in order to protect himself from would-be criminals.[38] Thus, every state in the international system has to protect itself relying on its own capabilities and the arrangements it has made against threats. This system is called a "self-help system" by neorealists.

[33]Waltz, Theory of International Politics,90.
[34] Ibid., 89–91.
[35] Ibid., 102.
[36] Mearsheimer, "The False Promise of International Institutions" 1994, 10.
[37] Mearsheimer, *The Tragedy of Great Power Politics*, 32–33.
[38] Kenneth N. Waltz, *Man, the State, and War* (New York: Columbia University Press, 1959), 194.

At this point, we confront "the security dilemma", one of the key concepts in international relations discipline. The Security Dilemma was introduced by John H. Herz in 1950. He describes the security dillema as follows :

> Wherever such anarchic society has existed. …. Groups or individuals living in such a constellation must be, and usually are, concerned about their security from being attacked, subjected, dominated, or annihilated by other groups and individuals. Striving to attain security from such attack, they are driven to acquire more and more power in order to escape the impact of the power of others. This, in turn, renders the others more insecure and compels them to prepare for the worst. Since none can ever feel entirely secure in such a world of competing units, power competition ensues, and the vicious circle of security and power accumulation is on .[39]

For Jervis, the security dilemma occurs when "a state tries to increase its security and decreases the security of other".[40] The main factors behind the emergence of the security dilemma are the anarchical world system, the fear that exists between states about each other and the material capability that states possess. The logic is simple: under anarchical world order, states fear one another because they don't know each other's intentions. This situation can be described as "the problem of other minds"[41]. Therefore they decide to increase their security. But this act automatically decreases the security of other states. This situation generally causes two possible outcomes. The first is known as the "spiral like situation" in which there would be "deterioration in the relations of states" or it causes the appearance of an arms race between the two states without breaking out into conflict. The second possible outcome that results from the security dilemma is the occurrence of war, in the worst case scenario.[42]

According to Jervis, the high cost of conflict and potential gains from cooperation can mitigate the impact of security dilemma. For him, another way to abolish the security dilemma is offense defense differentiation. For instance, if a state has an advantage in defense, its investments in defensive weapons will not threaten neighboring state. However, Jervis also argues that to make such a differentiation is problematic because weapons can be used for both offensive and defensive purposes. The immobile character of weapons may help offense defense differentiation in a

[39] John H. Herz, "Idealist Internationalism and the Security Dilemma" *World Politics* 2, no. 02 (January 1950): 157.
[40] Robert Jervis, "Cooperation Under the Security Dilemma" *World Politics* 30, no. 2 (January 1978): 169.
[41] Martin Hollis and Steve Smith, *Explaining and Understanding International Relations* (Oxford: Clarendon Press, 1990), 171–172.
[42] Shiping Tang, "The Security Dilemma: A Conceptual Analysis," *Security Studies* 18, no. 3 (2009): 597.

state's military capabilities. As an example, nuclear land mines are used for defensive purposes exclusively. For Jervis, when considering strategic nuclear forces, for example Intercontinental Ballistic Missiles (ICBM's), these can be used for both defensive and offensive purposes. These missiles can be used to attack to an enemy's cities or they can be used to eliminate the enemy's strategic forces.[43] However, Mearsheimer believes that under anarchy, it is almost impossible to mitigate security dilemma.[44] For him, the security dilemma ends only when one side is eliminated from the system or one side attains the status of world hegemon[45]. Waltz argues that unfortunately, states cannot escape from the security dilemma because the security dilemma arises not from through states' intentions, but from their situation. So, he claims that "a dilemma cannot be solved."[46]

The anarchic world order creates the self-help system in which states have to defend their own interests. Waltz also argues that "self-help is necessarily the principle of action in an anarchic order".[47] In addition to that, in the self-help system, states as like units behave selfishly and according to their own interest, but not for the interests of the international community.[48]

This self-centric behavior of states also creates problems in their cooperation. How is it possible to establish cooperation between states in a competitive international world? Neorealist scholars do not deny that there is cooperation between states within the international political structure. But the problem is that the system compels states to cooperate in a limited fashion. Mearsheimer argues that two main obstacles for states to cooperate are "considerations about relative gains" and "concern about cheating."[49] For Waltz, although states seek to gain when they cooperate, they don't ask "will we gain together?" but "who will gain more from us?"[50] The states in cooperation focus on relative gains because there is a possibility that the other may gain more and shift the balance in the system in its favor. Another problem is that states have possibility to cheat to gain more. With this possibility, to

[43] Jervis, "Cooperation Under the Security Dilemma" 176–177,199-207.
[44] Mearsheimer, *The Tragedy of Great Power Politics*, 36.
[45] Shiping Tang, "Fear in International Politics: Two Positions" *International Studies Review* 10, no. 3 (2008): 461.
[46] Waltz, *Theory of International Politics*, 186–187.
[47] Ibid., 111.
[48] Mearsheimer, *The Tragedy of Great Power Politics*, 33.
[49] Ibid., 51–52.
[50] Waltz, *Theory of International Politics*, 105.

establish a fully trusting environment between cooperating states is highly unlikely. Waltz illustrates the trust concern among states with the analogy of stag hunt introduced from Rousseau. It is described in the following manner:

> Assume that five men who have acquired a rudimentary ability to speak and to understand each other happen to come together at a time when all of them suffer from hunger. The hunger of each will be satisfied by the fifth part of a stag, so they "agree" to cooperate in a project to trap one. But also the hunger of any one of them will be satisfied by a hare, so, as a hare comes within reach one of them grabs it. The defector obtains the means of satisfying his hunger but in doing so permits the stag to escape. His immediate interest prevails over consideration for his fellows.[51]

In this analogy, it could be argued that the one who catches the hare does not in fact act rationally because it serves his immediate interest but not his long run interest. Waltz adds that the man who makes move this acts rationally because if he continues to hold his position in the stag hunt, the next man to him can trap the hare and allow the stag escape.[52] Therefore, the self-help system constraints states' behavior in terms of cooperation.

Under these dangerous anarchical world political conditions, the first aim of states is to survive. It could also be asked what neorealists imply when using the concept of "survival". For example, According to Stephen Krasner, the main interests of states are "territorial and political integrity[53]." However, Mearsheimer argues that "specifically, states seek to maintain their territorial integrity and the autonomy of their domestic political order".[54] Before performing any other tasks, firstly states have to survive in the system. Otherwise, they may endanger their existence as a unit in the system. For Waltz, there is a "process of selection" in the international system. This means that "those who conform to accepted and successful practices more often rise to the top', while those who do not 'fall by the wayside'"[55]. The international structure that affects the action of units rewards some kinds of behavior and punishes others. In international politics, the death rate among states may be low[56] but it still allows for states to die, in other words, they may disappear from the international arena, when they don't act strategically in the system.

[51] Waltz, *Man, the State, and War*, 167–168.
[52] Ibid., 169.
[53] Donnelly, *Realism and International Relations*, 54.
[54] Mearsheimer, *The Tragedy of Great Power Politics*, 31.
[55] Mearsheimer, "Reckless States and Realism," 242.
[56] Waltz, *Theory of International Politics*, 92,95.

Waltz argues that although states have many aims, from survival to world domination, survival is the precondition to accomplish any of these secondary goals.[57] Mearsheimer claims that for great powers, there is a hierarchy of goals. But the main aim of great powers in world politics is survival. As Soviet leader Josef Stalin said in 1927: "We can and must build socialism in the Soviet Union. But in order to do so we first of all have to exist"[58]. These different goals of states apart from the actual aim (survival) also clarify why the atmosphere of international political system is so treacherous. The anarchic world order creates a dangerous environment for states because firstly, not all the states in the system want only to survive, they may have other goals. For example, Waltz argues that some states want to be hegemon in the entire world, or some states want to dominate just their region. Or some states may prefer to just to be left alone.[59] The second point is that there is an ambiguity in the goals of states. Which state wants to be hegemon or regional hegemon? State A fears for its survival because its neighbor State B might have an ambition to be a regional hegemon. So, to realize its aim, State B can implement force against State A, because there is no any legal authority to stop its aggression. Neorealists generally call this ambiguity "uncertainty of intentions". Mearsheimer claims that states can never be sure about the intentions of others. He also adds that all great powers in the international system always have "some offensive capability". In other words, each unit in the international system has the capability to hurt or destroy each other.[60] Although states are uncertain about other states' intentions, there is also the "shadow of future", meaning that states are also uncertain about the future intentions of other states. Waltz argues that "In the absence of an external authority, a state cannot be sure that today's friend will not be tomorrow's enemy".[61] Robert Jervis also states that "Minds can be changed, new leaders can come to power, values can shift, new opportunities and dangers can arise[62]."

All this is to say that states need to be powerful in their capabilities within the system, in firstly in order to ensure their security. But there is disagreement among

[57] Ibid., 91–92.
[58] Mearsheimer, *The Tragedy of Great Power Politics*, 31,46.
[59] Waltz, *Man, the State, and War*, 203.
[60] Mearsheimer, *The Tragedy of Great Power Politics*, 30–31.
[61] Kenneth N. Waltz, "Structural Realism after the Cold War," *International Security* 25, no. 1 (2000): 10.
[62] Christopher Layne, "The Unipolar Illusion: Why New Great Powers Will Rise" *International Security* 17, no. 4 (1993): 14.

neorealist scholars on how powerful states should be and how much power needs to be secured. In order to clarify this debate, and recognizing that all states need to maintain their security, Eric Labs asks two questions: "do states seek security by maximizing their relative power or do they seek security by aiming to preserve the status quo?"[63]

From the perspective of offensive neorealist thought, which is associated with John J. Mearsheimer, states are power maximizing units in the international system. As previously mentioned, great powers have offensive military capabilities and therefore capable of using force each other. Additionally, they have no knowledge of intentions of other states. In a world of uncertainty, states seek to maintain their security by increasing their relative power. This means that "states try to gain as large a power advantage as possible over potential rivals in a dangerous world".[64] For offensive realists, the more states have power, the less there is a possibility being attacked. There is no limit on power that states seek. To increase security through maximizing relative power, it is the rational strategy under the anarchy.[65] But in the international politics, great powers do not just want to be the strongest of all great power, they desire to be a world hegemon which means to the only great power in the world.[66] What does it mean to be a world hegemon? Mearsheimer defines a hegemon as "a state that dominates all the states in the system."[67] Without doubt it is almost impossible for an actor to obtain and project power over the entire world because of the geopolitical obstacles to power projection. Another obstacle to becoming global hegemon is the nuclear proliferation in the world. A global hegemon has to achieve nuclear superiority meaning it sould be the only nuclear power which has capability to attack other states with no fear of retaliation.[68] But in the nuclear age, it is impossible to gain this type of status among states in the world. Therefore, there is always a great power competition in the international political system. That is the tragedy of great power politics. To illustrate, Mearsheimer claims that United States is the most powerful state in the world. But it is not a hegemonic

[63] Eric J. Labs, "Beyond Victory: Offensive Realism and the Expansion of War Aims" *Security Studies* 6, no. 4 (1997): 1.
[64] Mearsheimer, *The Tragedy of Great Power Politics*, 36.
[65] Labs, "Beyond Victory" 12.
[66] Mearsheimer, *The Tragedy of Great Power Politics*, 2.
[67] Ibid., 40.
[68] Ibid., 141, 145–146.

power that dominates all regions in the world. Nevertheless, it is the only regional hegemon and being "the only regional hegemon" is the ideal position in the international politics. A regional hegemon does not want to see any great power dominate another region of the world. Therefore, the main strategy is to "keep other regions divided among several great powers" to prevent a rise of any potential competitor in the world.[69]

From the vantage point of defensive neorealist school which is associated with Waltz, under anarchy, the main goal of states is to maintain their security. Waltz argues that "increased power may or may not serve that end… The first concern of states is not to maximize power but to maintain their positions in the system".[70] According to Barry Posen, the security dilemma as discussed earlier in this section is not usually a feature of this world system because "status quo policies are the rule rather than the exception".[71] In contrast to the assumption of offensive realism which emphasizes that states should maximize its relative power in order to maintain their security in the system, for defensive realists, having too much power is as risky as having too little having power.

Waltz claims that,

> "Neorealists see power as a possibly useful means, with states running risks if they have either too little or too much of it. Weakness may invite an attack that greater strength would dissuade an adversary from launching. Excessive strength may prompt other states to increase their arms and pool their efforts. Power is a possibly useful means, and sensible statesmen try to have an appropriate amount of it.In crucial situations, the ultimate concern of states is not for power but for security. This is an important revision of realist theory".[72]

For example, if State A has less relative power compared to State B and State C, State A is in a very risky position. Because under the lack of central authority, State B or State C may use of force against weak State A. In contrast, if State A is more powerful than State B and State C, it is also a risky position to be in, because with the aim of to preventing concentration of power in one actor, it will cause State B and State C to counter balance. When Nazi Germany (1933-45) tried to dominate the continent, an alliance formation was established and counterbalanced against the rise

[69] John J. Mearsheimer, "Taiwan's Dire Straits" *The National Interest*, no. 130 (April 2014): 32.
[70] Waltz, *Theory of International Politics*, 126.
[71] Labs, "Beyond Victory" 9.
[72] Waltz, "Realist Thought and Neorealist Theory" 36.

of Germany.[73] Therefore, to preserve their position in the international system, states become security maximizing units instead of power maximizers.

Therefore, instead of implementing expandisionist policies, states attempt to maintain the status quo in the international political system.[74] In short, as Waltz argues, "states balance power,not maximize it".[75] At this point, it should to be asked with regard to neorealism, what the balance of power theory in world politics means and why does the balance of power occur?

2.2.3 Balance of Power

Balance of power is one of the key concepts in the international relations discipline. Scholars have different definitions for the meaning of the concept. For Vattel, the balance of power refers to "an arrangement of affairs so that no state shall be in a position to have absolute mastery and dominate the other."[76] Morgenthau defines the balance of power as "an actual state of affairs in which power is distributed among several nations with approximate equality".[77]

As the offensive and defensive neorealism have different assessments of the amount of power that states need, their understanding of the balance of power and balancing behavior of states are also different.

Waltz argues that "the balance of power is built up from assumed motivations of states and actions that correspond them."[78] There are three main requirements of this theory to operate. There has to be an anarchical international system and states should be the units of system, seeking to maintain their sovereignty. Lastly, For Waltz, whereas some scholars argue that a balance of power system requires at least three or more actors, he assumes that even in a two powers system, a balance of power is possible. As previously mentioned this is because there is no central superiour government, every unit with its varying capabilities has to protect itself in order to continue its existance. States reach this goal either through "internal balancing" which means increasing their economic and military strenghth by

[73] Mearsheimer, "Structural Realism" 75.
[74] Labs, "Beyond Victory" 10; Mearsheimer, "Structural Realism" 75.
[75] Waltz, *Theory of International Politics*, 172.
[76] Michael Sheehan, Balance Of Power (New York: Routledge, 1996), 3
[77] Ibid., 3.
[78] Waltz, Theory of International Politics, 118

pursuing creative strategies, or through "external balancing" which means forming and strenghtening alliances with other states[79]. The emergence of a hegemon, mostly in the long run, endangers and threatens the existance of states in the international system. Under such circumstances, a balance of power system plays an important role for states' security. For example, after the Cold War, the United States emerged as the sole superpower in the world. Waltz argues that "theory enables one to say that a new balance of power will form but not to say how long it will take."[80] In other words, states balance their power against any rising state in order to maintain the status quo. Under the balance of power system, states do not seek to maintain peace in the international system. The balance of power operates because states, as rational and unitary actors, want to maintain their security. The balance or equilibrium appears in the system as a result from states' actions. On the other hand, the structure compels states to establish this balance in the system. In other words, "the establishment of the system, is the unintended consequence of the actions of many states as each attempts to maximize its own interests under existing constraints." [81] Once the balance is established in the system, because of equality in the power of states, it becomes hard to win the war for the aggressor. Therefore, the balancing of power by states also serves to prevent war between actors in the system. The balance of power system is risky, not constant and needs to be attended by states because in the international political system, there are always states which seeks to shift the balance in their favor. For some scholars such as Waltz, this system occurs automatically as a law of behavior.[82] Waltz states that "the expectation is not that a balance once achieved will be maintained,but that a balance once disrupted will be restored in one way or another. Balances of power recurrently form".[83]

For Stephen Walt who examines the alliance formations of states in the international system, when states display balancing behaviours to defend their interests, threat perception, aside from power, plays an important role in their balancing actions.

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[79] Ibid., 118.
[80] Waltz, "Structural Realism after the Cold War"30.
[81] Jack S. Levy, "What Do Great Powers Balance Against and When?," in *Balance of Power: Theory and Practice in the 21st Century*, ed. T. V. Paul, James Wirtz, and Michel Fortmann, 1 edition (California: Stanford University Press, 2004), 32.
[82] Ibid., 33-34.
[83] T. V. Paul, "Introduction:The Enduring Axioms of Power Theory and Their Contemporary Relevance" in *Balance of Power: Theory and Practice in the 21st Century*, ed. T. V. Paul, James Wirtz, and Michel Fortmann, 1 edition (California: Stanford University Press, 2004), 6.

According to Walt, power is not the most influantial factor that shapes a state's behavior in world politics. In fact, "states tend to ally with or against the foreign power that poses the greatest threat.[84]" Furthermore, Walt claims that there are four criterias that determine the level of threat posed by another state: i) Aggregate Power ii) Geographic Proximity iii) Offensive Power iv)Aggressive Intentions.[85]

It should be noted that for neorealists, although balancing represents states' actions, the balance of power is the outcome that results from these actions. Neorealists ask whether, in order to survive in the anarchic international system, states' only option is to balance against external power or threat? The answer according to the neorealist school of thought is, no. There are also other strategies that states can apply in order to achieve their goals. For Waltz, although states mostly tend to *balancing* behavior in the system, sometimes they choose *bandwagoning*, considered by some scholars to be the opposite course to balancing. He describes the term thus: " as soon as someone looks like the winner, nearly all jump on the bandwagon rather than continuing to build coalitions intended to prevent anyone from winning the prize of power. Bandwagoning, not balancing, becomes the characteristic behavior."[86] This means that a bandwagoning strategy instead of balancing may be preferrable "when the gains are possible even for the losers". [87] Stephen Walt defines bandwagoning as "alignment with the source of danger."[88] According to Walt, states mainly have two motivations for bandwagoning. The first motivator is that a state choosed bandwagoning for "defensive purposes". To prevent being attacked by an aggressor and being eliminated from the system as a result of the attack, states choose to ally with the source of the threat. The second factor is that states choose bandwagoning "in order to share the fruits of victory". In other words, states ally with a dominant power to make a profit.[89] But it is argued by Walt that the bandwagoning strategy is dangerous for states. Because this behavior on the part of one state increases the resources of the powerful side and the system becomes imbalanced in favor of the

[84] Stephen M. Walt, *Origins of Alliance*, 1st New edition (Ithaca: Cornell University Press, 1990), 21.
[85] Stephen M. Walt, "Alliance Formation and the Balance of World Power" *International Security* 9, no. 4 (1985): 9.

[86] Waltz, *Theory of International Politics*, 126
[87] Ibid., 126.
[88] Stephen M. Walt, *Origins of Alliance*, 1st New edition edition (Ithaca: Cornell University Press, 1990), 17.
[89] Ibid., 21.

powerful state and as mentioned previously, states can not be sure of the intentions of other states.[90] Intentions can change, and in this regard, policies can change. As Layne states, "The preeminent power's intentions may be benign today but may not be tomorrow".[91]

On the other hand, according to Mearsheimer, bandwagoning is not a productive strategy chosen by a state against an aggressor power. Although the state may increase its absolute power by choosing bandwagoning, the aggressor's power also increases even more. The main strategies for a state to maintain their security are therefore balancing and buck-passing. He states that, "with *buck-passing*, states try to get another power to check the aggressor while they remain on the sidelines".[92] In this strategy, a "buck-passer" does not want to directly confront the threatening state and therefore encourges another state to take on this task. This other state is called a "buck-catcher" which accepts the responsibility to take on the aggressive behaviors of threatening power. For Mearsheimer, buck-passing is a risky strategy for threatened states because there is always a possibility that the buck-catcher may increase its power to a higher level and as a result, the balance may shift in favor of the buck-catcher.[93]

However, buckpassing is not just a strategy that states choose against threatening aggressors. It is also one of the structural dangers or problems that states might face within the multipolar system.[94] The other problem in multipolarity which affects the balancing process of states is the chain-gang problem. It is a situation in which "any nation that marches to war inexorably drags its alliance partners with it".[95]

As previously pointed out, it is argued by neorealists that states are differentiated by the capabilities they possess in the international system. Waltz argues that, "a change in the distribution of power among great powers changes the structure of a system

[90] Waltz, "Realist Thought and Neorealist Theory", 29.
[91] Layne, "The Unipolar Illusion" 14.
[92] Mearsheimer, *The Tragedy of Great Power Politics*, 136,138,139.
[93] Ibid., 161.
[94] In multipolar systems, power is distributed among more than two great powers. According to Mearsheimer, there are two types of multipolar system. There is a balanced multipolarity in which there is no potential hemegon and power is divided among states roughly equally. There is also a unbalanced multipolarity in which there are three and more great powers and one of them is potential hegemon. Nevertheless, in bipolarity systems, there are mainly two great powers which has roughly equal capabilites. See Ibid., 269–270.
[95] Thomas J. Christensen and Jack Snyder, "Chain Gangs and Passed Bucks: Predicting Alliance Patterns in Multipolarity" *International Organization* 44, no. 2 (1990): 140.

which then changes expectations about how the units of the system will behave and about the outcomes their interactions will produce".[96] The neorealist approach assumes that the distribution of power among states is essential because it not only affects the behavior of states but also because there is a relationship between the risk of war and polarity in the international system.

Waltz and Mearsheimer assume that a bipolar world system is more peaceful than a multipolar world. For Waltz, the two main causes of war are uncertainity and miscalculation. In bipolar systems, there are only two dominant powers which concentrate on and balance against each other. This decreases uncertanity and miscalculation between them.[97] According to Mearsheimer, because there are more great powers competing under multipolarity, the possibility of the war increases.[98]

Nevertheless, there is also an important factor that has great impact on the nature of the international system: nuclear weapons. For Waltz, during the cold war, the two main reasons preventing the outbreak of war between the great powers were the bipolarity of the system and nuclear weapons.[99] Mearsheimer also describes three factors accounting for peace in Europe since the Second World War. These are "the bipolar distribution of military power on the Continent; the rough military equality between the polar powers, the United States and the Soviet Union; and the ritualistically deplored fact that each of these superpowers is armed with a large nuclear arsenal".[100]

The second section of this chapter, firstly, looks into the unique position of nuclear weapons in world politics and then the importance of nuclear weapons in the international system is analyzed from a neorealist perspective at the nation state level and system level.

2.3 Understanding Nuclear Weapons from a Neorealist Perspective

On August 6, 1945, the first atomic bomb was dropped from an American bomber over the Japanese city of Hiroshima. The world for the first time was confronted with

[96] Waltz, *Theory of International Politics*, 97.
[97] Ibid., 168.
[98] Mearsheimer, *The Tragedy of Great Power Politics*, 338–339.
[99] Waltz, "The Emerging Structure of International Politics" 44.
[100] John J. Mearsheimer, "Why We Will Soon Miss The Cold War" *The Atlantic Monthly* 266, no. 2 (August 1990): 36.

the unprecedented destructive power of the atomic bomb. This was the beginning of the nuclear age in the world. The second section of this chapter asks the following basic questions: Why are nuclear weapons so important? With regard to neorealism, why do some states seek or not seek to build nuclear weapons? And how does neorealist thought explain the role of nuclear weapons in world politics?

2.3.1 Functions of Nuclear Weapons as Weapons of Mass Destruction

Throughout history, many changes and innovations have occurred which affect the interaction of states in the international system. For instance, changes in transportation or in communication have effected powerful influences on the actions of units in the international system. But for Waltz, the greatest such change of all time is the advent of the nuclear weapon.[101]

Nuclear weapons are the most important and effective military invention in world history. Although they are categorized as a type of weapon of mass destruction, nuclear weapons ought to be placed into a totally different category of weapons. Nuclear explosions are immensely powerful when compared to other weapons. Additionally, when a nuclear explosion occurs, a tremendous amount of energy is released in the form of heat, blast and radiation. With this incomparable power, nuclear weapons are capable of destroying cities totally, as well as everything in them without discrimination. They can kill thousands of people and demolish entire infrastructure. Also nuclear explosions are very dangerous for the environment. Because of their unique destructive characteristics, they can be also called "doomsday machine".

Nuclear weapons have had a great impact on the political and military nature of states in world politics. In order to understand the effect of nuclear weapons on military affairs, the main differences between nuclear weapons and other (conventional and mass destruction) weapons have to be analyzed.

As mentioned above, the main difference is that a nuclear explosion is so much more powerful and effective than a conventional explosion. To illustrate this comparability, table 1 which was prepared by United States Strategic Bombing

[101] Waltz, "Structural Realism after the Cold War" 5.

Survey displays a comparison of atomic and conventional attacks performed by the United States against Japanese cities in the Second World War.

Table 1: A Comparison of Atomic and Conventional Attacks

Effort and Results				
	Hiroshima	Nagasaki	Tokyo*	Average of 93 urban attacks**
Planes	1	1	279	173
Bomb load	1 atomic	1 atomic	1,667 tons	1,129 tons
Population density per square mile	46.000	65.000	130.000	unknown
Square miles destroyed	4,7	1,8	15,8	1,8
Killed and missing	70/80.000	35/40.000	83.600	1.850
Injured	70.000	40.000	102.000	1.830
Mortality rate per square mile destroyed	15.000	20.000	5.300	1.000
Casualty rate per square mile	32.000	43.000	11.800	2.000
* : The data from the most effective single urban attack by United States, that on Tokyo on 9 March 1945				
**: The average effort and results from the Twentieth Air Force's campaign against Japanese cities.				

U. S. Strategic Bombing Survey, "The Effects of the Atomic Bombings of Hiroshima and Nagasaki" (President's Secretary's File, Truman Papers, 1946), 37, accessed February 27, 2015, http://www.trumanlibrary.org/whistlestop/study_collections/bomb/large/documents/pdfs/65.pdf#zoom=100.

As seen in the table, atomic bombs are incomparable tools for the military power of states that possess them.

Besides its destructive force, they hit and affect their targets so quickly. For instance, two countries that have nuclear weapons can destroy each other's cities in a mere couple of hours. According to Jervis, in conventional bombing, there is a time for negotiation to take place between sides during the war.[102] The warring parties may seek to reduce their exposure to risk or to limit the damage they may face. But in nuclear warfare, when the explosion occurs, no time is left to negotiate, or to prevent more loss of life and minimize the damage to property within the countries.

Another aspect is that nuclear weapons have not only altered the nature of military affairs but they have also changed the nature of warfare. In contrast to conventional warfare in which quantitative and qualitative superiority provides more advantage to

[102] Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon*, First edition (Ithaca: Cornell University Press, 1989), 6.

a side on the battlefield, in nuclear warfare, conventional weapons have a limited role. This means that the state that has the strongest military force could be seriously hit by a defeated nuclear opponent.[103] According to Jervis, in this regard, there is a contradiction in the fact that during the Cold War era, in which the nuclear age was introduced, the United States and Soviet Union had enormous military power, although paradoxically they had always been unprotected against each other. He has termed this situation 'mutual vulnerability'.[104] Additionally, military victory becomes impossible in under conditions of nuclear warfare if the warring sides have second strike capabilities or if mutual destruction is assured between opposing states. In conventional warfare, even if there is a small chance to win a war, decision makers might decide to go to war. But in the nuclear age, there also exists the probability of mutual destruction if war breaks out between two such nuclear powers.[105] In his renowned masterpiece, *On War*, Clausewitz states that "war is merely the continuation of policy by other means."[106] However, for such nuclear weapon states, nuclear war is simply a possibility that they must avoid. This is because war among states that possess strategic nuclear forces may lead to mutual destruction.

Although neorealist scholars agree on MAD (Mutual Assured Destruction) between nuclear states, they disagree on the level of nuclear capability that states have to build for their security. On the one hand, according to defensive realists, if states reach nuclear second strike capability, there is no need to pursue nuclear superiority, because opponent states with second strike capabilities guarantee MAD. For instance, according to Stephen Walt, in a MAD world, "nuclear superiority" has no meaning. Even if a state has more warheads compared to its opponent, it cannot attack its opponent because of the risk of its retaliation.[107] According to Jervis, in the

[103] T. V. Paul, "Power, Influence, and Nuclear Weapons: A Reassessment," in *The Absolute Weapon Revisited: Nuclear Arms and the Emerging International Order*, ed. T. V. Paul, Richard J. Harknett, and James J. Wirtz (The United States of America: University of Michigan Press, 1998), 5. But Mearsheimer states that this fact does not mean that the conventional forces are not important for the states that have nuclear capability. For example, in the cold war, although United States and Soviet Union had thousands of warheads, they also had very large and strong armies for their national security. Mearsheimer, *The Tragedy of Great Power Politics*, 132–133.
[104] Jervis, *The Meaning of the Nuclear Revolution*, 1.
[105] Ibid., 7.
[106] Carl von Clausewitz, *On War, Indexed Edition*, trans. Michael Eliot Howard and Peter Paret, Reprint edition (Princeton, N.J.: Princeton University Press, 1989), 87.
[107] Stephen M. Walt, "Rethinking the 'nuclear Revolution' *Foreign Policy*, August 3, 2010, accessed February 27, 2015 http://foreignpolicy.com/2010/08/03/rethinking-the-nuclear-revolution/.

preatomic age, the size of armies was important to conquer other territories or to defend cities. But in the nuclear age, there is no need to build a large nuclear arsenal because providing a "stable and robust" nuclear deterrent capability is enough for states.[108] For Waltz, in a situation of mutual vulnerability, even the deployment of missile defense systems by one nuclear weapon state against another nuclear weapon state would bring nothing to their security due to the fact that the states have already deterred each other. Furthermore, missile defense has a negative effect on the security of both states. The effect here is that the deployment of a missile system causes the other state to further build up its own nuclear arsenals and seek new techniques to deliver it.[109]

On the other hand, according to Mearsheimer, although MAD creates stability between capable nuclear powers, they should still seek nuclear superiority as military technologies develop rapidly. Also great powers in the system always want to be first in terms of military technology.[110] In a nuclear world, one side's national survival is in the hands of the other side and cooperation between nuclear states becomes a common self-interest for survival.[111] Following the neorealist school of thought, it could be said that the emergence of the Non Proliferation Treaty [112] (NPT) in 1968 stemmed from the cooperation of great powers. According to Jervis, the foremost condition of the establishment of security regimes is the strong willingness of great powers to establish them.[113] Most countries in the world which are not great powers also continue to join the NPT.[114] For Jervis, these states would want to develop nuclear weapons if their neighbor owns them. But, if these states are certain that their neighbors have joined the NPT and have pledged not to build nuclear weapons, they

[108] Robert Jervis, "Why Nuclear Superiority Doesn't Matter" *Political Science Quarterly* 94, no. 4 (1979): 618.
[109] Kenneth N. Waltz, "Missile Defenses and Multiplication of Nuclear Weapons" in *The Use of Force: Military Power and International Politics*, ed. Robert J. Art and Kenneth N. Waltz, Sixth Edition edition (Lanham, Md: Rowman & Littlefield Publishers, 2003), 347–349.
[110] Mearsheimer, *The Tragedy of Great Power Politics*, 230–232.
[111] Robert Jervis, *The Illogic of American Nuclear Strategy*, 1st edition (New York: Cornell University Press, 1984), 31.
[112] This international treaty has three pillars: nuclear disarmament, nuclear non–proliferation and peaceful use of nuclear energy. It was opened for signature in 1968 and entered into force in 1970. Most states have ratified the NPT. See "Nuclear Non-Proliferation Treaty" *UNRCPD*, accessed March 1, 2015, http://unrcpd.org/wmd/the-nuclear-non-proliferation-treaty/.
[113] Robert Jervis, "Security Regimes" *International Organization* 36, no. 2 (1982): 360.
[114] However, North Korea abandoned the NPT and built nuclear weapons due to strategic reasons which will be detailed in the third chapter of this dissertation.

also want to be part of the treaty [115] , because developing nuclear weapons would have a cost for these states.

With their unique destructive power, nuclear weapons are still important in international relations. In the next section, how neorealist thought explains the actions of states with regard to nuclear weapons will be examined.

2.3.2 Functions of Nuclear Weapons as Instrument of Deterrence and Instrument of Compellence

According to the neorealist school of thought, as mentioned in the first section of this chapter, the main goal of states is to maintain their security in the international system. States achieve this main goal by employing their national power. At this point, nuclear weapons play an important role for states to preserve their security. What are the advantages of having nuclear weapons to a state? The first advantage is that they enormously increase the military power of a state in the international system. Joseph Nye states that "during the five centuries of the modern state system, different power resources played critical roles in different periods."[116] Nuclear weapons are unique in their destructive force. In this context, the most important advantage to having a nuclear weapon is that they can be used as a strategic deterrent force. Deterrence can be defined as "the prevention from action by fear of the consequences".[117] The requirement for deterrence is the ability to inflict "unacceptable damage" on the aggressor.[118] Nuclear weapons are excellent deterrent forces because they increase the cost of conflict enormously.

Another advantage of possessing nuclear weapons is that they provide compellence power to the owner states. In contrast to deterring the adversary from initiating something, nuclear compellence means forcing the opponent to do something or to change something due to its fear of the nuclear weapons. The well-known example

[115] "Theory Talks: Theory Talk #12: Robert Jervis," 2008, accessed February 6, 2015 http://www.theory-talks.org/2008/07/theory-talk-12.html.
[116] Paul, "Power, Influence, and Nuclear Weapons: A Reassessment" 44.
[117] Keith B. Payne, *Deterrence in the Second Nuclear Age* (Lexington: The University Press of Kentucky, 1996), 4.
[118] Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better* (London: International Institute for Strategic Studies, 1981), 16.

for nuclear compellence is that of the Cuban missile crisis, the United States compelled the Soviet Union to withdraw its missiles from Cuba.[119]

The fact that nuclear weapons possess these functions as instrument of strategic deterrence and compellence can be used to explain why some states have nuclear ambitions. Of course, the main logic of having nuclear weapons is more complex and different theories have different explanations about the nuclear decisions of states.

Neorealism explains the acquisition of nuclear weapons by states mainly through the nature of the international political system, uncertainty about other actors, their intentions and external threat perceptions. Scott Sagan has introduced three models to understand why states decide to develop nuclear weapons or not.[120] In his security model, states decide to develop nuclear weapons to increase their security against external threats (especially external nuclear threats).[121] A state in the anarchic international system seeks to obtain nuclear deterrence protection to maintain its security against its opponent which has nuclear capability. States gain the nuclear deterrent by two ways. If it has the capability, it can build its own nuclear weapons. But if it is too weak to develop its own nuclear weapon, it can make or join an alliance with a nuclear power in order to balance its nuclear opponent. [122]

Waltz claims seven reasons for states' decisions to build nuclear weapons. The first reason stems from the behavior of the great powers. If one great power develops and introduces a new weapon that has a great impact on warfare, the other great powers generally try to obtain or develop it. For instance, United States exploded the first hydrogen bomb in 1952. Ten months later, in 1953, the Soviet Union tested its first hydrogen bomb.[123] The second reason is that a state may decide to develop nuclear weapons because it fears that when it is attacked by another state, its ally with nuclear capability will not protect it, in other words, the fear of abandonment. The third reason is that if a state has no nuclear allies and the adversary of that state has already obtained the nuclear weapon, that state may build its own nuclear arsenal.

[119] Paul, "Power, Influence, and Nuclear Weapons: A Reassessment" 23.
[120] The three models about the decision of states to build nuclear weapons are security model, domestic model and norm model. In this thesis, only security model which is related to neorealism is explained. For details see Scott D. Sagan, "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb," *International Security* 21, no. 3 (1996): 55-57.
[121] Ibid., 55.
[122] Ibid., 57–58.
[123] Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Nonproliferation* (New York: Columbia Univ Pr, 1988), 9–10.

Pakistan developed its nuclear weapons after the nuclearization of India. Four is that if state is under the threat of adversaries which have powerful conventional forces, it may develop its own nuclear weapon. Israel is the best example of this situation. The fifth reason is about the competitiveness of nuclear weapons. Because of its affordable price, some states may opt to obtain nuclear weapons in order to escape from the conventional arms race. The sixth reason is that states may decide to build nuclear weapons because of their offensive purpose. But for Waltz, this reason is highly unlikely. The last reason he puts forward is that states may decide to obtain the most powerful weapon on earth for its prestige. But according to Waltz, developing a nuclear weapon for its prestige alone is not enough of a reason for a state.[124] Besides external security concerns, Mearsheirmer adds historical factors that affects the nuclear decisions of states. He gives Israel as an example. According to him, Israel decided to build a nuclear weapon in the 1950s and 1960s because of security concerns and historical factors such as the holocaust.[125]

Regarding the security motivation of states to obtain nuclear weapons, Mearsheimer states that

> In fact, nuclear weapons are a superb deterrent for states that feel threatened by rival powers. Simply put, no state is likely to attack the homeland or vital interests of a nuclear-armed state for fear that such a move might trigger a horrific nuclear response. Not surprisingly, therefore, states are often tempted to acquire nuclear weapons to enhance their security.[126]

Furthermore, Waltz argues that "if a state has a nuclear weapon capability, it will not be attacked in ways that threaten its vital interests."[127] Thus, it is true that since the beginning of the atomic age, no country that obtains a nuclear weapon has been conquered or occupied by another states. Therefore, in his article named ''The Case for a Ukrainian Nuclear Deterrent,'' Mearsheimer (1993) claimed that there might be potential Russian aggression against Ukraine in the future. To guarantee its security, Ukraine should keep its nuclear arsenal as a deterrent force against any possible

[124] Waltz, *The Spread of Nuclear Weapons*, 7–8.
[125] John J. Mearsheimer, "Israel's Nukes Harm US National Interests," *Antiwar.com Original*, July 9, 2010, accessed February 6, 2015, http://original.antiwar.com/john-mearsheimer/2010/07/08/israels-nukes-harm-us-national-interests/.
[126] John J. Mearsheimer, "Here We Go Again," *The New York Times*, May 17, 1998, accessed February 6, 2015sec. Opinion, http://www.nytimes.com/1998/05/17/opinion/here-we-go-again.html.
[127] Richard K. Betts, Scott D. Sagan, and Kenneth N. Waltz, "A Nuclear Iran: Promoting Stability or Courting Disaster?" *Journal of International Affairs*, no. 60 (Spring/Summer 2007): 137.

Russian attack.[128] Although nuclear weapons have not been used since 1945, there is always a possibility for their use.

Moreover, neorealism views states as billiard balls, meaning that the domestic characteristics of states, as is the case with its behavior in the international system, have no effective role in a state's nuclear decisions. When nuclear weapon states are examined - today there are nine states which possess nuclear weapons in the world - it can easily be determined that they have different forms of government and that they have different economic structures.

Although nuclear weapons have many benefits to states, paradoxically very few states have nuclear weapons in the world. [129] It needs to be asked why all states in the international arena don't seek to obtain these lethal weapons to increase their security? As mentioned in the first part of this chapter, neorealism assumes that states are rational actors in the system. In other words, they decide to perform their actions through cost-benefit analysis. Consequently, some states decide to build nuclear weapons but some states (even most states) decide not to acquire nuclear weapons because every state in the system does not view nuclear weapons as a potentially beneficial form of military and political power.[130]

First of all, it should be noted that in order to make nuclear weapons, states have to fulfil in two conditions. The first condition is the technological capability which a states must have to make an atomic bomb. This technical capability covers scientific expertise, advanced nuclear technologies and engineering skills. The second condition is political motivation as mentioned above. The state has to fulfil these both of these conditions in order to make a nuclear weapon.[131] It is an extremely difficult decision to take for states. When they decide to make a bomb, they have to overcome serious difficulties. The first challenge is about nuclear technology and obtaining scientific know-how. A would-be proliferator state has to achieve some technological requirements such as "scientific and technical man power of a high

[128] John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs* 72, no. 3 (1993): 50–53.
[129] The states that possess nuclear weapons are United States of America, Russian Federation, China, United Kingdom, France , India, Pakistan, North Korea and Israel "16 June 2014: Nuclear Forces Reduced While Modernizations Continue, Says SIPRI — Www.sipri.org,", accessed February 27, 2015, http://www.sipri.org/media/pressreleases/2014/nuclear_May_2014.
[130] Zachary S. Davis, "The Realist Nuclear Regime" *Security Studies* 2, no. 3–4 (1993): 81.
[131] Reiss, *Without the Bomb*, 247.

caliber, sources of raw material, know-how for the manufacture of nuclear explosives from the raw materials, capability to produce bombs and delivery vehicles and possession of requisite financial resources."[132] This process takes time depending on the technological development of states.[133] For instance, it takes more time and becomes more difficult to fulfill such technical requirements for underdeveloped countries with low educational levels or non-industrialized economies.

However, some states called "nuclear threshold states" have acquired the technology and know-how to produce nuclear weapon but do not have the political will to make a decision for nuclear weapons. Japan may be the best example of a threshold state. Japan is the only non-nuclear weapons state that has tons of separated plutonium, which could be used to make nuclear weapons.[134] Japan has the technological capacity to produce a nuclear weapon in a very short time.[135] Why some states do not want to make a nuclear weapon, although they have technological capability, is a political calculation.

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[132] Yehoshafat Harkabi, *Nuclear War and Nuclear Peace*, ed. Alan Dowty and Derek Orlans, trans. Yigal Shenkman (New Brunswick (U.S.A.): Transaction Publishers, 2008), 161.

[133] In his article named "Nuclear Latency and Nuclear Proliferation", Sagan examines about how quickly states build a nuclear weapon after they decide. For instance, in the work of Albert Wohlsletter named "Swords from Plowshares", it is argued that states which has no nuclear infrastructure need at least six years to build a nuclear weapon if they decide to make a bomb. He explains that although this study is very important, it has some weaknesses. For example, the timelines in the research were based on American experiences. It means that every would-be proliferator has to build its infrastructure as the United States did. Briefly, Sagan states that nuclerization process of states that choose to build a bomb has no constant time as women give a birth approximately in nine months and it takes different time lenghts. For details see Scott D. Sagan, "Nuclear Latency and Nuclear Proliferation," in *Forecasting Nuclear Proliferation in the 21st Century: Volume 1 The Role of Theory*, ed. William Potter and Gaukhar Mukhatzhanova (Stanford, Calif: Stanford Security Studies, 2010).

[134] Jeffrey Lewis, "Japan Has Enough Plutonium to Make Thousands of Nukes," *Foreign Policy*, December 1, 2014, accessed February, 26 http://foreignpolicy.com/2014/12/01/japan-has-enough-plutonium-to-make-thousands-of-nukes/.

[135] It should be noted that nuclear threshold states should not be considered as "a nuclear weapon state", even if they have the capability to make a bomb overnight. To illustrate that in the state of emergency, when there is a need to use the bomb, there would be different reactions between a state which has an operational nuclear weapon on stand-by and a threshold state. The first state can react to the emergency event quickly in a couple of hours. However, the second state needs time to react. Time is needed because there are some procedural and technical steps that have to be taken for the acquisition of nuclear weapons. After making decision to produce the bomb, technological requirements such as "to extract the material from civilian stockpiles, to forge the metal hulls for the devices, to conduct the many calculations for the trigger assembly on the computer, to shape the conventional explosive and plutonium lenses, to construct the neutron source, to attach the firing circuits and fit the weapon to the chosen carrier" have to be carried out in the process of transforming the technology from civilian use to military use. Although these steps are not so hard to achieve for advanced technological, it takes time. For details see Harald Müller, "Maintaining Non-Nuclear Weapon Status," in *Security with Nuclear Weapons?: Different Perspectives on National Security*, ed. Regina Cowen Karp (New York: Oxford University Press, 1991), 307–308.

A state that makes a cost benefit analysis may decide to maintain its non-nuclear weapon state status because "the predictable reactions of other states may make nuclear status self-defeating."[136] For example, the main danger that would-be-proliferators may face when they decide to go nuclear is preventive war. The logic of preventive war is that an attack is launched by a strong state against a weak state before it can become alarmingly strong. Regarding the acquisition of nuclear weapons, an existing nuclear weapon state may strike a new would-be-nuclear state preventively in order to destroy its nuclear capability before it can become militarily effective.[137] The well-known preventive strike example is the attack of Israel on an Iraqi nuclear plant. In 1981, a French-built nuclear plant named Osirak Reactor near Iraq's capital, Baghdad was bombed by Israel, which claimed that it was designed to make nuclear weapons to destroy Israel.[138] Additionally, Mearsheimer claims that one of the reason why Taiwan should not choose the nuclear option as a deterrent force is that if it uses this option, it is likely that China which does not want one more nuclear weapon state in its neighborhood, may preventively attack Taiwan's nuclear facilities and may then even conquer the island. That's why the decision to develop a nuclear weapon is not a good option for Taiwan.[139] Because of the possibility of a preventive attack, the option of building a nuclear weapon does not always enhance the security of state. Therefore, in their decision to acquire nuclear weapons, states make calculations for their best interest and pursue their policies on that basis.[140]

Instead of building a nuclear weapon, most states in the international system have signed the Non Proliferation Treaty (NPT)[141] with non-nuclear weapon state status because they view it as more advantageous to become members of the Treaty having made a cost benefit analysis. States basically sign the NPT for two reasons. The first is that through its verification mechanism, it reduces the uncertainty about nuclear facilities among states. For instance, it guarantees that there is no need to feel concern about a possible nuclear weapons program in an adversary state. Secondly,

[136] Davis, "The Realist Nuclear Regime" 81.
[137] Waltz, *The Spread of Nuclear Weapons*, 5,17.
[138] "1981: Israel Bombs Baghdad Nuclear Reactor" *BBC*, June 7, 1981, sec. 7, accessed February 27, 2015, http://news.bbc.co.uk/onthisday/hi/dates/stories/june/7/newsid_3014000/3014623.stm.
[139] Mearsheimer, "Taiwan's Dire Straits," 37–38.
[140] Reiss, *Without the Bomb*, XXİ.
[141]The United States of America, United Kingdom, France, Russia and China have signed the NPT with nuclear weapon state status. India, Pakistan, North Korea, Israel and South Sudan are not signatories of the treaty. See "Nuclear Non-Proliferation Treaty" *UNRCPD*, accessed March 1, 2015, http://unrcpd.org/wmd/the-nuclear-non-proliferation-treaty/

by signing the NPT, states benefit from implicit collective security. The NPT establishes collective security against possible nuclear and conventional threats.[142] On the other hand, according to the security model of Sagan, the nonproliferation policy is unlikely to create the nuclear free world it aims for. It can only decelerate the emergence of new nuclear weapon states. There are two main reasons for this. The first is that after the end of the Cold War, in a multipolar system with increased uncertainties, nuclear guarantees provided by the United States will come under question. The second reason is that when one state becomes a nuclear weapon state, it will encourage other neighboring states to do the same.[143]

As can be seen from the explanations above, according to neorealism, in the state of anarchy, external security threats have a great impact on the nuclear decisions of states. In the next section, how the maintenance of nuclear weapons influences international politics will be explained according to neorealism.

2.3.3 Proliferation and Stability

In the book "Deterrence in the Second Nuclear Age", Colin S. Gray asks, "Why did the great Cold War not conclude with a nuclear World War III? Were we clever, or lucky, or both?"[144] There is no doubt that nuclear weapons played a very important role in the absence of war between the world's superpowers during the Cold War. According to Waltz, although there was always a possibility of war in the international system, the probability of a great war between nuclear powers becomes lower in the nuclear age.[145] The paradox here lies in the question of how the most dangerous weapons of all time contributes to world peace? The main neorealist argument is that nuclear weapons do not only increase the cost of war, but also make mutual destruction possible. The fear of escalation to the level of nuclear war restrains the warring sides from engaging in direct conflicts. On the other hand, this fear of nuclear war may make low level conflicts possible. This is the theory behind

[142] Müller, "Maintaining Non-Nuclear Weapon Status", 332.
[143] Sagan, "Why Do States Build Nuclear Weapons?" 62.
[144] Payne, *Deterrence in the Second Nuclear Age*, sec. Foreword.
[145] Kenneth N. Waltz, "Nuclear Myths and Political Realities" *The American Political Science Review* 84, no. 3 (September 1, 1990): 744.

the 'stability-instability paradox' coined by Glenn Snyder.[146] Although neorealist scholars admit to the stabilising factor of nuclear weapons, not every neorealist is as optimistic as Waltz about the peaceful role of nuclear weapons. For instance, Mearsheimer argues that nuclear weapons make a region more stable but they bring risks with them too. For instance, in the Middle East, if other states besides Israel had nuclear weapons, the region would be more stable. But it would also brings risk as there would always be the small possibility of the use of nuclear weapons.[147] The possibility is low, but the risk is very high.

If nuclear weapons bring stability among nations because of the fear of their tremendous destructive force, does it mean that the world would become much safer than it is now if the spread of nuclear weapons continued among states in the international system?

For Sagan, the answer is no. The more the spread of nuclear weapons the closer the world comes to nuclear war or even nuclear apocalypse. Sagan uses organizational theory to explain the risks of nuclear proliferation. According to him, it is not states but military organizations that control the nuclear weapons in nuclear weapon states. These organizations, because of their possible biases or interests have the potential to display behavior which may cause deterrence failures or accidents that lead to nuclear war.[148] The second concern of Sagan is the control of nuclear weapons by new and would be proliferators - new nuclear weapon states are more prone to mismanage the control of their nuclear arsenals. Organizations in the state are not homogenous. They consist of self-interested actors and subunits. For instance, during the transition period of a rival state from a conventional world to the nuclear world, military officers may become strong supporters of preventive war against that state. Additionally, nuclear accidents that might cause the start of a nuclear war are always possible because of issues in organizational control in nuclear armed states. This is more problematic in new nuclear states. For instance, Sagan states that new nuclear

[146] According to this theory, when there is a balance between nuclear powers at the level of mutual vulnerability, this make each side act relatively free to engage in provocations and minor conflicts at lower levels of violence. Jervis, "Why Nuclear Superiority Doesn't Matter?"619.
[147] John J. Mearsheimer, "Nuclear-Armed Iran Would Bring 'Stability' But Risks," *PBS NewsHour*, July 9, 2012, accessed March 1, 2015, http://www.pbs.org/newshour/bb/world-july-dec12-iran2_07-09/.
[148] Scott D. Sagan, "More Will Be Worse" in *The Spread of Nuclear Weapons: A Debate Renewed*, by Scott D. Sagan and Kenneth N. Waltz, 2nd Revised edition edition (New York: W. W. Norton & Co., 2002), 47.

states have limited financial resources to establish the stable safety mechanisms necessary to avoid unintentionally starting a nuclear war.[149] The other problem is the transfer of nuclear materials to terrorist organizations or the stealing of nuclear materials by terrorists. For instance, 18 confirmed terrorist attempts to steal nuclear materials, mostly from Russia, were recorded by the International Atomic Energy Agency (IAEA).[150] In short, for Sagan, there were no nuclear wars between nuclear powers in the past does not mean that there will no nuclear wars in the future. Therefore, the spread of nuclear weapons among states should be worrisome for the international community.

On the other hand, Mearsheimer suggests controlled nuclear proliferation in the international political system. He agrees on the stabilising effect of nuclear weapons. They prevent war because they increase the costs of war. But just increasing the cost of war may not always deter the opponent from attacking. For example, the attack of Japan on Pearl Harbor was costly and risky but these factors did not dissuade Japan from attacking. But in a nuclear war, besides the increased cost of war, the probability of total destruction for both winner and loser is extremely high.[151] According to Mearsheimer, nuclear proliferation brings stability but at the same time it is risky. What are the risks of proliferation? For instance, as Sagan emphasized, a preventive war aimed at a would-be-proliferator is more likely coming from existing nuclear powers. The spread of nuclear weapons increases the probability of nuclear accidents, uncontrolled use and nuclear terrorism. For these reasons, he offers "a well-managed nuclear proliferation." This type of proliferation has two parts. The first part is "proliferation but not for all." The second part is about the management of nuclear proliferation. He claims that if today's nuclear powers assist newly nuclear powers, a reduction of the risks of nuclear use takes place and this leads to the establishment of a more secure and peaceful order. [152]

[149] Ibid., 71–75.
[150] Paul Doty, "The Minimum Deterrent & beyond," *Daedalus* 138, no. 4 (2009): 131.
[151] John J. Mearsheimer, "Nuclear Weapons and Deterrence in Europe" *International Security* 9, no. 3 (1984): 21.
[152] Mearsheimer, "Back to the Future," 36–37.

Waltz also argues that nuclear balancing brings stability among states, because these weapons are used to deter the opponent.[153] If a nuclear war occurs between two nuclear powers, no matter which is winning and which is losing, both sides face with the extreme damage incurred by nuclear blasts. This certain outcome makes the emergence of war less likely between nuclear powers. For him, another reason for nuclear stability is that nuclear weapons make states act more carefully. States which possess nuclear devices have to be cautious because any possible escalation may lead to nuclear war.[154] As far as considerations for preventive war, he explains that there are two stages in the nuclearization of states. The first is the early stage of nuclearization. In this stage it is clear that states have no nuclear capability. In the second stage, there is no certainty about whether a state has nuclear weapons or not. He claims that in the second stage, a preventive attack on a possible nuclear state is highly unlikely because of possible retaliation. Even in stage one, a preventive attack by an existing nuclear powers against a would-be nuclear state does not serve the long term interests of the attacker state. For instance, Israel's attack on Iraq in 1981 made Arab countries increase their support of Iraq and encouraged other nuclear hopeful states to acquire such weapons.[155] Regarding nuclear safety and the accidental use of nuclear weapons, in contrast to Sagan and Mearsheimer, Waltz claims that nuclear states have to take great consideration of their weapons because they don't want to risk putting themselves up against nuclear retaliation.[156] What about new nuclear states? According to Waltz, there is no need to worry about new nuclear states because "anybody who has nuclear weapons behaves like anyone else who's ever had them."[157]

In brief, according to neorealism, states are rational actors in the international system. The main aim of states is to survive. For Waltz, Nuclear weapons equilibrium brings stability among nations because states want to survive in the system. But Sagan argues that nuclear proliferation in the world brings states close to

[153] Kenneth N. Waltz, Nuclear Stability, American Primacy & Neorealism Revisited, interview by Jonathan Seiden, 2007, 1, accessed March 3, 2015, http://web.wm.edu/so/monitor/interviews/01-1/05-waltz.pdf.
[154] Waltz, *The Spread of Nuclear Weapons*, 8.
[155] Kenneth N. Waltz, "More May Be Better," in *The Spread of Nuclear Weapons: A Debate Renewed*, by Scott D. Sagan and Kenneth N. Waltz, 2nd Revised edition edition (New York: W. W. Norton & Co., 2002), 16–19.
[156] Kenneth N. Waltz, "Peace, Stability, and Nuclear Weapons," *Institute on Global Conflict and Cooperation*, 1995, 9, accessed March 3, 2015, http://escholarship.org/uc/item/4cj4z5g2.
[157] Betts, Sagan, and Waltz, "A Nuclear Iran" 143.

nuclear war. The fact is also that although since 1945, there has not been a great war between nuclear powers in the world, the use of nuclear weapons has always been a possibility.

2.4 Conclusion

This chapter has provided the theoretical basis and conceptual framework for the analysis part of this research study. In the first section of the chapter, the basic tenets of neorealism as a theoretical school in international relations and its key concepts were discussed. How neorealism explains the behavior of states under the anarchical international political system was examined. In the second section of the chapter, nuclear weapons in neorealist theory were explained. Nuclear weapons have still an essential place in world politics because of their main function as a deterrent force and they have persisted among states in the international political system. How the international environment affects the nuclear decisions of states and at the international system level, how nuclear weapons have changed the nature of the international structure have been examined.

As a conclusion, it could be argued that neorealist theory provides an extensive framework for the behavior of states and for understanding the role of nuclear weapons in international politics. For this research study, besides the theoretical framework, examining the nuclear history of North Korea is also necessary in order to understand the origins and intentions for the nuclear program in North Korea. Therefore, after presenting this theoretical framework, the next chapter will explore the historical background of North Korea's nuclear weaponization process.

3. THE HISTORICAL DEVELOPMENT OF NORTH KOREA'S NUCLEAR PROGRAM

3.1 Introduction

In this chapter, the historical development of North Korea's nuclear program will be examined. Nuclear technology is characterized as a dual-use technology. This means that it can be used for both civilian purposes and military purposes. For this reason, North Korea's nuclear program is also a pathway to reach nuclear weapons capability. While the nuclearization process of North Korea, along with its technical issues, is being outlined in this chapter, important diplomatic stages will also be discussed. The chapter consists of four sections. Developing nuclear weapons has been a long and bumpy road for North Korea with its limited capacity. In the first section, North Korea's early nuclear efforts and how it created nuclear infrastructure to produce plutonium as fissile material for nuclear weapons will be explained. The second section will explore the first North Korean nuclear crisis. North Korean nuclear activities became an object of international concern after it built its first nuclear research reactor indigenously in the late 1980s. The main reason for the concern was the possibility that North Korea had pursued a clandestine nuclear weapons program. The worst case scenario for the international community was that North Korea had already developed nuclear explosive devices. In this context, to understand the real intention of North Korea, the international community began to put pressure on North Korea. In addition to that, statements from the IAEA in which it claimed that there were serious discrepancies between the North's official declarations and its activities also increased international pressures on it. Thus, the nuclear crisis emerged. At the end of the crisis, North Korea pledged to suspend its nuclear activities. In the third section, the second nuclear crisis that emerged when the North withdrew from the Non-Proliferation Treaty in 2003 will be discussed. In the last section of the chapter, nuclear tests conducted by the North which were viewed as an indication of nuclear weapons development and ballistic missile technology as a method of delivery of nuclear warheads will be analyzed.

3.2 Early efforts and developments before the first nuclear crisis

3.2.1 The Inception

Early nuclear activities in North Korea can be traced back to late 1940s, even before the establishment of North Korea .[158] In 1947, the Soviet Union conducted a geological survey of nuclear related material deposits in North Korea. From 1949 to 1950, the Soviet Union, which detonated its first nuclear test in 1949, imported nuclear related materials such as monazite, tantalum, and uranium ore from North Korea.[159] This was the beginning of nuclear relations between the Soviet Union and North Korea.

Actually, the Soviet Union was major contributor to the development of North Korea's nuclear program. As mentioned in the previous chapter, if a state wants to develop its own nuclear weapon (this is also true for the peaceful use of nuclear energy), besides its political motivation, it also needs to have the nuclear infrastructure and technical know-how in nuclear studies. In this context, the Soviet Union played a very important role both in the improvement of technical capabilities and in the education and training of nuclear specialists who worked and studied in the nuclear program.

In 1952, while the Korean War[160] (1950-1953) was raging on the Korean Peninsula, North Korea signed an agreement with the Soviet Union titled the "Agreement between the Government of the USSR and the Government of the DPRK on the Education of Citizens of the DPRK in the USSR Civil Higher Education

[158] With the unconditional surrender of Japanese forces at the end of the World War 2, Japanese colonial rule (1910-1945) in Korea ended. After Japanese rule, the Korean Peninsula which was occupied by Soviet forces from the north and United States forces from the south was divided along the 38th Parallel between North and South. While the Republic of Korea was established on August, 1948 in the southern part of the peninsula, with the initiative of Soviet Union, North Korea was formally established on September 9, 1948 under the rule of Kim Il Sung.

[159] Alexandre Y. Mansourov, "The Origins, Evolution, and Current Politics of the North Korean Nuclear Program," *The Nonproliferation Review* 2, no. 3 (1995): 25.

[160] The Korean War started when North Korea invaded the South on June 25, 1950 in order to reunify the Korean Peninsula by the use of force (However, North Korean sources claims that South Korean forces first attacked the North). The unified forces of the United Nations consisted of the United States, South Korea, Turkey and another fourteen nations offended by the attack of the North. Later during the war, China also intervened to protect North Koreans from a Southern invasion. The war was over with an Armistice agreement in July 27, 1953. The new ceasefire was drawn across the thirty–eight parallel which was not far from the line before the war. The sides also agreed to pull back their forces two thousand meters from the cease fire lines which established the demilitarized zone (DMZ). Don Oberdorfer, *The Two Koreas: Revised And Updated A Contemporary History*, Rev. & upd. edition (New York: Basic Books, 2001), 8-10.

Establishments". This agreement allowed North Korean students to finish their higher education in Soviet universities.[161]

In the same year, North Korea made important investments in nuclear studies. The DPRK National Academy of Sciences which becomes the main center of scientific and technical activities in North Korea was established by Pyongyang.[162] In 1952, an Atomic Energy Research Institute was also established under the Academy of Sciences.[163]

On December 8, 1953 the President of the United States of America, Dwight D. Eisenhower made his famous speech "Atoms for Peace" in the United Nations General Assembly.[164] The Atoms for Peace initiative proposed sharing nuclear science and technology with non-nuclear countries for peaceful use only. In this context, the United States provided technological support in the nuclear field to various nonnuclear countries such as Israel, Taiwan, South Korea, Iran and South Africa.[165] As with the United States, the Soviet Union was also keen on sharing nuclear technology among communist states, especially from the countries of Eastern Europe. In this context, in July 1955, a conference on the peaceful use of nuclear energy was held in Moscow and North Korean scientists and researchers from the Academy of Sciences were in attendance.[166] On March 26, 1956 in the Soviet town of Dubna near Moscow, the United Institute for Nuclear Research (UINR)[167] was

[161] Alexander Zhebin, "A Political History of Soviet-North Korean Nuclear Cooperation," in *The North Korean Nuclear Program: Security, Strategy and New Perspectives from Russia*, ed. James Clay Moltz and Alexandre Y. Mansourov (New York: Routledge, 1999), 28.

[162] The Academy of Sciences has a very important place in the nuclear studies of North Korea and reports directly to the president's cabinet. James E. Hoare, *Historical Dictionary of Democratic People's Republic of Korea*, 2nd Edition edition (Scarecrow Press, 2012), 36.

[163] "Atomic Energy Research Institute | NTI," *NTI: Nuclear Threat Initiative*, accessed April 5, 2015, http://www.nti.org/facilities/776/.

[164] In his historical speech, President Eisenhower made a proposal for the establishment of an international agency to coordinate and control the peaceful use of nuclear energy. After this speech, the United States enacted the Atomic Energy Act of 1954 for the sharing of nuclear energy with nonnuclear states. The first agreement under this act was signed between the United States and Turkey in May 1955. For detailed information David Fischer, *History of the International Atomic Energy Agency The First Forty Years* (Vienna: Intl Atomic Energy Agency, 1997). accessed April 14, 2015, http://www-pub.iaea.org/MTCD/publications/PDF/Pub1032_web.pdf.

[165] Balazs Szalontai and Sergey Radchenko, "North Korea's Efforts to Acquire Nuclear Technology and Nuclear Weapons: Evidence from Russian and Hungarian Archives," Working Paper, Cold War International History Project (Washington, D.C.: Woodrow Wilson International Center, 2006), 2, accessed April 14, 2015 http://www.wilsoncenter.org/about-nkidp.

[166] Walter C. Clemens, "North Korea's Quest for Nuclear Weapons: New Historical Evidence," *Journal of East Asian Studies* 10, no. 1 (March 1, 2010): 129.

[167] UINR or "Joint Institute For Nuclear Research" was founded as an inter-governmental scientific research organization and was registered with the United Nations in 1957. For details see "Joint

established to cooperate in science and research activities among member states. North Korea became one of the founding members of this institute by signing "the Agreement on the Establishment of the Institute and its Charter." This agreement also gave an opportunity to North Korea for training and joint work in the Institute. [168]

In 1956, another important development with effect on the nuclear program took place in the North Korean administration. A political challenge toward Kim Il Sung by opposition groups in North Korea supported by China and the Soviet Union emerged. The opposition movement failed and was immediately purged by Kim Il Sung.[169] Responding to this failed initiative, and keen to redeem itself, Moscow invited thirty North Koreans to study nuclear research at the UINR in Dubna starting in late 1956.[170] Hence, around 250 North Korean scientists have trained in experimental and theoretical studies in the field of nuclear technology at the institute.[171]

In September 1959, North Korea signed a significant agreement on nuclear issues with the Soviet Union. The two states committed to cooperate in the peaceful use of nuclear energy and signed contracts named "Series 9559", which ensured Soviet technical assistance to the DPRK for geological studies, the construction of a nuclear scientific research center in Yongbyon [172] (which the Soviets called 'Object 9559', and North Korea named the 'Furniture Factory'), project financing, and training for North Korean atomic experts to be work at the Yongbyon Atomic Complex.[173] Additionally, the Soviet Union pledged to transfer a small research type nuclear

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Institute For Nuclear Research," *Joint Institute For Nuclear Research*, accessed April 14, 2015, http://www.jinr.ru/section.asp?sd_id=39.

[168] Zhebin, "A Political History of Soviet-North Korean Nuclear Cooperation," 28–29.

[169] After the death of Stalin, in 1953, at the Twentieth Party Congress of the Communist Party of Soviet Union, in February,1956 Khrushchev initiated the process of de-Stalinization by denunciating the cult personality of Stalin. He also introduced "a peaceful coexistence" policy with western countries. These changes were disliked by Kim Il Sung. In August 1956, At the Plenum of Korean Worker's Party, an opposition campaign was organized against Kim Il Sung leadership. For details see Nobuo Shimotomai, "Kim Il Sung's Balancing Act between Moscow and Beijing, 1956-1972," in *The Cold War in East Asia, 1945-1991*, ed. Tsuyoshi Hasegawa (Washington, D.C. : Stanford, Calif: Stanford University Press, 2011), 122–123.

[170] Alexandre Y. Mansourov, "North Korea's Road to the Atomic Bomb," *International Journal of Korean Unification Studies* 13, no. 1 (2004): 31–32.

[171] Zhebin, "A Political History of Soviet-North Korean Nuclear Cooperation," 29.

[172] Yongbyon was located nearly 90 km northeast of Pyongyang. The place was allegedly used by the Japanese in their covert nuclear research activites during the World War Two and became the main center of the nuclear program.

[173] Mansourov, "North Korea's Road to the Atomic Bomb," 32.

reactor and related materials to North Korea. Although Kim Il Sung sought assistance from the Soviet Union for the nation's nuclear development, the Soviet Union was not the only country that had dealings with North Korea's nuclear program. China was the other main supporting country for North Korea in its nuclear development. In the late 1950s, a group of North Korean nuclear scientists were sent to China for training at nuclear related facilities.[174]

In early 1960s, Moscow sent thirty nuclear scientists to assist North Korea in establishing the Yongbyon Nuclear Scientific Research Complex.[175] Subsequently, on November 1962, the Atomic Energy Research Center was established by Pyongyong.[176] The construction of an IRT- 2000 2 MWt [177] research reactor which aimed to facilitate basic nuclear research and to produce small quantities of isotopes for medical and industrial uses, and a radiochemical laboratory began at Yongbyon with the help of the Soviet Union on March 1963, and the reactor became operational in 1965. The capacity of the reactor was later increased to 4MWt in 1974 and to 8MWt in 1987.[178]

The Fifth Korean Working Party (KWP) Congress was held in 1970 and at the party congress, the building of nuclear power plants was emphasized as a means of increasing electricity production in the country.[179] The oil crisis that occurred in 1973 also necessitated such an initiative for North Korea.[180] On January, 1974 the Atomic Energy Act was passed by the Supreme People's Assembly in order to control and coordinate activities in the nuclear field effectively. The act also established the Atomic Energy Bureau[181] under the Cabinet of Ministers to supervise and guide all

[174] Mansourov, "The Origins, Evolution, and Current Politics of the North Korean Nuclear Program," 26.
[175] Mansourov, "North Korea's Road to the Atomic Bomb" 33.
[176] Pollack, *No Exit*, 51.
[177] The capacities of nuclear reactors are measured either in terms of MWt (megawatts of thermal energy) or Mwe (megawatts of electricity).
[178] The IRT–2000 Nuclear Research Reactor is a pool–type reactor that uses a mixture of fuel elements of different level enriched uranium, and uses light water as moderator and cooler. IISS, *North Korean Security Challenges: A Net Assessment*, ed. Mark Fitzpatrick (London: The International Institute for Strategic Studies, 2011), 94.
[179] During 1970s, electricity production could not meet the country's energy needs while the North had a growing industry. For details see Valentin I. Moiseyev, "The North Korean Energy Sector," in *The North Korean Nuclear Program: Security, Strategy and New Perspectives from Russia*, ed. James Clay Moltz and Alexandre Y. Mansourov (New York: Routledge, 1999), 51-60.
[180] Pollack, *No Exit*, 92–93.
[181] In 1986, this institution was transformed into the Ministry of Atomic Energy Industry under the Administrative Council.

nuclear research and development at the Yongbyon Scientific Nuclear Research Complex, as well as various related nuclear research institutes and activities under the National Academy of Sciences.[182]

In the 1970s, South Korea initiated a secret nuclear weapons program.[183] To respond to this development, Pyongyang took several decisions. For Pyongyang, one way to persuade the South to halt its clandestine nuclear program was to put international pressure on South Korea. On September, 1974, North Korea joined the International Atom Energy Agency (IAEA). Thus, while the nuclear weapon program of the South was underway, North Korea appeared to be a country complying with international initiatives designed to prevent the proliferation of nuclear weapons.[184]

North Korea's membership of the IAEA was one of the most important developments in its nuclear program because on the one hand, by joining the IAEA, North Korea signed "Type 66" safeguard agreement with the Agency in which it committed to the verification of the Soviet supplied IRT- 2000 2 MWt research reactor and critical assembly by IAEA. On the other hand, the IAEA database on nuclear research and studies was opened up for North Korea. Choi Hak Gun[185] was appointed as a counselor to North Korea's office at the IAEA in Vienna, Austria, in 1975. It is reported that during his four-year terms, Dr. Choi used the IAEA library to collect information about the design of nuclear reactors and other nuclear technologies.[186] This would help North Korea's development of the scientific and technological 'know-how' that is necessary to build an "indigenous" nuclear reactor for their nuclear program.

Although North Korea was assisted by Soviet Union in its nuclear research and studies, Kim Il Sung did not want to become depended on the Soviets. On April 18-26, 1975, he visited Beijing, China. During his visit, He talked with the Chinese Government about his interest in advancing technical cooperation in the nuclear field between the two countries. As a result, an agreement took place between the two sides on scientific exchange and joint training for atomic scientists and researchers.

[182] Mansourov, "North Korea's Road to the Atomic Bomb," 42–43.
[183] The reasoning and developments of South Korean secret nuclear program and reactions of North Korea will be detailed in the next chapter.
[184] Mazarr, *North Korea and the Bomb*, 29.
[185] In 1986, He was assigned as atomic energy and industry minister in North Korea.
[186] Christoph Bluth, *Crisis on the Korean Peninsula* (Washington, D.C: Potomac Books, 2011), 113.

Later, in March 1977, the WPK Party Secretary Kang Song San and a delegation of 27 North Korean nuclear and missile specialists organized a visit to the Lop Nor nuclear test and research facility in the Xinjiang Uighur Autonomous Region of China.[187]

3.2.2 The Rise of the Nuclear Program

Major advancements in North Korea's nuclear program took place in the 1980s. The essential facilities for an indigenous nuclear program were completed during this period. North Korea started large scale mining activities at locations near Sunchon and Pyongsan in the late 1970s.[188] As Figure 1 shows, mining uranium is the first step in nuclear energy production and the building of nuclear weapons.

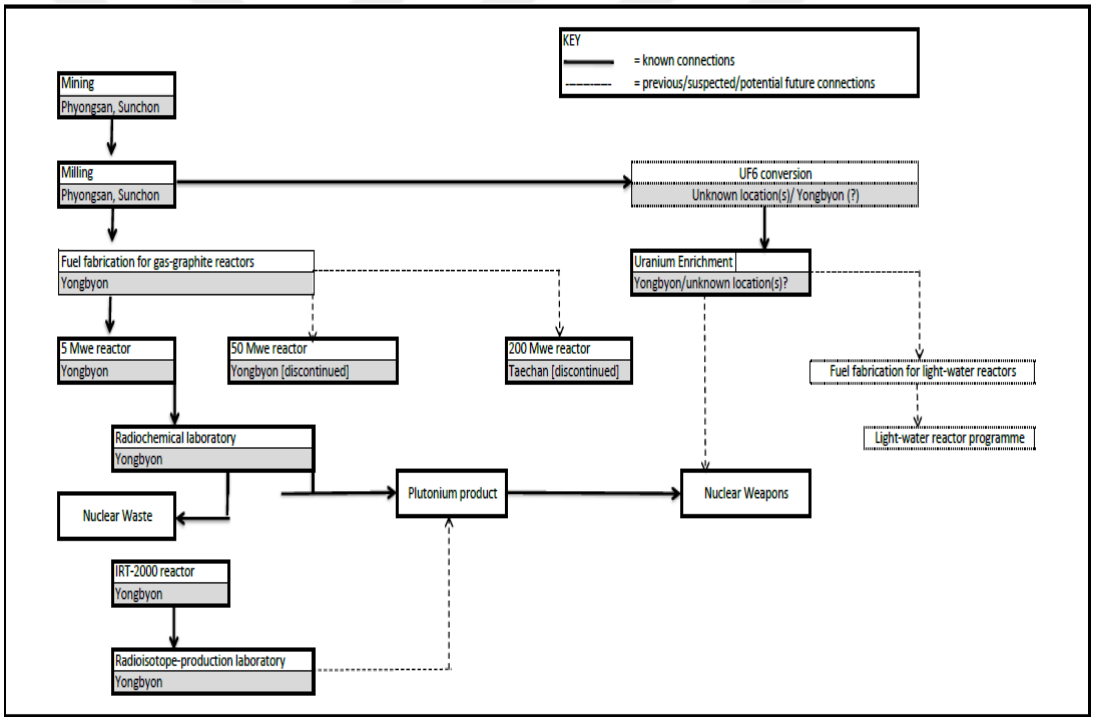

Figure 1: North Korea's Nuclear Activities

IISS, North Korean Security Challenges, 96.

In April 1982, a uranium milling facility also called a uranium concentrate facility, located in Pakchon began to operate for the production of "yellow cake" from raw

[187] Mansourov, "North Korea's Road to the Atomic Bomb" 45.
[188] IISS, *North Korean Security Challenges*, 96.

uranium ore.[189] To refine "yellow cake" and to produce uranium fuel elements to use in its reactors North Korea completed a substantial facility at Yongbyon Nuclear Complex between the years of 1980-1985.[190] The construction of another important facility, a "radiochemistry laboratory" at Yongbyon began in 1985 – 1986. The objective of this facility was to separate plutonium from spent fuel, another name for this type of laboratory is a "plutonium reprocessing plant."[191]

The key facility in North Korea's nuclear program is its indigenously developed 5 MWe (25 MWt) research reactor located in the Yongbyon Nuclear Complex. The construction of the reactor began in 1980 and became operational from 1986. This experimental power reactor is gas-cooled, graphite moderated and based on the gas graphite design of a Calder Hall[192] type plutonium production reactor.[193] Here, two questions related to the establishment of this research reactor should be asked: what were the reasons for building this type of reactor and how could North Korea could build 5 MWe nuclear power reactors indigenously? The type of reactor has many advantages, especially for countries with limited capabilities like North Korea. First of all, the reactor uses natural uranium as a fuel and in a 2012 assessment by the South Korean Ministry of Unification, it was stated that "North Korea is also known to have about 4 million tons of uranium in recoverable deposits".[194] The second advantage is its carbon-dioxide gas cooling system that uses graphite (which is also available in North Korea) and requires no heavy water.[195] Additionally, according to Robert Alvarez who served as senior policy adviser in the Energy Department of the United States of America from 1993 to 1999,[196] the 5 MWe reactor, with its carbon-dioxide gas cooling system produces plutonium more efficiently than water-cooled graphite reactors.[197]

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[189] Mansourov, "North Korea's Road to the Atomic Bomb," 47.
[190] IISS, *North Korean Security Challenges*, 96.
[191] Ibid., 100.
[192] The Calder Hall reactor was a plutonium production reactor constructed by the UK in 1950s. The reactor was built by UK for both plutonium production and generation of electricity. For details see "Calder Hall Nuclear Station," *The Engineer*, 464. October (1956).
[193] IISS, *North Korean Security Challenges*, 96.
[194] *2012 Understanding North Korea* (Seoul: The Institute for Unification Education, Ministry of Unification, 2012), 132.
[195] "Yongbyon 5MWe Reactor | NTI," *NTI: Nuclear Threat Initiative*, -92, accessed April 11, 2015, http://www.nti.org/facilities/766/.
[196] During this period of time, he visited Yongbyon Nuclear Complex in North Korea.
[197] Robert Alvarez, "North Korea: No Bygones at Yongbyon.," *Bulletin of the Atomic Scientists*, July 2003, 41.

Thus, with this old style nuclear reactor, North Korea could manage its nuclear program without any help or intervention from foreign powers. At this point, the second question about the construction of the reactor rises. How could North Korea build a research reactor without any significant foreign assistance? Under one scenario, Choi Hak Gun who worked at the IAEA, may have selected this type of reactor from other options available in the database[198] which was opened to North Korea when it joined the IAEA for its advantageous properties, mentioned above.[199] Another possibility considers that the first power reactor of Japan, Tokai reactor, was also designed as a Calder-Hall type reactor and the Korean Association of Science and Technology which is the organization of ethnic Korean scientists who live in Japan might have supplied the basic information about the Japanese reactor to the North. However, According to Jonathan D. Pollack who is a specialist on East Asian international politics and security, the latter is a small possibility because the 5 MWe reactor in Yongbyon and the Tokai reactor have some notable differences, the most significant being that the Japanese reactor was designed for power generation but not for military purposes.[200]

Theoretically, the 5 MWe reactor could produce around 7.5 kilograms (kg) of weapons-grade plutonium annually (enough for one bomb), if it operated for 300 days per year. In addition to it, in 1984, the North also began construction of a 50-MWe reactor which theoretically could produce around 55 kg of weapons-grade plutonium annually (about ten bombs) at Yongbyon and later a 200-MWe reactor which could produce about 220 kg of weapons-grade plutonium at Taechon.[201] However, these two large reactors were never completed.

3.2.3 North Korea Signs the NPT

In the late 1970s and early 1980s, North Korea continued to seek nuclear assistance from the Soviet Union and Eastern European countries to improve its knowledge in nuclear technologies and for direct technological transfer in the nuclear field.[202] In

[198] The library of the IAEA includes technical information on nuclear reactors and their designs which have already been constructed in different countries.
[199] Mansourov, "North Korea's Road to the Atomic Bomb," 48.
[200] Pollack, *No Exit*, 95.
[201] IISS, *North Korean Security Challenges*, 96–97.
[202] Szalontai and Radchenko, "North Korea's Efforts to Acquire Nuclear Technology and Nuclear Weapons: Evidence from Russian and Hungarian Archives," 65–70.

1984, Kim visited the Soviet Union to meet with Soviet Leader Konstantin Chernenko. At the meeting, Chernenko proposed a plan to build four light water reactors (LWR) with a capacity of 1700 MWe and agreed to new weapons transfers to North Korea. However, Chernenko died on March 10, 1985 and Mikhail Gorbachev succeeded him as General Secretary of the Communist Party of the Soviet Union. [203]

In the meantime, one of United States' intelligence satellites photographed North Korea and detected the construction of a second reactor at Yongpyong.[204] However, according to Central Intelligence Agency (CIA) documents from the early 1980s, there were no concerns in the intelligence reports about North Korea's nuclear facilities and whether they were peaceful use or military purposes. But, from the mid-1980s, concerns increased with the advancement of North Korea's nuclear program.[205] To resolve the uncertainty and ambiguity surrounding North Korea, the United States, which was concerned with developments in Yongbyon, pressed Moscow to convince North Korea to join the NPT, so that international inspections would take place at Pyongyang's nuclear facilities. Consequently, Mikhail Gorbachev forced North Korea to sign the NPT for approval of the reactor agreement. At the end, North Korea signed the NPT on December 12, 1985, then two weeks later; Moscow and Pyongyang signed an agreement on the power reactor project.[206]

3.3 The First Nuclear Crisis

3.3.1 The Origins of the Crisis

According to article III of the NPT, a country that joins the NPT has to sign the safeguard accords with the IAEA within eighteen months.[207] However, in the North Korean case, instead of a "type 153" agreement which contains full-scope

[203] Pollack, *No Exit*, 94.
[204] American satellite spying over North Korea began in 1961. For details see Jeffrey Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea*, Reprint edition (New York: W. W. Norton & Company, 2007), 346-348.
[205] For declassified CIA documents Robert A. Wampler, "North Korea and Nuclear Weapons: The Declassified U.S. Record," *The National Security Archive*, 2003, accessed April 5, 2015. For declassified CIA documents, http://nsarchive.gwu.edu/NSAEBB/NSAEBB87/.
[206] However, these nuclear reactors could not be completed because of North Korea's declining relations with Moscow and the deterioration of Soviet economy. Oberdorfer, *The Two Koreas*.254,255.
[207] "Nuclear Non-Proliferation Treaty."

inspections, the IAEA incorrectly sent a "type 66" agreement which covers limited facilities in the North. Therefore, North Korea did not sign the IAEA safeguards within eighteen months. In June 1987, the correct type of agreement was sent to North Korea by the IAEA but another eighteen months passed without signing of the agreement.[208]

However, until the beginning of 1992 when North Korea concluded the safeguard agreements with the IAEA, the following important developments that have had a great impact on the advancement of North Korean nuclear program took place.

After the end of the Cold War, on September 27, 1991 the President of the United States of America, George Bush announced that the United States would unilaterally withdraw all naval and land-based tactical nuclear weapons deployed abroad. Responding to this, On December 18, President Roh Tae Woo of South Korea publicly declared that "there do not exist any nuclear weapons what so ever anywhere in South Korea".[209] Another move that came from the United States and South Korea was the cancellation of Team Spirit exercises[210], organized by the United States and South Korean military forces since 1976.[211] These developments in particular caused a rapprochement of North and South. On December 31, the two Koreas agreed on a "Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula". In this declaration, the North and South Koreas committed to not "test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons" and not to "possess facilities for nuclear reprocessing and enrichment."[212] Finally, North Korea signed the safeguards agreement that opens nuclear facilities for inspection, on January 30, 1992.[213]

After the ratification of the agreement by People's Assembly, North Korea submitted a report on its nuclear materials to the IAEA on May 4, 1992. One week later, Han Blix, The General Director of the IAEA organized a visit to North Korea. The delegation visited three nuclear reactors (only the 5 MWe experimental reactor was

[208] Mazarr, *North Korea and the Bomb*, 41.

[209] Wit, Poneman, and Gallucci, Going Critical, 10.

[210] This is one of the largest military exercises in the world. The United States' nuclear aircraft also participate in these exercises which take place on Korean Peninsula.

[211] Leon V. Sigal, *Disarming Strangers* (Princeton, N.J.: Princeton University Press, 1999), 30.

[212] Ibid., 32.

[213] Ibid., 32.

operating) and "the Radiochemical Laboratory" at Yongpyong Nuclear Complex. During this informal trip, North Korean officials said that they separated nearly 100 grams of plutonium in 1990 in this uncompleted facility.[214] In 1992, six official inspections took place by IAEA officials in North Korea.

Although Hans Blix announced during a news conference on May that there were no problems encountered in the inspection of North Korea, there were two main issues that caused the deterioration of North Korea - IAEA relations.

The first issue was about the plutonium that was separated before the inspections. As mentioned above, North Korean officials declared that only a small amount of plutonium was separated from damaged fuel rods that came from the 5 MWe reactor in 1990. In order to confirm this statement, the IAEA took samples of separated plutonium and analyzed them in the Agency's laboratories located in Europe and the United States.[215] As a result, inconsistencies appeared between the declarations of North Korean nuclear officials and the IAEA analysis. The first discrepancy was related to the time of reprocessing of plutonium at Yongbyong Nuclear Complex. In contrast to North Korean statements, the findings of IAEA suggested that the reprocessing had occurred on three separate occasions in 1989, 1990, and 1991.[216] The second discrepancy between the statements of North Korea and the IAEA allegations was the total amount of separated plutonium at Yongbyong. For the IAEA, the findings of inspections demonstrated that North Korea separated a larger amount of plutonium than it stated.[217]

North Korea did not accept these allegations and attempted alternate explanations of the IAEA findings. To clarify these inconsistencies, North Korean officials stated that a small amount of plutonium had been reprocessed in 1975 from the IRT-2000 reactor and that the waste from this separation was mixed with the waste of the 1990 reprocessing. But these North Korean explanations were not enough to persuade the IAEA.[218]

[214] David Albright, "North Korean Plutonium Production," *Science & Global Security* 5, no. 1 (1994): 65.
[215] Ibid., 66.
[216] IISS, *North Korean Security Challenges*, 101.
[217] Albright, "North Korean Plutonium Production," 67.
[218] IISS, *North Korean Security Challenges*, 101.

The second concerned issue that affected the situation of North Korea in the NPT involved two suspected sites which were not submitted to the IAEA agency in the initial report by North Korea. These two suspected facilities were discovered by United States spying satellites. The first site was near the IRT 2000 reactor and intelligence photos indicated that this construction site was covered by earth before the inspection team arrived.[219] The second suspected facility named "Building 500" was a huge facility that was located near the reprocessing plant. Moreover, intelligence reports claimed that there were connections leading between the reprocessing plant and this huge building.[220]

The United States shared the intelligence information with Hans Blix. After learning that there were two undeclared nuclear facilities, he made an informal request to the North to open these facilities for inspection.[221] However, North Korea refused to allow inspection of these sites, as, according the North, the facilities were military sites and were not related to the nuclear program. Therefore they did not include nuclear waste.[222] These developments pushed the IAEA to a take more tough stance on North Korea. On February 9, 1993, the IAEA formally requested North Korea to allow special inspections of two suspected sites in accordance with Articles 73 (b) and 77 of the Safeguards Agreement which gives the IAEA the right to undertake special inspections.[223] North Korea again refused this request and emphasized the conventional military use of these two sites.

According to one of the experts in modern Korean history, Bruce Cumings, one important reason why the Agency insisted on the implementation of special inspection was the failure of the Agency in Iraq.[224] For him, North Korea strongly rejected the demands because firstly, these allegations were based on the intelligence

[219] Mazarr, *North Korea and the Bomb*, 94–95.
[220] Ibid., 95.
[221] Richelson, *Spying on the Bomb*, 520–521.
[222] Paul Leventhal and Steven Dolley, "The North Korean Nuclear Crisis," *Medicine & Global Survival* 1, no. 3 (2003): 166.
[223] Matthias Dembinski, "North Korea, IAEA Special Inspections, and the Future of the Nonproliferation Regime," *The Nonproliferation Review* 2, no. 2 (Winter 1995): 32,34.
[224] Iraq as a party to the NPT, tried to develop nuclear weapons before the first Gulf War. However, the IAEA inspectors could find the secret nuclear program after the war. For details Etel Solingen, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton: Princeton University Press, 2007), 143-164.

reports of a "hostile" United States. Secondly, for North Korea, if they granted these demands, it could cause the opening of all military facilities to an adversary state.[225]

Although the real intentions of North Korea were not clear to the international community, some intelligence reports revealed that North Korea has already developed nuclear devices. For instance, a secret Soviet KGB document of February 22, 1990 which was published by Russian newspaper Argumenty I Fakty (Arguments and Facts) on March 10, 1992 made the following assessment:[226]

> From a reliable source, the KGB has received information that scientific and experimental design work on the development of atomic weapons is actively continuing in the DPRK. According to this data, the development of the first atomic explosive device has been completed at the Institute of Nuclear Research of the DPRK, located in Yongbyon.[227]

Besides intelligence reports, there was also strong evidence that supported the idea that North Korea had military purposes in mind with its nuclear program. In 1989, it was reportedly revealed that North Korea has built a high-explosive test site at Yongbyon and highly explosive devices were being tested on that site. Another indicator disturbing the international community was that nuclear North Korea's nuclear reactors have no connections to power grids. If the nuclear program was for civil energy use only, then why were they were not connected?[228] Furthermore, North Korea's ballistic missile program, which will be detailed later, also increased international suspicions about its nuclear activities. However, until its official announcement in 2005, the North never admitted to its nuclear weapons program.

On February 22, the IAEA Board of Governors met to discuss North Korea's inspections and the assessment of two concealed sites. During the meeting, the United States shared intelligence information with the member states of the Agency. Nearly one dozen United States spying satellite photographs of North Korean facilities at Yongbyon were presented to a closed session of the IAEA Board of Governors. The senior North Korean representative at the meeting, Ho Jin-yun, said

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[225] Cumings, *North Korea*, 66–67.

[226] Larry A. Niksch, "North Korea's Nuclear Weapons Program" (Congressional Research Service, 2003), 8, accessed April 1 2016, http://nsarchive.gwu.edu/NSAEBB/NSAEBB87/nk24.pdf.

[227] Vladimir F. Li, "North Korea and the Nuclear Nonproliferation Regime," in *The North Korean Nuclear Program: Security, Strategy and New Perspectives from Russia*, ed. James Clay Moltz and Alexandre Y. Mansourov (New York: Routledge, 1999), 144.

[228] Mazarr, *North Korea and the Bomb*, 39,45.

that the photographs were not real.[229] For the first time, information from the intelligence of a member state was used in the history of the Agency.[230]

On 25 February, the Board adopted the resolution GOV/2636 in a closed session. According to this resolution, North Korea had to allow inspectors access to the two disputed sites within one month. It was also stated that access to the sites was "essential and urgent." The Board also made it clear that if North Korea did not comply with the resolution, the issue would be sent to the UN Security Council for international sanctions or other actions.[231] But North Korea again refused to implement the resolution.

In the meantime, another influential event occurred during talks at the Joint Declaration of the Denuclearization of the Korean Peninsula. While South Korea was trying to implement the obligations of the declaration by suggesting establishing regular inspections on both sides' nuclear facilities, North Korea demanded to inspect the American military bases in the South to confirm for itself that all nuclear weapons had been removed from the Korean Peninsula. North Korean Ambassador-at-Large O Chang Rim stated that "If and when South Korea agrees to inspections of U.S. Military installations as we demand, a way will be found to resolve the question of mutual inter-Korean nuclear inspections."[232] But South Korea and the United States refused to open all military facilities to the North.

Moreover, the situation on the Korean Peninsula would worsen significantly with two further important developments.

The first development was the appearance of an alleged spy ring in South Korea which was organized by the North. On September 1992, The National Intelligence Agency of South Korea (ANSP) announced that a major ring of North Korean agent group was uncovered which had worked for the North for 36 years in South Korea.[233] Although North Korea did not accept these accusations, the incident undermined the talks on the denuclearization of Peninsula between the North and South.

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[229] Oberdorfer, *The Two Koreas*, 277.
[230] Joel S. Wit, Daniel B. Poneman, and Robert L. Gallucci, *Going Critical: The First North Korean Nuclear Crisis* (Washington, D.C.: Brookings Institution Press, 2005), 20.
[231] Oberdorfer, *The Two Koreas*, 278.
[232] Mazarr, *North Korea and the Bomb*, 87.
[233] From Times Wire Services, "N. Korean Spy Ring Broken, Seoul Reports," *Los Angeles Times*, September 8, 1992, accessed April 25, 2015, http://articles.latimes.com/1992-09-08/news/mn-232_1_north-korea.

The second issue that led to increased tensions on the Peninsula was the Team Spirit Exercises that would be held by South Korea and the United States in 1993. Although the exercises were suspended in 1992 as mentioned above, at the United States-South Korea Security Consultative Meeting in early October, 1992, South Korean and United States military officials decided to conduct Team Spirit in 1993.[234] For North Korea, the exercises represented a direct nuclear threat to their country. Therefore, it reacted angrily and the exercises were called, "a criminal act intended to drive North-South dialogue into a crisis."[235] The decision to go ahead with the exercises worsened relations between the two Koreas seriously. On November 27, 1992, at the Denuclearization of the Korean Peninsula meetings, with North Korea demanding the cancellation of Team Spirit exercises, South Korea requested that North Korea allow at least one inspection before cancellation of the exercises. Because of this deadlock, talks between the North and the South collapsed.[236]

After North Korea signed safeguard accords with the Agency in 1992, contrary to expectations, pressure on North Korea over the nuclear issue was increased further. On February 9, the IAEA, for the first time in its history, demanded special inspections for North Korean facilities. It was also announced that the starting date of Team Spirit would be March 9, on schedule. A day before, on March 8, 1993 Kim Jong Il, as Supreme Military Commander, announced a state of readiness for war and ordered all the population and the army to prepare for war.[237]

A historical turning point thus occurred on March 12, 1993 when North Korea declared its withdrawal from the NPT in order to defend "its supreme interest". The North Korean nuclear crisis had begun.

3.3.2 Developments During the Crisis

Since 1970, when the NPT had entered into force, a signatory state had withdrawn from the agreement, in accordance with article X of the NPT, for the first time

[234] Mazarr, *North Korea and the Bomb*, 90–91.
[235] Sigal, *Disarming Strangers*, 46.
[236] "Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula | NTI," *NTI: Nuclear Threat Initiative*, accessed April 25, 2015, http://www.nti.org/treaties-and-regimes/joint-declaration-south-and-north-korea-denuclearization-korean-peninsula/.
[237] Mazarr, *North Korea and the Bomb*, 98.

[238].Thus, the withdrawal of North Korea from the NPT would be effective on June 12, 1993. The Minister for Foreign Affairs of the DPRK, Kim Yong Nam sent a letter explaining the situation to the United Nations Security Council on March 12, 1993. In the letter, the Minister stated that recent developments had endangered North Korea's "supreme interests." He pointed out that

> The United States together with South Korea has resumed the "Team Spirit" joint military exercises, a nuclear war rehearsal, threatening the DPRK, and instigated some officials of the IAEA Secretariat and certain member States to adopt an unjust "resolution" at the meeting of the IAEA Board of Governors on 25 February 1993 demanding us to open our military sites that have no relevance at all to the nuclear activities, in violation of the IAEA Statute, the Safeguards Agreement and the agreement the IAEA had reached with the DPRK.[239]

On 18 March, North Korea's deputy UN ambassador in New York, Ho Jong stated the conditions for revoking of their decision. These conditions were the permanent termination of Team Spirit Joint Military Exercises, the opening of "US nuclear military facilities" in South Korea to inspection, an assurance that United States would not attack North Korea and the restoration of IAEA neutrality.[240] From this statement, it could be understood that a way for negotiation was still open. On the same day, the Board of Governors of the IAEA held session and issued a resolution in which it was stated that although North Korea had decided to withdraw from the NPT according to article X of the treaty, the safeguards agreement was still in force for three months. Therefore, the agency insisted that North Korea open the two "suspected" sites for inspections within one month. The deadline was March 31 for the Agency. However, in this period of time, North Korea did not allow the IAEA to enter the two facilities for inspections. Accordingly, on April 1, the IAEA found North Korea in noncompliance and reported the issue to the Security Council of United Nations (UNSC).[241] Resolution 825 was adopted by the UNSC on May 11,

[238] "Nuclear Non-Proliferation Treaty." Article X of the treaty states that "Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests."
[239] "12 Mar 1993 Letter from the DPRK to the President of the UNSC" *The DPRK Document Archive*, accessed May 24, 2015, http://www.caledavis.com.
[240] Wit, Poneman, and Gallucci, *Going Critical*, 33–34.
[241] Mazarr, *North Korea and the Bomb*, 112–113.

1993. In the resolution, North Korea was urged to reconsider its decision and it was emphasized that the North had to comply with the safeguard agreements.[242]

With the adoption of this resolution, pressure on North Korea increased, and North Korea became more isolated, just as the United States had wanted. The Security Council also supported the Agency and strengthened its position.

On May 25, the United States and North Korea declared that bilateral talks would be held on June 2 in New York. After these inter-governmental talks between two states, on June 11, one day before the coming into force of North Korea's withdrawal from the NPT, it was announced that North Korea had unilaterally suspended its decision to leave the NPT. In the Joint Statement, as the United States had provided negative security assurances (not to threaten or use force, including nuclear weapons), North Korea pledged to comply with "full-scope safe guards". Although the joint statement did not include information about the Team Spirit joint military exercises or the inspection of the two facilities, it was declared that dialogue would continue between the two sides.[243]

In November, North Korea proposed a comprehensive solution named a "package deal." In the "package deal", the North was suggested the following:

> North Korea would remain in the NPT, accept regular IAEA inspections, and discuss the issue of the special inspections, while the United States would agree to end the "Team Spirit" military exercises, lift economic sanctions on North Korea and agree to hold the third round of high level US-DPRK levels.[244]

During the negotiations, these issues that had been tabled by North Korea were the main object of discussion between the two sides.

On February 25, North Korea and the United states agreed on the resumption of the inspections. In early March 1994, the inspection team organized a visit to the North, and after the visit reported that North Korea had increased its nuclear capacities. In addition to this, North Korea did not allow the inspectors to take samples or radioactivity measurements from the Yongbyon reprocessing plant.[245] Thereupon, on March 21, the IAEA Board of Governors adopted a resolution urging North Korea to

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[242] "Resolution 825" *SECURITY COUNCIL RESOLUTIONS - 1993*, accessed April 28, 2015, http://www.un.org/Docs/scres/1993/scres93.htm.
[243] Sigal, *Disarming Strangers*, 260.
[244] Narushige Michishita, "North Korea's 'first' Nuclear Diplomacy, 1993–94" *Journal of Strategic Studies* 26, no. 4 (December 1, 2003): 51.
[245] Leventhal and Dolley, "The North Korean Nuclear Crisis" 4.

permit the agency to conclude the inspections with all required activities and asked the Director General of the IAEA to report the resolution to the UNSC.[246] On 31 March, the UN Security Council released a presidential statement calling upon the North to permit full inspections.[247]

The tension in the crisis increased after the North Korean decision to shut down its 5 MWe reactor on April 1. The North also announced on 19 April that they would defuel the reactor and the IAEA inspectors would be allowed to observe without extracting any samples. However, the Agency needed the samples from spent fuel rods to uncover the amount of plutonium obtained by the North in the past. The Agency refused to send any inspector to the North Korea for observation without taking samples.[248]

Meanwhile, the United States and South Korean military deployment increased on the peninsula. Patriot air defense missiles arrived from the United States and were made operational in South Korea, AH-64 Apache helicopters were already deployed and intelligence assets were increased to analyze the North more clearly.[249] Washington also warned Pyongyong that if the reactor was defueled without the participation of IAEA's inspectors, the United States would not continue to resolve the nuclear issue through discussions. Despite all the pressure, on May 12, North Korea stated that the discharging of spent fuel rods from the 5 MWe reactor had already began. [250]

The crisis in the peninsula deepened dangerously when North Korea took the decision to unload the reactor. One possible outcome now concerned the future of the North's nuclear capabilities. As David Albright outlines:

> In spring 1994, North Korea unloaded the 25 MWt reactor. Our best estimate of the amount of plutonium in this spent fuel is 25±8 kilograms, depending on how the reactor was run and how long the fuel was irradiated. If separated, this amount would be enough for four or five nuclear weapons.[251]

[246] Narushige Michishita, "North Korea's 'first' Nuclear Diplomacy, 1993–94" *Journal of Strategic Studies* 26, no. 4 (December 1, 2003): 58.
[247] Leventhal and Dolley, "The North Korean Nuclear Crisis" 167. This calling was not a binding act as Security Council resolutions.
[248] Mazarr, *North Korea and the Bomb*, 157-158.
[249] Wit, Poneman, and Gallucci, *Going Critical*, 176.
[250] Sigal, *Disarming Strangers*, 115.
[251] Albright, "North Korean Plutonium Production," 63.

Another outcome of this discharging process was concerned North Korea's past nuclear operations. Regarding this issue, On June 3, Hans Blix stated that the North had unloaded so much of the reactor that it was now impossible for IAEA inspectors to uncover the reactor's operating and fueling history.[252]

On June 10, the IAEA adopted a resolution that suspended technical assistance to the North. In response, North Korea announced its withdrawal from membership of the IAEA. These developments pushed the North and South sides of the peninsula closer to war.[253]

3.3.3 The End of the First Nuclear Crisis

At this point, the former President of the United States of America, Jimmy Carter, visited North Korea as a private person and talked with Kim Il Sung on June 17. After the meeting, North Korea agreed to freeze its nuclear program. In exchange, the United States would return to high level talks with the North.[254] The sides agreed that the talks would begin in Geneva on July 8. On the same day, the North announced that Kim Il Sung had died of a heart attack. Kim Jong Il, the "Dear Leader", became North Korea's new leader.[255]

At the end of the third round of high level talks, on August 12, an "Agreed Statement" was released by North Korea and the United States, consisting of the following main points:

- The DPRK is prepared to replace its graphite-moderated reactors and related facilities with light water reactor (LWR) power plants and the U.S. is prepared to make arrangements for the provision of LWRs of approximately 2000 MW(e) to the DPRK as early as possible and to make arrangements for interim energy alternatives to the DPRK's graphite-moderated reactors. Upon receipt of U.S. assurances for the provision of LWRs and for arrangements for interim energy alternatives, the DPRK will freeze construction of the 50 MW(e) and 200 MW(e) reactors, forego reprocessing, and seal the Radiochemical Laboratory, to be monitored by the IAEA.
- The DPRK is prepared to remain a party to the Treaty on the Non-Proliferation of Nuclear Weapons and to allow implementation of its safeguards agreement under the Treaty.[256]

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[252] Leventhal and Dolley, "The North Korean Nuclear Crisis" 167.

[253] In South Korea, in mid-June, the government called up six million reservists for mobilization. People began stockpiling food reserves in expectation of a possible war. Some foreign companies even ordered their employees to leave the country. Furthermore, a nationwide civil defence drill took place. In North Korea, the Korean People's Army (KPA) had been in a high state of military readiness since 1990 Christoph Bluth, *Korea*, 1 edition (Cambridge, UK ; Malden, MA: Polity, 2008), 75.

[254] Michishita, "North Korea's 'first' Nuclear Diplomacy, 1993–94" 60.

[255] Leventhal and Dolley, "The North Korean Nuclear Crisis" 167.

[256] Wit, Poneman, and Gallucci, *Going Critical*, 420–421.

This agreement was a major step toward reaching a final deal for the peaceful resolution of the nuclear crisis.

On October 21, 1994, in Geneva, Pyongyang and Washington achieved a final deal called the "Agreed Framework", based on mutual commitments by North Korea and the United States of America.

Under the terms of the agreement, North Korea would firstly freeze and then dismantle its existing nuclear program based on a graphite moderated reactor. Besides this, North Korea would allow full inspections by the IAEA to resume and would fully cooperate with the Agency. The North would also remain a party to the NPT. The eight thousand fuel rods removed by North Korea from the 5 MWe reactor would be stored safely and later disposed of completely. In turn, the United States would organize an international consortium to finance and supply the LWR project that consisted of two 1000 MWe light water reactors which would be completed by a target date of 2003. The United States would also provide a rate of 500,000 tons of heavy oil annually as alternative energy for heating and electricity production. The two sides also agreed on the normalization of relations, such as the lifting of barriers to economic and political relations between the two states. The United States committed not to threaten North Korea with the use of nuclear weapons. North Korea would improve relations with South Korea and work for the denuclearization of the Peninsula.[257]

The Agreed Framework defused the nuclear crisis in which the Korean Peninsula's states had come close to military confrontation.

Referring to the agreement, the President of the United States, Bill Clinton, stated that the deal "will make the United States, the Korean peninsula and the world safer."[258] For the United States, the main aim was to completely dismantle the North's nuclear program. But some controversial issues had not even been mentioned in the agreement. The missing points were the problem of the two suspected sites in North Korea and the historical data on reactor activities.

However, the agreement was a diplomatic success story for North Korea. Just by stopping their nuclear program, the North would acquire two LWRs, arranged by the

[257] "US-DPRK Agreed Framework | NTI" *NTI: Nuclear Threat Initiative*, accessed May 3, 2015, http://www.nti.org/treaties-and-regimes/us-dprk-agreed-framework/; IISS, *North Korean Security Challenges,72*.

[258] Sigal, *Disarming Strangers*, 192.

United States. In addition, they would preserve the plutonium that they had produced before 1992 until the main parts of the reactors were completed.[259]

3.4. The Second Nuclear Crisis

3.4.1 Background

The Agreed Framework between North Korea and the United States was a historical deal both for the parties concerned and for the international community at large. However, it could not halt the emergence of a Second Nuclear Crisis on the peninsula. The problems were apparent in the implementation of the Agreed Framework.

As a part of the agreement, North Korean nuclear activities, such as plutonium production, the construction of 50 MWe and 200 MWe reactors and the reprocessing of spent fuel were frozen immediately and in January 1995, IAEA technicians put the spent fuel into cans for storage.[260]

On March 9, 1995, the Korean Peninsula Energy Development Organization (KEDO), an international consortium, was established by Japan, South Korea and the United States to organize the following activities which were part of the Agreed Framework:

- To finance and construct in the DPRK two light-water reactors (LWR) of the Korean Standard Nuclear Power Plant model and, in so doing;
- To provide the DPRK with an alternative source of energy in the form of 500,000 metric tons of heavy fuel oil each year for heating and electricity production until the first of those reactors is completed.
- To conduct its activities in a manner that meets or exceeds international standards of nuclear safety and environmental protection
- To provide for the implementation of any other measures deemed necessary to accomplish the foregoing or otherwise to carry out the objective of the Agreed Framework.[261]

[259] IISS, *North Korean Security Challenges*, 72.
[260] For verification, the IAEA installed surveillance cameras at Yongbyon Nuclear Complex. All nuclear facilities except the IRT 2000 reactor were shut down. Ibid.,92.
[261] The other states such as New Zealand, Australia and Canada also joined KEDO. "KEDO," *KEDO Executive Board Meeting Concludes - November 14, 2002*, accessed April 11, 2015, http://www.kedo.org/news_detail.asp?NewsID=23.

The LWR project was initiated by KEDO but due to economic and political reasons, the construction of the LWRs developed slowly and fell behind schedule. As a result, North Korea demanded compensation for the delay. On February 22, 2001, a North Korean Foreign Ministry spokesperson made a statement saying:

> The LWR project which had been scheduled to be completed by 2003 is unlikely to become a reality … The U.S. is obliged to compensate for the DPRK's loss of electricity caused by the delayed LWR project. If it does not honestly implement the agreed framework as today, there is no need for us to be bound to it any longer. … The United States must clearly know that we cannot wait for its completion for an indefinite period.[262]

For North Korea, heavy oil deliveries were also problematic and did not take place on time. On August 1998, North Korea conducted a missile test upon which the United States Congress decided to halt funding for heavy oil deliveries to North Korea.[263]

In the summer of 1998, United States intelligence claimed that North Korea had a clandestine nuclear program at an underground facility in Kumchang-ri about 50 km northwest of Yongbyon. When the United States accused of North Korea of having a secret nuclear facility, North Korea denied all the allegations. In the end, the North agreed to open the sites for inspections in exchange for food assistance from the United States in 1999.[264] The inspection team visited the underground site but the site was empty and they found nothing related to nuclear activities.[265] Although there were problems in the implementation of the agreement on both sides, the main reason that the Agreed Framework ended was North Korea's clandestine uranium enrichment program.

3.4.1.1 The Highly Enriched Uranium (HEU) Program

Alongside plutonium production, uranium enrichment is another method used by states to build their own nuclear explosive devices. Until the North Korea's official statement about its uranium enrichment activities in mid-2009, North Korea never accepted the allegations about its HEU program.

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[262] "Spokesman for DPRK Foreign Ministry on New U.S. Administration's Policy towards DPRK," *Korean Central News Agency*, February 22, 2001, http://www.kcna.co.jp/index-e.htm.
[263] "US-DPRK Agreed Framework | NTI," *NTI: Nuclear Threat Initiative*, accessed May 24, 2015, http://www.nti.org/treaties-and-regimes/us-dprk-agreed-framework/.
[264] The North permitted the access to the verification team. In return, North Korea would receive 50.000 tons of food aid.Yoichi Funabashi, *The Peninsula Question: A Chronicle of the Second Korean Nuclear Crisis* (Washington, D.C: Brookings Institution Press, 2007), 98.
[265] IISS, *North Korean Security Challenges*, 75.

Even though the North Korean HEU program can be traced back to the 1980s, rapid progress in the program took place during the mid-1990s.[266] In this period, North Korea reportedly acquired enrichment technology from Dr. Abdul Qadeer Khan [267] who played a key role in the nuclear program of Pakistan and was known as the "father of Pakistan's nuclear bomb".[268] Dr. Khan delivered "a few dozen gas centrifuges to the North; facilitated Pyongyang's acquisition of materials, equipment; design data for enrichment program and permitted North Korean personnel access to his laboratories."[269] He also provided a "shopping list", that is, the necessary materials to be purchased from abroad for the HEU program.[270]

As Bruce Cumings explains, although the uranium enrichment program of North Korea is based on an old design using gas centrifuge technology, it brought some advantages for the North. To run an efficient HEU program, it does not matter where the facilities of the enrichment program are built, above or underground. It also doesn't consume large amounts of electricity, and the various facilities for an enrichment program can be located in different parts of the country.[271]

The United States began to become deeply suspicious of a secret North Korean uranium enrichment program at the end of 1990s. A CIA document from November 2002 states that:

> The United States has been suspicious that North Korea has been working on uranium enrichment for several years. However, we did not obtain clear evidence indicating the North had begun constructing a centrifuge facility until recently. We assess that North Korea embarked on the effort to develop a centrifuge-based uranium enrichment program about two years ago.[272]

[266] For instance, according to a five–year–long German intelligence investigation, from 1985 to 1990, Iraq, possibly Iran and North Korea acquired uranium melting knowledge from Pakistan in the late 1980s.Sharon A. Squassoni, "Weapons of Mass Destruction: Trade Between North Korea and Pakistan" (Congressional Research Service, 2006), 5, accessed May 7, 2015, http://www.fas.org/sgp/crs/nuke/RL31900.pdf.

[267] Although Pakistan denied the allegations about a North Korea-Pakistan Swap Agreement on the exchange of Nuclear Technology for North Korean made missiles, according to some US sources such as New York Times ,the source of North Korea's HEU program was Dr. Khan and his network. For details Gaurav Kampani, "Second Tier Proliferation: The Case of Pakistan and North Korea," *The Nonproliferation Review* 9, no. 3 (September 1, 2002): 07-116.

[268] Funabashi, *The Peninsula Question*, 119.

[269] Pollack, *No Exit*, 135.

[270] Funabashi, *The Peninsula Question*; IISS, *North Korean Security Challenges,108*.

[271] Cumings, *North Korea*, 92.

[272] Wampler, "North Korea and Nuclear Weapons: The Declassified U.S. Record."

One of the reasons that the United States, under the Bush Administration, abandoned the engagement policy pursued by President Clinton could have been its learning of the secret North Korean nuclear program.[273]

3.4.1.2 The Collapse of the Agreed Framework

In October, 2002 the United States Assistant Secretary of State James Kelly visited North Korea and during the visit, according to the United States delegation, North Korea admitted that they had a covert uranium enrichment program. However, The North rejected the allegations and stated that there was no evidence that North Korea had violated the Agreed Framework. Additionally, North Korea blamed the United States for its failure to complete the LWR project on time.[274]

Here, it could be said that a translation problem or misinterpretation might have caused a disagreement between North Korea and the United States. From the perspective of the United States' delegation, Kang had admitted to having an uranium enrichment program by asking, "What is wrong with us having our own uranium enrichment program? We are entitled to possess our own HEU, and we are bound to produce more powerful weapons than that." In the North Korea's official statemen, it was stated that "the United States had deliberately misinterpreted North Korea's message."[275] From the North Korean perspective, they had tried to say not that they had an HEU program but that they had the right to have an HEU program.[276]

Although there was a confusion over the North Korean statement, on October 16, Washington announced publicly that North Korea had admitted that they had a secret HEU program for nuclear weapons and that this was a violation of the Agreed Framework and other nonproliferation related agreements. In the statement, the United States also called upon North Korea to dismantle its nuclear weapons program and comply with the NPT.[277] For the United States, the elimination of a

[273] Another important development that changed the nature of the relationship between North Korea and the United States was the terrorist attacks of 11 September 2001 which will be detailed in next chapter.
[274] Funabashi, *The Peninsula Question*, 98.
[275] Ibid., 94,103.
[276] Ibid., 104.
[277] Bureau of Public Affairs Department Of State. The Office of Electronic Information, "North Korean Nuclear Program" accessed May 9, 2015, http://2001-2009.state.gov/r/pa/prs/ps/2002/14432.htm.

nuclear weapons program was a precondition for further bilateral discussions with the North.

In the face of these allegations, North Korea pursued a "neither confirm nor deny" policy about whether they already had an enrichment program for nuclear weapons.[278] In their official statement of October 25, North Korea accused the United States of violating its commitments under the Agreed Framework. In addition, it claimed the negotiations should be based on the following three conditions: "Firstly, if the U.S. recognizes the DPRK's sovereignty, secondly, if it assures the DPRK of nonaggression and thirdly, if the U.S. does not hinder the economic development of the DPRK."[279]

The allegations against the North about their secret enrichment program led to the events that caused the collapse of the Agreed Framework which had frozen plutonium production in North Korea since 1994.

On November 14, the executive board of KEDO released a statement saying, "Heavy fuel oil deliveries will be suspended beginning with the December shipment. Future shipments will depend on North Korea's concrete and credible actions to dismantle completely its highly-enriched uranium program."[280]

The following week, North Korea released a statement that the 1994 Agreed Framework had collapsed due to violations by the United States. The decision to suspend heavy oil delivery was a violation of just one article of the agreement. The United States, the North claimed, had already failed to comply with other articles of the agreement.[281]

These mutual accusations and allegations caused the collapse of the Agreed Framework, thus, the second nuclear crisis began.

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[278] Funabashi, *The Peninsula Question*, 106–107.
[279] "Conclusion of Non-Aggression Treaty between DPRK and U.S. Called for" *Korean Central News Agency*, October 25, 2002, accessed May 9, 2015, http://www.kcna.co.jp/index-e.htm.
[280] "KEDO."
[281] "DPRK Foreign Ministry Spokesman on U.S. Decision to Stop Supplying Heavy Oil" *Korean Central News Agency*, November 21, 2002, accessed May 9, 2015, http://www.kcna.co.jp/index-e.htm.

3.4.2 The Second Nuclear Crisis Begins

The real death of the Agreed Framework took place at the end of December. On December 12, the North Korean government announced that due to energy shortages caused by the suspension of heavy oil deliveries, nuclear activities would be resumed and the construction of the larger reactors would continue. The next day, North Korea ordered the IAEA to withdraw its seals and surveillance cameras from its declared nuclear facilities.[282] On December 21, North Korean officials removed all monitoring equipment and seals from nuclear facilities and on December 27, it announced that North Korea would begin spent-fuel reprocessing.[283]

The IAEA Board of Governor held a session in January 6, 2003 and adopted a resolution that requested North Korea to allow inspectors to return to the North for inspections. If not, the board would send the issue to the United Nations Security Council. Nevertheless, North Korea continued to escalate the situation with an unprecedented decision. On January 10, 2003, North Korea declared "an automatic and immediate effectuation of its withdrawal from the NPT" and stated that "North Korea is totally free from the binding force of the Safeguards Accord with the IAEA". The statement also said that "North Korea has no intention to build nuclear weapons and its nuclear activities would be limited to peaceful purposes such as a electricity production."[284]

Although article X of the NPT states that a country has to give three months' notice before withdrawal can take effect, North Korea claimed that it had already announced its decision to withdraw on March 12, 1993, and suspended the decision one day before it became legally binding.[285]

On February 12, the IAEA board of governors held a special meeting when after its withdrawal decision from the NPT; the North announced on February 5, that its

[282] Jonathan D. Pollack, "The United States, North Korea, and the End of the Agreed Framework" *Naval War Collage Review* 56, no. 3 (2003): 41.
[283] Pollack, *No Exit*, 139.
[284] "Statement of DPRK Government on Its Withdrawal from NPT" *Korean Central News Agency*, October 1, 2003, accessed May 9, 2015, http://www.kcna.co.jp/item/2003/200301/news01/11.htm.
[285] "Chronology of U.S.-North Korean Nuclear and Missile Diplomacy" *Arms Control Association*, March 2016, accessed April 9, 2016, https://www.armscontrol.org/factsheets/dprkchron#2013.

nuclear facilities would restart operation for the production of electricity.[286] The IAEA decided that North Korea was in a situation of noncompliance with the NPT safeguards agreements and, therefore, the agency sent the issue to the United States Security Council.[287]

At this time, in contrast to the first crisis, Washington refused to establish bilateral talks with North Korea to find a solution for the nuclear issue, and insisted that the nuclear crisis had to be resolved in a multilateral way.[288]

3.4.3 Six Party Talks and Aftermath

For China, a nuclear free Korean peninsula was undoubtedly preferable, but at the same time, China wanted peace and stability at its doorstep. Therefore, from its perspective, the nuclear issue had to be solved peacefully through diplomacy. China decided to play a key role in a peaceful solution for the nuclear issue and persuaded North Korea to find a solution in a multilateral way.

Thus, the Six Party Talks which consisted of participation from the United States, Russia, Japan, South Korea, China and North Korea began in Beijing on August, 2003. How did this series of talks affect the North Korean nuclear program? The parties in the talks aimed at dismantling the North Korean nuclear program peacefully. At the end of the fourth round of the talks, the six parties signed the Joint Statement of 19 September 2005 in which, in exchange for energy assistance and other concessions, North Korea committed itself "to abandoning all nuclear weapons and existing nuclear programs and returning, at an early date, to the Treaty on the Nonproliferation of Nuclear Weapons and to IAEA safeguards."[289] However, there were some problems in the implementation of the statement because the sides had interpreted the obligations differently. Additionally, the relationship between the

[286] Because there has not been any inspector present at Yongpyong, the information on nuclear activities was gathered by satellite imagery. When North Korea declared it was restarting its nuclear activities, steam plumes from the reactor's cooling tower were observed.
[287] IISS, *North Korean Security Challenges,* 79,104.
[288] Jingdong Yuan Yuan, "China's North Korea Dilemma and Sino- US Cooperation" in *Conflict and Cooperation in Sino-US Relations: Change and Continuity, Causes and Cures*, ed. Jean-Marc F. Blanchard and Simon Shen (New York, NY: Routledge, 2015), 116.
[289] IISS, *North Korean Security Challenges,* 82.

United States and North Korea deteriorated due to nuclear tests by the North in February 2006.[290]

On February 13, 2007, the six parties agreed on "initial actions to implement [the 19 September 2005] Joint Statement". This was a two phased agreement. In the first phase, North Korea agreed to "shut down and seal the Yongbyon nuclear facility, including the reprocessing facility and invite back IAEA personnel to conduct all necessary monitoring and verifications as agreed between IAEA and the DPRK." The second phase was "a complete declaration of all nuclear programs and disablement of all existing nuclear facilities, including graphite-moderated reactors and reprocessing plants."[291] In return, North Korea would be provided energy assistance to the amount of 50,000 tons of heavy fuel oil. In the second phase, "economic, energy and humanitarian assistance up to the equivalent of 1 million tons of heavy fuel oil (HFO), including the initial shipment equivalent to 50,000 tons of HFO" would be provided to the North.[292]

The first phase concluded mid-summer of 2007 with North Korea shutting down and sealing the 5 MWe reactor in July 2007. The second phase which was the disablement of nuclear facilities including the reactor, full fabrication facilities and reprocessing plant began in November. In the summer of 2008, the destruction by North Korea of the reactor's cooling tower took place. However, for the United States, these steps were not enough for denuclearization. Washington requested Pyongyong to accept a "Verification Measures Discussion Paper" which included demands for, "records of all imports or exports of nuclear materials and nuclear-related equipment. It was also calling for full access to any site, facility that …is related to elements of the nuclear program as declared or as determined by the relevant parties."[293] These demands were unacceptable for North Korea. On 14 August, 2008 it halted the disablement of its nuclear facilities. Moreover, after the adoption of Resolution 1718 related to the missile programs of North Korea by the United Nations Security Council, in April 2009, North Korea expelled the inspectors

[290] Nuclear Tests are examined in next section on this chapter.
[291] Bureau of Public Affairs Department Of State. The Office of Electronic Information, "North Korea - Denuclearization," February 13, 2007, accessed May 9, 2015, http://2001-2009.state.gov/r/pa/prs/ps/2007/february/80479.htm
[292] Ibid.
[293] IISS, *North Korean Security Challenges*, 87.

from the country and announced that it would not return to the Six Party Talks.[294] Moreover, North Korea conducted its second nuclear test in May 2009.

Since the Six Party Talks collapsed, the North has continued to develop its nuclear capability. In April 2009, North Korea, for the first time, officially admitted that it had a uranium enrichment program to fuel a future light water reactor.[295] In March 2010, North Korea announced the construction of a light-water reactor (LWR) at Yongbyon.[296] To show up its nuclear activities, in November 2010, North Korea invited some American nuclear scientists[297] to the country. S. Hecker who was one of these American experts writes:

> There we were shown a 25 to 30 megawatt-electric (MWe) experimental light-water reactor (LWR) in the early stages of construction, along with a modern uranium enrichment facility. This reactor is North Korea's first attempt at LWR technology. These facilities appear to be designed primarily for civilian nuclear power as opposed to boosting North Korea's military nuclear capability.[298]

In July and October 2011, there were bilateral discussions between Washington and Pyongyang in which North Korea stated that it would only return to the Six Party Talks if there were no preconditions. The United States and South Korea demanded that the North demonstrate its commitment to abandon its nuclear program prior to talks resuming.[299] Here it could be said that these mutual expectations or preconditions have created a stalemate regarding the beginning of bilateral or multilateral negotiations.

In February 2012, under its new leadership [300], North Korea made an announcement that "it would suspend its nuclear weapons tests and uranium enrichment and allow

[294] Ibid., 88.
[295] Ibid., 108.
[296] "Profile for North Korea | NTI" *NTI: Nuclear Threat Initiative*, 2014, accessed May 9, 2015 http://www.nti.org/country-profiles/north-korea/nuclear/.
[297] Siegfried S. Hecker stated that John W. Lewis, Robert Carlin and He visited North Korea's Yongbyon Nuclear Complex.
[298] Siegfried S. Hecker, "Where Is North Korea's Nuclear Program Heading?" *Physics & Society* 40, no. 2 (2011): 5.
[299] "The Six Party Talks on North Korea's Nuclear Program" *Council on Foreign Relations*, accessed May 17, 2015, http://www.cfr.org/proliferation/six-party-talks-north-koreas-nuclear-program/p13593.
[300] After Kim Jong-il's death in December 2011, his youngest son, Kim Jong-un, has consolidated power as supreme leader of the country.

international inspectors to monitor activities at its main nuclear complex." In addition to this, the North also signaled that it might return to negotiations.[301]

However, hopes for the dismantling of North Korea's nuclear program would be dashed for the international community when the North conducted its third underground nuclear test in 2013. The third nuclear test showed definitively that North Korea had nuclear capabilities.

3.5 Other Elements of Nuclear Weapons Capabilities

Besides possessing nuclear fissile materials such as plutonium and enriched uranium, nuclear device tests and delivery systems development are also important steps for weaponization.

3.5.1 Nuclear Tests

On February, 2005 North Korea, for the first time acknowledged that it had nuclear weapons. In the statement, the North declared that it had produced nuclear weapons for self-defense.[302] Since its official announcement, North Korea has conducted three nuclear tests in 2006, 2009 and 2013.

3.5.1.1 The First Nuclear Test

On October 9, 2006 the Korean Central News Agency (KCNA)[303] announced that North Korea had conducted its first nuclear test at an underground test site. In its official announcement, it was declared that "the field of scientific research in the DPRK successfully conducted an underground nuclear test under secure conditions on October 9."[304] Due to the lack of cooperation between North Korea and the international community, it would be difficult to confirm whether the blast was caused by a nuclear test. The following technologies were used to verify the

[301] Steven Lee Myers and Choe Sang-hun, "North Korea Agrees to Suspend Its Nuclear Program," *The New York Times*, February 29, 2012, accessed May 17, 2015, http://www.nytimes.com/2012/03/01/world/asia/us-says-north-korea-agrees-to-curb-nuclear-work.html.

[302] James Brooke, "North Korea Says It Has Nuclear Weapons and Rejects Talks" *The New York Times*, February 10, 2005, accessed May 17, 2015 sec. International / Asia Pacific, http://www.nytimes.com/2005/02/10/international/asia/10cnd-korea.html.

[303] North Korea's official news agency.

[304] "DPRK Successfully Conducts Underground Nuclear Test," *Korean Central News Agency*, October 9, 2006, accessed May 17, 2015, http://www.kcna.co.jp/index-e.htm.

underground nuclear test: "seismology, radionuclide monitoring and satellite imagery analysis".[305] According to measurements from different research centers all around the world, it would be concluded that a nuclear test explosion created a substantial blast with an average magnitude 4,2 on the Richter scale and a yield of approximately 1 kiloton.[306] In addition to that, it was also determined that the fissile material of the nuclear device used in the test was plutonium.[307]

Five days after the nuclear test, the United Nation Security Council unanimously adopted Resolution 1718 which stated that the nuclear test was a threat to international peace and security, and condemned it. The resolution demanded that "North Korea must eliminate all its nuclear weapons, weapons of mass destruction and ballistic missiles." Moreover, in the resolution, sanctions were imposed on North Korea which included among others, the banning of export of luxury goods to North Korea, but did not include any threat of the use of force.[308]

Table 2:North Korea's Nuclear Tests

Date	Seismec	Fissile Material	Yield
9 October 2006	**4,2**	**Plutonium**	**~1 kt.**
25 May 2009	**4,7**	**Plutonium (?)**	**2-4 kt.**
12 February 2013	**4,9-5,1**	**HEU (?)**	**5-15 kt.**

3.5.1.2 The Second Nuclear Test

On May 25, 2009 North Korea announced that it had conducted its second underground nuclear test successfully.[309] The U.S. Geological Survey registered a

[305] Vitaly Fedchenko, "North Korea's Nuclear Test Explosion, 2009," *SIPRI Fact Sheet*, no. December (2009): 1-2.
[306] Zhang Hui, "Revisiting North Korea's Nuclear Test," *China Security* 3, no. 3 (2007): 121.
[307] Vitaly Fedchenko and Ragnhild Ferm Hellgren, "Appendix 12B. Nuclear Explosions, 1945–2006 — Www.sipri.org", accessed May 17, 2015, http://www.sipri.org/yearbook/2007/12/12B.
[308] "UN Slaps Sanctions on North Korea" *BBC*, October 14, 2006, accessed May 17, 2015, sec. Asia-Pacific, http://news.bbc.co.uk/2/hi/asia-pacific/6051704.stm.
[309] "KCNA Report on One More Successful Underground Nuclear Test," *Korean Central News Agency*, May 25, 2009, accessed May 17, 2015, http://www.kcna.co.jp/index-e.htm.

4.7 magnitude quake on the Richter scale near the test site. For nuclear scientist Siegfried Hecker, the explosion yield was in the range of 2 to 4 kilotons.[310] But unlike the first nuclear test of 2006, after the explosion, there was no radioactivity, which was needed for verification of fissile material of the explosive device, detected. The Stockholm International Peace Research Institute (SIPRI) report states that "due to the absence of detected radioactive effluents from the explosion, it is not possible to establish whether the North Korean test in 2009 used uranium or plutonium. It is widely assumed that it used plutonium."[311]

Reactions from the international community were registered immediately after the announcement of the nuclear test. On June 12, 2009 The United Nations Security Council unanimously adopted Resolution 1874 tightening the sanctions and calling upon United Nations members to inspect cargo vessels and airplanes suspected of carrying military materials in or out of the country.[312]

3.5.1.3 The Third Nuclear Test

It was announced at the KCNA that North Korea had detonated its third underground nuclear test on February 12, 2013 at an underground testing site in the northern part of the country.[313] However, the third nuclear test displayed significant differences from previous nuclear tests conducted by the North. First of all, this test was the most powerful test ever conducted by the North. It was registered at a 4.9-5.1 magnitude quake on the Richter scale near the test site and the explosion yield was estimated to be in the range of 5 to 15 kt, which was 2-3 times stronger than the second test. Such estimated explosion yield was close to the bomb dropped on Hiroshima in 1945.[314] The other difference was that although no radioactivity, needed for the verification of the fissile material of an explosive device, was detected after the explosion, for many experts, because of the limited amount of plutonium it had, North Korea could be

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[310] "North Korea Dangers Lurk Whatever Nuclear Test Result" *Reuters*, June 1, 2009, http://www.reuters.com/article/2009/06/01/us-korea-north-results-sb-analysis-idUSTRE5507DN20090601.

[311] Fedchenko, "North Korea's Nuclear Test Explosion, 2009," 5.

[312] Neil Macfarquhar, "U.N. Security Council Pushes North Korea by Passing Sanctions," *The New York Times*, June 13, 2009, accessed May 20, 2015 sec. International / Asia Pacific, http://www.nytimes.com/2009/06/13/world/asia/13nations.html.

[313] "KCNA Report on Successful 3rd Underground Nuclear Test," *Korean Central News Agency*, 2013, accessed May 20, 2015, http://www.kcna.co.jp/index-e.htm.

[314] Cheon Seong Whun, "North Korea's Nuclear Policy after Its Third Nuclear Test: Analysis and Forecast," *Korea Institute for National UnificationKorea Institute for National Unification*, 2013, accessed May 20, 2015, http://kinu.or.kr/upload/neoboard/DATA01/co13-08%28E%29.pdf.

conducting nuclear tests based on HEU. The third main difference emerged from the official statement by North Korea. It stated that, "The test was conducted in a safe and perfect way on a high level with the use of a smaller and light A-bomb unlike the previous ones."[315] From this announcement, it could well be interpreted that North Korea had obtained the ability to miniaturize nuclear warheads for its ballistic missiles.

As a response to the third nuclear test by North Korea, Resolution 2094, aiming to reinforce and broaden the scope of the previous UN sanctions against the DPRK was issued by the United Security Council on March 7, 2013.[316]

In this context, it should be noted that besides its nuclear program, North Korea also has an extensive ballistic missile program to explore the delivery means of nuclear warheads.

3.5.2 North Korea's Ballistic Missile Program

If a state wants to obtain nuclear weapon capability, it also needs to develop systems which deliver the nuclear warheads to a target. Basically, there are three methods of delivery to carry nuclear warheads to a target. These are aircraft, ballistic missiles and cruise missiles.[317] Ballistic missile is the ideal type of delivery system. A country with ballistic missile capability also has an advantage in the penetration of enemy air defenses.[318] In fact, states that develop nuclear weapons tend also to develop ballistic missiles, North Korea is one of these.

North Korea has continued to develop its ballistic missile program since 1970s. As with its nuclear program, it adopted technology mostly from the Soviet Union and China to develop its ballistic missile capabilities.

However, although North Korea received significant technical assistance and technical know-how on building its ballistic missile systems from the Soviet Union and China, the first shipment of ballistic missiles to the North came from a Middle

[315] "KCNA Report on Successful 3rd Underground Nuclear Test."
[316] "Security Council Strengthens Sanctions on Democratic People's Republic of Korea, in Response to 12 February Nuclear Test," *United Nations*, March 7, 2013, accessed May 20, 2015, http://www.un.org/press/en/2013/sc10934.doc.htm.
[317] There are also low technology delivery methods such as artillery or truck but the delivery systems mentioned above are technically advanced and are much more advantageous in terms of reliability.
[318] Li Bin, "Nuclear Missile Delivery Capabilities in Emerging Nuclear States," *Science & Global Security* 6, no. 3 (June 1997): 312.

Eastern country, Egypt. Thus, North Korea could acquire Soviet-made *Scud-Bs* from Egypt, copy them, and successfully produce an indigenous version, named by North Korean specialists as the *Hwasŏng-5*. By 1984, the North had tested its *Hwasŏng-5* missiles, which reportedly flied a range of 320km compared to the Scud-B's 300km.[319] The development of Hwasŏng-*5 (Scud B)* missiles was a significant step in its ballistic missile program but it was a short range missile and its range could not cover the whole Korean Peninsula.[320]

Table 3: Ballistic Missile Range Classes

Intercontinental Ballistic Missile	ICBM	over 5500 kilometers
Intermediate-Range Ballistic Missile	IRBM	3000 to 5500 kilometers
Medium-Range Ballistic Missile	MRBM	1000 to 3000 kilometers
Short-Range Ballistic missile	SRBM	up to 1000 kilometers

"Ballistic Missile Basics," Federation of American Scientists - Special Weapons Primer, 2000, accessed May 20, 2015, http://fas.org/nuke/intro/missile/basics.htm.

According to ballistic missile range classes as shown in table 3, the Hwasŏng-5 (Scud B) and later developed *Hwasŏng-6* (Scud C)[321] are in the short range ballistic missiles category.

North Korea reportedly began to work on the production of its MRBM, named *Nodong* with a range of between 1000-1500 km., in 1988 or 1989. The first *Nodong* prototypes were produced in 1989 or 1990. Finally, North Korea flight-tested the *Nodong* between 29-30 May 1993. Nodong missiles also became important export items from North Korea to countries such as Iran and Pakistan. In fact, North Korea has become an important supplier in the international ballistic missile market. It has potential customers from South Asia to the Middle East.[322]

In the early 1990s, after development of the Nodong missile was completed by North Korean engineers, new types of ballistic missile systems were designed and developed: the Paektusan-1 (Taepodong-1), the Paektusan-2 (Taepodong-2), the

[319] IISS, *North Korean Security Challenges*, 129–130.
[320] Joseph S. Bermudez, *A History of Ballistic Missile Development in the DPRK* (Monterey Institute of International Studies, Center for Nonproliferation Studies, 1999), 14.
[321] SCUD C introduced by The North as a new version of SCUD B and deployed operationally in 1991. IISS, *North Korean Security Challenges*, 131.
[322] Ibid., 156.

Musudan, and the KN-02.[323] Table 4 gives an overview of North Korean ballistic missiles ranges.

Table 4: Estimated Missile Ranges of North Korea

Ballistic Missiles	Estimated Range (km)
KN-02	**~ 100**
Hwasong-5	**300**
Hwasong-6	**500**
Nodong	**~ 1000**
Taepong -1	**1600 +**
Musudan	**2500 +**
Taepong -2	**5500 +**

Markus Schiller, "Characterizing the North Korean Nuclear Missile Threat," RAND Corporation, 2012, 11, accessed May 25, 2015, http://www.rand.org/pubs/technical_reports/TR1268.html.

According to an unclassified United States intelligence report from 2004, North Korea became almost self-sufficient in terms of ballistic missiles with its extensive ballistic missile technology, but it still needed raw materials and components from various foreign sources.[324] A 2011 report published by The International Institute of Strategic Studies (IISS) asserts that although the North Korean ballistic missile program has continued to develop, it still needs to buy significant key components from abroad and has no self-sufficient production line for its ballistic missiles.[325]

Related to its missile program, North Korea has actively developed its space launch capabilities. Tests of space launch vehicles conducted by North Korea have also raised international concerns because of the use of similar technology to ballistic

[323] Daniel A. Pinkston, *The North Korean Ballistic Missile Program* (Strategic Studies Institute, 2008), 23.
[324] Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January-31 December 2004 (Federation of American Scientists, 2004), 4, accessed May 25, 2015, http://fas.org/irp/threat/wmd.htm.
[325] IISS, North Korean Security Challenges, 150-156.

missiles that can carry nuclear warheads. On August 31, 1998 North Korea attempted to put a satellite named *Kwangmyongsong-1* into orbit by launching a *Taepodong -1* three stage ballistic missile. Interestingly, although North Korea announced that the launch was successful and the satellite had been put into low-Earth orbit, international sources claimed that the launch had been a failed attempt.[326] In 2006, North Korea also tested *Taepodong-2* and it flew only about 42 seconds. However, this attempt to test missile was condemned by the UNSC with resolution 1615.[327]

After a series of serious failed launch attempts, North Korea finally successfully launched a three-stage rocket and put a satellite named *Kwangmyŏngsŏng-3 Unit 2* into orbit on 21 December 2012.[328] However, this act was criticized by the international community and on 22 January 2013, the United Nations Security Council adopted Resolution 2087, condemning the launch of 21 December and deeming it a violation of previous resolutions, 1718 and 1874, which banned ballistic missile activity and missile tests.[329]

In the end, with its successful third nuclear test under its belt and its growing ballistic missiles capabilities, the Kim Jong Un regime has now indicated that North Korea has no intention to abandon its nuclear weapons capabilities. The Supreme People's Assembly of North Korea declared on April 1, 2013 that it would launch a dual policy of simultaneous development of the economy and nuclear weapons capability.[330]

3.6 Conclusion

This chapter has explored the historical background of North Korea's nuclear program from its beginning to the third nuclear test conducted by the North in 2013.[331] North Korean nuclear activities have roots tracing back to the years of its

[326] Ibid., 136; "North Korea Space Guide."
[327] IISS, *North Korean Security Challenges*, 83,139.
[328] Ralph Savelsberg, "An Analysis of North Korea's Satellite Launches," *Journal of Military Studies* 3, no. 1 (2013): 1.
[329] "Security Council Condemns Use of Ballistic Missile Technology in Launch by Democratic People's Republic of Korea, in Resolution 2087 (2013)," *United Nations*, 2013, accessed May 25, 2015, http://www.un.org/press/en/2013/sc10891.doc.htm.
[330] Jinwook Choi, "A Game Changer: North Korea's Third Nuclear Test and Northeast Asian Security," *The Journal of East Asian Affairs* 27, no. 1 (April 1, 2013): 107.
[331] For the key developments related to the North Korean nuclear activities after the third nuclear test, please see APPENDIX 1

foundation. During the Cold War, the North developed its nuclear program chiefly with the aid of the Soviet Union and China. International concerns about North Korea's nuclear activities were heightened when nuclear reactors emerged alongside ambiguity over its nuclear intentions. Since then, the international community has tried to manage North Korea's nuclear program employing the means of international organizations. Consequent actions led to the emergence of nuclear crises. Despite all the efforts to halt its nuclear program, North Korea announced its nuclear weapons state status in 2005 and detonated its first nuclear test in 2006, nearly six decades since its first nuclear efforts. According to a SIRPI report dated 2013[332], it is estimated that North Korea has 6-8 nuclear weapons.[333] It is also known that it has a sophisticated developmental ballistic missile program.

Over this long period of time, North Korea has not abandoned its nuclear weapons ambitions, even under tense international pressure. Why has North Korea insisted on obtaining nuclear weapons? The next Chapter will analyze, within the framework of neorealism, the main motivating factors for North Korea to develop its nuclear weapons.

[332] For estimated number of North Korean nuclear weapons in 2015, please see APPENDIX 2.
[333] "6. World Nuclear Forces," *Stockholm International Peace Research Institute (SIPRI)*, accessed May 27, 2015, http://www.sipri.org/yearbook/2013/06.

4. AN EXAMINATION OF NORTH KOREA'S NUCLEAR DECISION FROM A NEOREALIST PERSPECTIVE

4.1 Introduction

In this chapter, the reasoning behind the North Korean nuclear decision will be analyzed through the lens of neorealist theory. It is asserted that structural factors such as the anarchic nature of the international system and external security threats to North Korea are major factors that have forced North Korea to build its own nuclear explosive devices. In contrast to many states in the world, why has North Korea sought to acquire nuclear weapons to preserve its existence in the international system? It is argued that North Korea developed nuclear weapons to deter and to counter external threats to its national security. In the first section of this chapter, the major external security concerns of North Korea, those that motivate it to develop and to obtain nuclear weapons, will be examined. What are the major security concerns of North Korea? How do these concerns drive the North to obtain nuclear weapons? In the second section, related to these security concerns, the question of why it appears to be a rational decision for North Koreas leadership to develop its own nuclear weapons to enhance its security will be answered. It is argued that for North Korea, obtaining nuclear weapons as a deterrent force was a necessity to meet its security needs because other strategic options such as external balancing, internal balancing (without nuclear weapons) and even bandwagoning were problematic strategies in countering threats. Lastly, two dramatic nonproliferation cases will be explained. It is held that the nuclear proliferation stories of these two countries, Ukraine and Libya, have had great impact on North Korea's nuclear weapon calculations.

4.2 North Korea's Major External Security Concerns

In the anarchic nature of the international system, external factors that threaten North Korea's security are key motivating elements for Pyongyang's nuclear decision.

Therefore, in order to understand why the nuclear weapons option became a necessity for North Korea to enhance its security, firstly the North's major security concerns and the role of nuclear weapons in dealing with these concerns has to be analyzed.

4.2.1 The US hostile policies toward North Korea

The main security challenge that drives North Korea to build nuclear weapons comes from the United States hostile policies toward the North since the Korean War. When Prof. Siegfried S. Hecker from Stanford University visited Pyongyang after the first nuclear test in 2006, North Korean officials told him that the nuclear test was a result of U.S. political pressure and the purpose of the nuclear weapons was to deter the United States.[334] In this context, Stephen Walt's balance of threat argument which was mentioned in the first chapter is applicable to evaluate the North Korean nuclear calculations regarding the threat emanating from the United States. Before examining how the United States has threatened North Korea's security, what the sources of a "threat" are needs to be clarified.

As was shown earlier, according to neorealist theory, in anarchy, where there is no supreme authority to punish aggressors, all states represent potential threats to one another. However, Walt explains the sources of threat in his balance of threat theory as follows:

> Balance-of-threat theory argues that states generally act to balance the greatest threats to their security. The degree to which a state threatens others is a function of four factors: *its aggregate power, geographic proximity, offensive capabilities, and offensive intentions.* Other things being equal, states that are close by are more dangerous than those that are far away. States with large offensive military capabilities are more dangerous than those whose armed forces are largely suitable for defending their own territory. Lastly, states with clearly aggressive intentions tend to provoke more opposition than those who seek primarily to uphold the status quo.[335]

Based on these criteria, it can be said that the United States appeared as a serious threatening actor for North Korea. If comparing between the US and North Korea, the aggregate power and offensive capabilities of the US with its nuclear and conventional forces are enormous. In terms of geographic proximity, it is true that

[334] Siegfried S. Hecker, "Report on North Korean Nuclear Program" (Center for International Security and Cooperation: Stanford University, November 15, 2006), 4–5, accessed December 12, 2015 https://cisac.fsi.stanford.edu/sites/default/files/DPRK-report-Hecker-06-1.pdf.

[335] "Balancing Threat: The United States and the Middle East An Interview with Stephen M. Walt" *Yale Journal of International Affairs* 5, no. 2 (2010), accessed December 12, 2015, http://yalejournal.org/interview_post/balancing-threat-the-united-states-and-the-middle-east/.

there is a serious distance between the United States mainland and North Korea, but, as a part of its extended deterrence policy in the region, the United States has stationed military units in Korean Peninsula since the Korean War.[336] Moreover, its naval forces with aircraft carriers play a significant role in its ability to project its power in the region within a very short period of time. Among these factors, the decisive one that has made the United States a real "threat" for North Korea is aggressive intentions emanating from its hostile policies and nuclear threats towards North Korea.[337]

Although the US role in contemporary Korean politics can be traced back to the division of the peninsula with the end of the Second World War [338], US hostile policies and nuclear threats toward the North date back to the Korean War. Robert Jervis states that "historical traumas can heavily influence future perceptions."[339] In this context, it can be said that North Korea's confrontation with the United States in the Korean War has had a great impact on the perceptions of North Korean security threats related to the United States.

The war was full of tragedy for the North as well as for the entire peninsula. During the war, besides the killing of millions[340], North Koreans were exposed to heavy air bombing campaigns by the U.S.-led United Nations coalition. Heavy bombing raids caused serious damage to most and huge parts of North Korean cities (for instance, 75% of Pyongyang was destroyed in air attacks).[341] A UN report which was issued during the war stated that "there are no more targets in Korea."[342]

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[336] Chanhyun Cho, "North Korea's First 2006 Nuclear Test: Balancing against Threat?" (Master of Arts, University of Victoria, 2014), 30.

[337] Andreas Bock, "Balancing for (In)Security: An Analysis of the Iranian Nuclear Crisis in the Light of the Cuban Missile Crisis," *Perceptions* XIX, no. 2 (Summer 2014): 116.

[338] After the surrender of Japan, in order to prevent the occupation of entire peninsula by Soviets, the United States proposed to divide the Korea from the thirty-eighth parallel. Then, with the acceptance of Soviets this proposal, the peninsula was divided into two "temporary" occupation zones. Oberdorfer, *The Two Koreas*, 6–7.

[339] Robert Jervis, "Hypotheses on Misperception," *World Politics* 20, no. 3 (1968): 470.

[340] Modern Korean Historian, Bruce Cumings notes that "A total of 36,940 Americans lost their lives in the Korean theater; of these, 33,665 were killed in action, while 3,275 died there of non-hostile causes. Some 92,134 Americans were wounded in action, and decades later, 8,176 were still reported as missing. South Korea sustained 1,312,836 casualties, including 515,004 dead. Casualties among other UN allies totaled 16352, including 3,094 dead. Estimated North Korean casualties numbered 2 million, including about 1 million civilians and about 520,000 soldiers. An estimated 900,000 Chinese soldiers lost their lives in combat." Bruce Cumings, *The Korean War: A History* (New York, NY: Modern Library, 2010), 35.

[341] Throughout the war, the United States dropped more bombs (includes napalm and tarzon bombs) in Korea than had dropped in Pacific wars during the Second World War. Bruce Cumings, "Not

Additionally, during the war, the United States threatened to use atomic weapons against North Korean and Chinese forces. In a press conference, on 30 November 1950, The President of the United States Harry S. Truman explicitly expressed that there had been consideration of using nuclear weapons in the Korean Peninsula.[343] The United States wanted to use its nuclear power to force North Korea make an armistice.[344]

On July 27, 1953 the sides signed the Korean Armistice Agreement which ended the fighting on the Korean Peninsula. However, the warring sides on the Korean Peninsula are still technically at war because no peace treaty has been signed to formally end the Korean War.

United States nuclear threats became serious for Pyongyang when nuclear weapons were stationed in South Korea by the United States in 1958.

Even after the armistice was signed, the United States continued to worry that there was a possibility of a North Korean invasion.[345] Another issue that concerned the United States was the President of South Korea Syngman Rhee's aggressive ambitions. Rhee wanted to unify the peninsula by force.[346] Therefore, any unilateral action by him could start a Second Korean War that the United States did not want. Thus, as a part of the extended deterrence policy, to deter any North Korean attack on the South and to prevent President Rhee's aggressive move towards the North, the Eisenhower administration decided to deploy nuclear weapons on the Korean Peninsula. The nuclear option was used because, for Eisenhower, nuclear weapons

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War/Not Peace: The Korean Armistice Under a Nuclear Shadow," *The Japan Policy Research Institute*, 2013, accessed December 12, 2015, http://www.jpri.org/publications/workingpapers/wp120.html.

[342] Terence Roehrig, *From Deterrence to Engagement: The U.S. Defense Commitment to South Korea* (Lanham, MD: Lexington Books, 2006), 34.

[343] Bruce Cumings, "Korea: Forgotten Nuclear Threats," *Le Monde Diplomatique English Edition*, December 2004, https://mondediplo.com/2004/12/08korea.

[344] Although atomic bombing was one of the options to end the war by Washington and this message was conveyed to Chinese and North Korean Leadership, it is claimed that the nuclear threats of the US were not a decisive factor to end the war in the Korean Peninsula. Roger Dingman, "Atomic Diplomacy during the Korean War" *International Security* 13, no. 3 (1988).

[345] For instance, Secretary of State Dulles had concerns about a possible North Korean attack on the South. Bruce Cumings, "Not War/Not Peace: The Korean Armistice Under a Nuclear Shadow," *The Japan Policy Research Institute*, 2013, accessed December 12, 2015. http://www.jpri.org/publications/workingpapers/wp120.html.

[346] Jae-Bong Lee, "US Deployment of Nuclear Weapons in 1950s South Korea & North Korea's Nuclear Development: Toward Denuclearization of the Korean Peninsula," *The Asia-Pacific Journal: Japan Focus*, February 17, 2009, accessed December 20, 2015, http://www.japanfocus.org/-lee-jae_bong/3053/article.html.

are "strategically acceptable and decisively cheaper alternative to conventional forces."[347] Additionally, as suggested by Waltz, "nuclear weapons would bring stability to the region", it would constrain any offensive move on both sides. Cumings states that "Rhee and Kim Il Sung would think twice before starting a war that would rain nuclear destruction on the peninsula."[348]

However, the deployment of nuclear weapons on the Korean peninsula was an act in violation of the armistice because the article 13/d of Korean War armistice agreement prohibited the introduction of new types of weapons into Korean peninsula. In order to justify the introduction of nuclear weapons into Korea, the United States argued that North Korea had already violated article 13/d of the armistice agreement and that the article could now be viewed as non-binding.[349] Thus, in August 1957, President Eisenhower approved the deployment of nuclear weapons through the NSC's decision no. 5702/2. It should also be noted that these weapons would be controlled by the United States alone.[350]

In January 1958, American 280 mm atomic cannon and Honest John nuclear missiles were positioned in South Korea.[351] Later on, other types of nuclear weapons such as matador missiles and atomic demolition mines (ADM) were stationed into South Korea. Figure 2 illustrates the types and number of nuclear weapons stationed by the United States in the Korean Peninsula. As is shown the number of deployed warheads reached nearly one thousand during the Cold War. Tactical nuclear weapons were stationed in Korea until the end of the Cold War.

[347] Tom Nichols, Douglas Stuart, and Jeffrey D. McCausland, eds., *Tactical Nuclear Weapons and NATO* (Carlisle: Strategic Studies Institute (SSI), 2012), 21.
[348] Cumings, "Not War/Not Peace: The Korean Armistice Under a Nuclear Shadow."
[349] Lee, "US Deployment of Nuclear Weapons in 1950s South Korea & North Korea's Nuclear Development."
[350] Bruce Cumings, *Parallax Visions: Making Sense of American–East Asian Relations at the End of the Century* (Durham, NC: Duke University Press Books, 2002), 129.
[351] Peter Hayes, *Pacific Powderkeg: American Nuclear Dilemmas in Korea* (Lexington, Mass: Lexington Books, 1990), 35.

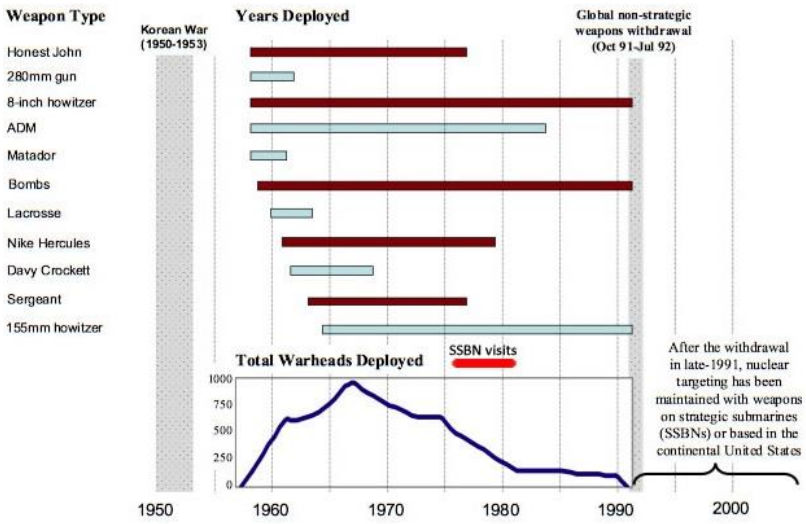

Figure 2: US Nuclear Weapons in South Korea

Hans M. Kristensen, "When the Boomers Went to South Korea," Federation Of American Scientists, accessed December 16, 2015, https://fas.org/blogs/security/2011/10/ssbnrok/.

The deployment of nuclear weapons by the United States near North Korea was not only highly provocative and perceived as a threat by the North but this move also, as Stalin said, "destroyed the balance" in the Korean Peninsula.[352] Therefore, from the North Korean perspective, this threatening action had to be balanced in order to restore a sense of security.

Besides this provocative move, throughout the Cold War, during any confrontation, the United States did not hesitate to explicitly threaten the use of nuclear weapons against North Korea. For example, during the USS Pueblo Crisis[353] or the 1975 Oak

[352] When Stalin learned that the United States had tested an atomic bomb, he said these famous words to Soviet scientists: "A single demand of you, comrades. Provide us with atomic weapons in the shortest possible time. You know that Hiroshima has shaken the whole World. The balance has been destroyed. Provide the bomb- it will remove great danger from us." Lynch, "The Soviet Union: Nuclear Weapons and Their Role in Security Policy," 106–107.

[353] In 1968, the American spy ship USS Pueblo was captured by North Korean forces and this incident increased tension between two countries. Although the United States did not retaliate militarily against North Korea, the use of nuclear weapons was among the options. John Prados and Jack Cheevers, "USS Pueblo: LBJ Considered Nuclear Weapons, Naval Blockade, Ground Attacks in Response to 1968 North Korean Seizure of Navy Vessel, Documents Show," *National Security Archive Electronic Briefing Book No. 453*, January 23, 2014, accessed December 20, 2015, http://nsarchive.gwu.edu/NSAEBB/NSAEBB453/.

incident,[354] the United States always put the nuclear option on the table against North Korea.[355]

In September 27, 1991 President George H.W. Bush announced that all ground based and sea based tactical nuclear weapons would be removed from overseas. Although this announcement did not include gravity bombs, Washington decided to withdraw all nuclear warheads from the Korean Peninsula.[356]

The withdrawal of tactical nuclear weapons from the Korean Peninsula was welcomed by the North Korean Administration, but this initiative did not remove the nuclear threat towards North Korea completely. Firstly, although the United States withdrew nuclear weapons from the peninsula, its global nuclear capabilities and nuclear umbrella over South Korea would continue after the end of the Cold War. Secondly, besides its nuclear capability, another security challenge that Pyongyang leadership was concerned about stemmed from the US's highly sophisticated conventional weapons. The United States with its military bases in the Korean Peninsula as well as in the region and its global power projection capabilities made North Korea continue to feel highly insecure.

In the post-cold war era, North Korea's security concerns were heightened during the Bush Administration when the North was threatened with preemptive attack by the United States. After the September 11 events, the United States altered its security strategy and declared that it would use force preemptively against threats to its national security.[357] For the Bush Administration, North Korea with its WMD arsenal and missile program was defined as a "threat" to the United States.[358] In his State of the Union address on January 2002, President George W. Bush identified North

[354] In 1976, two United States soldiers were killed by North Koreans in DMZ. As a retaliation, the United States sent nuclear capable B-52 bombers to South Korea from Guam. Kang, "Rethinking North Korea," 259.
[355] Youngwon Cho, "Method to the Madness of Chairman Kim: The Instrumental Rationality of North Korea's Pursuit of Nuclear Weapons," International Journal 69, no. 1 (2014): 18.
[356] As two United States soldiers were killed by North Koreans in DMZ. As a retaliation, the United States sent nuclear capable B-52 bombers to South Korea from Guam. David E. Rosenbaum, "U.S. to Pull A-Bombs From South Korea," *The New York Times*, October 20, 1991, accessed December 20, 2015, sec. World, http://www.nytimes.com/1991/10/20/world/us-to-pull-a-bombs-from-south-korea.html.
[357]The principles of new security strategies were described in National Security Strategy, 2002 which is also known as the Bush Doctrine. "The National Security Strategy of the United States of America," September 2002, 17, accessed December 20, 2015, http://www.state.gov/documents/organization/63562.pdf.
[358] Ibid., 14.

Korea as one member of an "axis of evil" of regimes and stated that North Korea threatened world peace. Thus, North Korea became a potential target of United States preemptive action.[359] Moreover, the "Nuclear Posture Review 2002" listed seven countries that could be targets of a United States nuclear attack, North Korea was at the head of the list.[360]

The Bush Administration's belligerent policy toward North Korea increased the security concerns of the North. David Kang states that "While the US calls North Korea a terrorist nation and Donald Rumsfeld discusses the possibility of war, it is no surprise that it feels threatened."[361]

The North's security fears increased after the United States occupied Iraq (another member of the axis of evil) and toppled the Saddam Hussein regime by the use of force in 2003.[362] These concerns forced them to declare their nuclear capabilities in order to deter possible external attacks. In April, 2003 North Korea stated that it possessed nuclear weapons. In 2005, the North defined itself as a nuclear power by stating:

> We had already taken the resolute action of pulling out of the NPT [Nuclear Non-Proliferation Treaty] and have manufactured nukes for self-defense to cope with the Bush administration's evermore undisguised policy to isolate and stifle North Korea.[363]

Nuclear threats from the US toward North Korea have continued after the Bush Administration. For instance, in April 2010, the Nuclear Posture Review (NPR) was published by the Obama Administration. It stated that "the United States will not use or threaten to use nuclear weapons against a non-nuclear weapon state that is both party to the NPT and in compliance with its non-proliferation obligations".[364] Thus,

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[359] Chung-in Moon and Jong-Yun Bae, "The Bush Doctrine and The North Korean Nuclear Crisis," *Asian Perspective* 27, no. 4 (2003): 31.

[360] Tim Beal, *North Korea: The Struggle Against American Power* (London ; Ann Arbor, MI: Pluto Press, 2005), 104.

[361] David C. Kang, "Threatening, But Deterrence Works," in *Nuclear North Korea: A Debate on Engagement Strategies*, by Victor D. Cha and David C. Kang (New York: Columbia University Press, 2003), 44.

[362] Even it is asserted that Kim Jong Il disappeared from public view in 2003 because he may have thought that he would also be a target of the United States like Saddam Hussein of Iraq. Thom Shanker, "In Iraq, U.S. Learned How to Scare Top North Korean," *The New York Times*, May 12, 2003, accessed December 20, 2015, sec. International Style / Asia Pacific, http://www.nytimes.com/2003/05/12/international/asia/12PENT.html.

[363] Anna Fifield, "N Korea Tells World It Has Built N-Weapons," *Financial Times*, February 11, 2005, accessed December 20, 2015, http://www.ft.com/cms/s/0/09b6a48a-7bd3-11d9-9af4-00000e2511c8.html#axzz40Re6UFqx.

[364] "The Nuclear Posture Review Report" (Department of Defense, April 2010), ix.

the 2010 NPR has emphasized that North Korea was excluded from negative security assurances of the United States, meaning that North Korea was still subject to US nuclear threats. For this reason, after the NPR was released, the North Korean Administration made a statement that it would strengthen its nuclear deterrent as long as the U.S. continued to pose a security threat to North Korea.[365]

As a result, the US's hostile policies toward North Korea, based on its nuclear and conventional forces, have been perceived as a serious threat in the eyes of North Korea and have forced the North to develop nuclear weapons to counterbalance these threats and deter attacks from the United States.

Besides direct US threats to North Korea's security, the United States has also indirectly threatened the national security of North Korea with its extended nuclear deterrence strategy which has been maintained in the region since the Cold War began.

4.2.2 U.S. Extended Deterrence in Northeast Asia

United States extended deterrence policy in Northeast Asia has been another factor that has undermined North Korean national security since the end of Korean War.

Extended deterrence, as a strategic concept, can be defined as "a confrontation in which the policymakers of one state ("defender") threatens the use of force against another state ("potential attacker") in an attempt to prevent that state from using military force against an ally of the defender."[366] In extended nuclear deterrence, a nuclear weapon enabled defender protects a non-nuclear ally or allies by extending both its nuclear and conventional capabilities against attacks, threats and coercion from possible aggressor. In this way, the aggressor refrains from taking offensive actions that threaten the security of the ally, because it does not want to be punished

[365] Hyun-Wook Kim, "US Extended Deterrence and the Korean Peninsula," in *Disarming Doubt: The Future of Extended Nuclear Deterrence in East Asia*, ed. Rory Medcalf and Fiona Cunningham (Woollahra: Lowy Institute, 2012), 77.
[366] Paul K. Huth, "Extended Deterrence and the Outbreak of War," *The American Political Science Review* 82, no. 2 (1988): 424.

or suffer defeat by the defender which has ultimate deterrent forces.[367] Extended nuclear deterrence is also referred to as a "nuclear umbrella".

Extended nuclear deterrence has been the main security strategy of the United States in Northeast Asia since the beginning of the 1950s. During the cold war, the US extended its nuclear deterrence for its allies in order to deter attacks from communist bloc adversaries which were the Soviet Union, China and North Korea. In Northeast Asia, extended deterrence is maintained by the United States to defend its non-nuclear allies through bilateral security arrangements. In this context, the United States formally protects two countries under its nuclear umbrella in the region[368]: South Korea and Japan. This bilateral alliance formation (the United States-South Korea based on a 1953 Treaty of Mutual Cooperation and Security and the United States-Japan based on the 1954 Mutual Defense Treaty[369]) not only allowed the United States to deploy its military forces to locations in the region but has also formed the basis for mutual security cooperation such as bilateral security agreements, intelligence sharing and joint military drills.[370]

However, although the Cold War was finished with the disintegration of Soviet Union, the United States has continued its extended deterrence policy to maintain regional stability due to new security challenges such as China's military rise and North Korea's expanding ballistic missile development and nuclear capabilities.[371] In addition to the security dimension, another objective of the US for maintaining its extended nuclear deterrence policy was "to persuade regional allies they did not need to unilaterally acquire destabilizing military technologies including nuclear weapons to safeguard their national security."[372] In other words, the United States' extended

[367] However, For Paul Hauth, based on his empirical study, nuclear weapons obtained by defender state have no great impact on the credibility of extended deterrence against a nonnuclear attacker. Ibid., 428.
[368] In Asia, three countries, Australia, Japan and South Korea are covered by the US nuclear umbrella with bilateral agreements. Although there is no security agreement between Taiwan and the US, Taiwan has ambiguous position related to the US nuclear protection. For instance, China can not be sure that in a military confrontation the United States would not extend its nuclear capabilities for Taiwan. However, in here the term region is referring to Northeast Asia. O'Neil, *Asia, the US and Extended Nuclear Deterrence*, 2.
[369] This treaty was later replaced by 1960 Mutual Defense Treaty signed between Japan and the United States.
[370] O'Neil, *Asia, the US and Extended Nuclear Deterrence*, 17.
[371] Brad Roberts, "Extended Deterrence and Strategic Stability in Northeast Asia," *NIDS Visiting Scholar Paper Series*, no. 01 (2013): 1.
[372] O'Neil, *Asia, the US and Extended Nuclear Deterrence*, 18.

deterrence policy has not only shaped the security considerations of allied states in Northeast Asia but has also served as a supporting tool for the global nonproliferation regime.

As a result, this alliance mechanism, led by the United States in the region, has become a constant security concern for North Korea since its establishment. Although this alliance formation has been established for defensive purposes, why has it posed a serious threat to North Korea's security? In the anarchic system where there is no supreme authority, states fear each other. One reason for this fear is the uncertainty of one another's intentions. Due to this uncertainty, as Paul K. Huth argues, "in a situation of extended deterrence, the intended defensive military actions of the deterrer can be perceived by the potential aggressor as an offensive threat…"[373] Another factor that increases this uncertainty is that, with technological innovations, there is no clear cut differentiation between offensive and defensive military weaponry. John Mearsheimer argues that "there is no recognized set of criteria for assigning specific weapons either defensive or offensive weapons."[374] In other words, it is difficult to predict the clear intentions of other states from the knowledge of their military capabilities because defensive military assets can be used against an adversary for offensive purposes.

The US's extended deterrence has also had an impact on the distribution of capabilities in the region against North Korea with its military presence. In addition to the nuclear weapon deployments, the United States contained the North with military bases located in South Korea and Japan based on bilateral alliance formations. According to a RAND Corporation report, for 2013, the US has

[373] Huth, "Extended Deterrence and the Outbreak of War," 423.

[374] This argument is one of the criticisms of the offense-defense balance theory. However, offense-defense balance theorists argue that the total impact of all weapons systems is more important than the individual characteristics of weapons. For instance, while Samual Huntington claims that all the weapons cannot be categorized as defensive or offensive, he admits that it is possible to distinguish offensive and defensive military capabilities, foreign policy goals and military strategies. Jack S. Levy, "The Offensive/Defensive Balance of Military Technology: A Theoretical and Historical Analysis," *International Studies Quarterly* 28, no. 2 (1984): 226; Mearsheimer, "The False Promise of International Institutions," 23; Sean M. Lynn-Jones, "Offense-Defense Theory and Its Critics," *Security Studies* 4, no. 4 (1995): 674–675.

permanently deployed 28,500 military personnel in South Korea. In Japan, nearly 35,000 US troops are positioned in the US military installations and units.[375]

Other issues related to US extended deterrence that make Pyongyang feel threatened are joint military exercises, war games or combined drills carried out by the alliance members, especially the United States and South Korea. Joint military exercises by the two states have been held regularly in the region since the end of the Korean War.[376] Military exercises generally prepare armed forces for real conflict situations. However, these joint drills also aim to strengthen the alliance, assure South Korea by testing combat readiness and deter any North Korean aggression. These military drills, which generally involve nuclear capable bombers, have threatened North Korea's security. For instance, Kim Il Sung, in a dialogue with U.S. official Gary Ackerman who visited the North in 1993, called the Team Spirit military exercises, "a dress rehearsal for an invasion."[377] As mentioned in the second chapter, the cancellation of Team Spirit exercises was one of the preconditions for the resumption of nuclear talks between the United States and North Korea. One possible reason why military exercises are so worrisome for the North might be because the North Korea itself, before the Korean War started in 1950, used military exercises to cover its military mobilizations.[378]

In short, the alliance systems under US extended nuclear deterrence strategy in Northeast Asia cause North Korea to feel isolated and unprotected in the region. This formation might drive North Korea to consider the nuclear option as a response to the uncertainties. Nuclear weapons, because of their unique characteristics, change all strategic calculations. As Waltz states "Strategies may do more than weapons to determine outcome of wars. Nuclear weapons are different, they dominate strategies."[379]

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[375] Michael J. Lostumbo et al., *Overseas Basing of U.S. Military Forces* (California: RAND Corporation, 2013), 25–30, accessed December 21, 2015, http://www.rand.org/pubs/research_reports/RR201.html.

[376] The first US–South Korea combined military exercises were held in 1955. For a brief historical development of US–South Korea combined military exercises. Robert Collins, "A Brief History of the US-ROK Combined Military Exercises," *38 North*, February 24, 2014, accessed December 21, 2015, http://38north.org/2014/02/rcollins022714/.

[377] Oberdorfer, *The Two Koreas*, 273.

[378] John Farrell, "Team Spirit: A Case Study on the Value of Military Exercises as a Show of Force in the Aftermath of Combat Operations," *Air and Space Power Journal* Fall (2009), accessed November 27, 2015, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj09/fal09/farrell.htm.

[379] Waltz, "Nuclear Myths and Political Realities," 738.

4.2.3 South Korea as a Challenging Rival State

Since the division of the peninsula, South Korea as a "rival Korean state on a shared peninsula" represents one of the most significant threats to North Korean national security. For North Korea, the security threat that is posed by South Korea has stemmed mainly from its reunification ambitions and its increasing military capabilities.

4.2.3.1 South Korea's Reunification Policy toward North Korea

Although the national reunification of the two Koreas has always been one of the top priority tasks on the political agenda of South Korea as well as for the North since the division of the Korean peninsula, especially after the end of the Cold War, South Korea's reunification strategies have become a serious security concern for the North.

During the Cold War, the unification of Korea was not achieved because the bipolar nature of international structure constrained the efforts of the two states to unify the Korean nation into state. However, since the beginning of the 1990s, as North Korea faced great danger with the collapse of its main allies, the Soviet Union and Eastern Bloc Countries, South Korea emerged as the only Korean state able to unify the peninsula on its own terms.

Thus, in order to take advantage of North Korea's weakened position, South Korea has confidently pursued a more active policy toward the North towards reunification in the post-Cold War era.[380] But North Korea has viewed the South's efforts as a threat because the South expects to establish a unified Korea with liberal democracy and market economy. This means that the unification of the two states, whether through soft landing or hard landing, will eventually bring an end to the North Korean political regime. For North Korea expert Andrei Lankov, even a

[380] During the Roh Tae-woo Presidency (1988-1993), Seoul pursued a policy toward the North called as "nordpolitik" (inspired from Ostpolitik of West Germany). The main aim was to leave North Korea in a more isolated position and thus, force it open a dialogue with the South. For this reason, during this period of time, South Korea normalized its relations with China and Russia which were two main allies of the North. Jangho Kim, "Ostpolitik Revisited: The Lessons and the Remaining Consequences of Nordpolitik," *International Area Studies Review* 13, no. 3 (Autumn 2010): 73–88; in 1998, President of South Korea Kim Dae Jung turned a new page in inter-Korean relations with a new policy named "sunshine policy". This new policy which was later continued by the government of Roh Moo-hyun until 2008 focused on engagement with the North. Victor Cha, *The Impossible State: North Korea, Past and Future* (London: Bodley Head, 2012), 387.

confederation could only be established by the two Koreas if the current North Korean regime changes.[381] In other words, under any unification scenarios [382], there would be no room for the Kim Dynasty. Therefore, North Korea does not want any type of unification in the Peninsula.[383] For South Korea, the North's political regime and its nuclear weapons program as "a last line of defense against absorption"[384] represent the main challenges to the reunification of the two Koreas.[385]

Not only have South Korea's reunification strategies concerned the North in terms of its security but Seoul's advanced military capabilities have also posed a serious threat to North Korea's security. The South Korean covert nuclear weapons program under President Park Chung Hee in 1970s and then its increased conventional superiority over North Korea are other security concerns that have pushed the North to acquire nuclear weapons to safeguard its national interests.

4.2.3.2 The South Korean Clandestine Nuclear Program and its Military Ascent

South Korea's nuclear ambitions under the Park Administration in the 1970s and its expanding conventional capabilities relative to the North, alongside its growing economy have become a serious security concern for North Korea.

As discussed before, after the Korean War, South Korea has relied on the United States for its national security needs which is based on a 1953 mutual security treaty agreement signed between the two countries. In line with this treaty, the United States has deployed tactical nuclear weapons and military personnel to the Peninsula in order to deter any North Korean invasion and assure South Korea as its ally.

However, the developments of the1960s and 1970s in the regional security environment inclined South Korea to question the United States' security

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[381] Lankov, *The Real North Korea*, 269.

[382] Basically, there are four type of unification scenarios for the Korean Peninsula: 1) Unification by absorbtion, 2) Unification by force, 3) Unificiation by consensus, 4) Unification by trusteeship. Jong-Yun Bae, "South Korean Strategic Thinking toward North Korea: The Evolution of the Engagement Policy and Its Impact upon U.S.-ROK Relations," *Asian Survey* 50, no. 2 (2010): 344.

[383] For Alexandre Mansourov, North Korea, because of its complicated problems, does not want any unification even in its own terms. Alexandre Y. Mansourov, "'Gorbify,' 'Cubify' and Wi-Fi An Alternative Road Map to Korean Reunification," *Washington Times*, October 15, 2015, accessed December 21, 2015, http://www.washingtontimes.com/news/2015/oct/15/alexandre-mansourov-alternative-road-map-to-korean/.

[384] Mel Gurtov, "South Korea's Foreign Policy and Future Security: Implications of the Nuclear Standoff," *Pacific Affairs* 69, no. 1 (1996): 16.

[385] Evans J. R. Revere, "Korean Reunification and U.S. Interests: Preparing for One Korea," *The Brookings Institution*, accessed February 16, 2016, http://www.brookings.edu/research/presentations/2015/01/20-korean-reunification-revere.

commitments and pushed the South to build its own nuclear deterrent forces and strengthen its conventional forces against North Korea.

At the end of the 1960s, South Korea was shocked with the announcement of President Nixon in Guam[386] concerning the United States' intentions in the region. This declaration signaled that there would be a military reduction on the Korean Peninsula as well as in the Asia region. As a matter of fact, the United States withdrew its Seventh Infantry Division from South Korea. Furthermore, during this time period, North Korean military infringements[387] against the United States and South Korea became worrying issues for the South. These developments made the South feel threatened and increased its fear of abandonment. Additionally, the security concerns of South Korea rose when the United States rapprochement with China took place at the beginning of the 1970s.[388]

In light of these developments, in terms of its relationship with the United States, South Korea was forced to strengthen its own military capabilities. Thus, South Korea decided to establish its own nuclear deterrent forces and strengthen its conventional capabilities.

Park Administration initiated its covered nuclear weapons program at the beginning of 1970s. However, the United States learned of South Korea's clandestine nuclear weapon program right after the Indian nuclear test of 1974.[389] When the US discovered the secret nuclear ambitions of its ally, it immediately threatened South Korea with military and economic abandonment. Besides its pressure on the South, the United States increased its security commitments to South Korea in order to strengthen deterrence against North Korea in the Peninsula. In 1975, the United States and South Korea decided to hold "Team Spirit" military exercise annually.[390]

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[386] This statement is also known as the Guam or Nixon Doctrine in Cold War history. This was a Vietnamization plan as a part of Nixon's policy to end the Vietnam Policy.

[387] In January 1968, North Korea commandos infiltrated South Korea and attempted to assasinate President Park. Also, the USS Pueblo incident, mentioned earlier and the EC 121 incident in which an American EC-121 reconnaissance plane was shot down by North Korea, happened at the end of the 1960s.

[388] Mark Fitzpatrick, "Republic of Korea," in *Asia's Latent Nuclear Powers: Japan, South Korea and Taiwan*, vol. 55 (Adelphi Series, 2015), 19, accessed December 21, 2015, http://www.tandfonline.com/doi/abs/10.1080/19445571.2015.1146021.

[389] Mazarr, *North Korea and the Bomb*, 27.

[390] President Jimmy Carter also had intentions to withdraw US troops from the Korean Peninsula. Team Spirit military exercises would be a cover for this withdrawal. However, he could not withdraw the troops from the peninsula because of the North Korean military threat. Farrell, "Team Spirit: A

Another important development that took place in 1978 was the creation of the Combined Forces Command (CFC). Thus, Operational Control (OPCON) over South Korean forces would be exercised in both war-time and peace time period by a US general, the Commander of CFC.[391]

As a response to weakening United States security assurances, South Korea also decided to strengthen its conventional capabilities. With United States military aid and its prosperous national economy, South Korea increased indigenous military production and modernized its conventional capabilities.[392]

While the North has built one of the largest armies in the world, its military preparedness, combat effectiveness and capabilities have declined, especially since the demise of its main ally, the Soviet Union. The problems with North Korean military forces can be summarized as follows:

> North Korea's military capabilities are limited by an aging weapons inventory, low production of military combat systems, deteriorating physical condition of soldiers, reduced training, and increasing diversion of the military to infrastructure support. Inflexible leadership, corruption, low morale, obsolescent weapons, a weak logistical system, and problems with command and control also constrain the KPA capabilities and readiness.[393]

Thus, although the North Korean's military is much bigger than South Korea's as pointed out table 5, especially after the Cold War, the South has qualitative superiority in conventional forces and makes the military balance between the two Koreas shift in favor of the South.

Table 5: The Conventional Military Balance in the Korean Peninsula

	North Korea	**South Korea (and US Forces)**
Defence expenditure	$ 8.2 billion (2008)	$ 25 billion (2010)
Percentage of GDP	22-24 %	2,6 %
Ground Forces		
Active troops	1.2 million	655,000 (+28,000)

Case Study on the Value of Military Exercises as a Show of Force in the Aftermath of Combat Operations"; Oberdorfer, *The Two Koreas*, 101–107.

[391] Although peace time control would be transferred to South Korean forces in 1994, in the event of war, U.S. military commanders would continue to take control of both U.S. and South Korean forces. Hwee Rhak Park, "The Transfer of Wartime Operational Control in Korea: History, Risks and Tasks from a Military Perspective," *The Korean Journal of International Studies* 8, no. 2 (December 2010): 328,339.

[392] Chung-in Moon and Sangkeun Lee, "Military Spending and The Arms Race on the Korean Peninsula," *Asian Perspective* 33, no. 4 (2009): 74–77.

[393] IISS, *North Korean Security Challenges*, 54.

Reserves and paramilitaries	5-7.7 million	3 million
Tanks	4,100	2,400 (+50)
Armoured personnel carrriers	2,500	2,600 (+110)
Field artillery pieces (1)	8,500	5,200 (+16)
Multiple rocket launchers	5,100	200 (+40)
Mortars	7,500	6000
Air defence guns	11,000	300
Air forces		
Combat aircraft	820 (max 620 serviceable)	460 (+90)
Helicopters	300	680 (+120)
Naval Forces		
Principle surface combatants (2)	3	19
Patrol and coastal combatants (3)	383+	111
Submarines	70	23
Hovercraft	135	5
Landing ships and craft	130	41

(1) With 122 mm or more
(2) Combat vessels with a full-load displacement greater than 1,500 tonnes
(3) Combat vessels (including corvettes) with a full-load displacement of 1,500 tonnes or less
(4) Including all types and displacements

IISS, North Korean Security Challenges, 54.

From North Korea's point of view, following the basic logic of the security dilemma in which an increase one's own security decreases the other one, the South's efforts to develop nuclear weapons and to enhance its conventional capabilities has caused North Korea's security concerns to increase.

As nuclear weapons can be deterred only by nuclear weapons, the South's secret attempts to obtain a bomb became a serious motive for North Korea to pursue its nuclear weapons program.[394] Peter Hayes claims that "The North Koreans were

[394] The South's efforts to build its own nuclear forces not only motivated Pyongyong to establish its own nuclear deterrence, but also this attempt deepened the mistrust of Kim Il Sung towards the South. For Alexander Mansourov, when Kim Il Sung learned of the covert nuclear weapons program of the South, he felt trapped by the Park Administration because during this time, the Joint North-South Declearation was signed in 1972 between two leadership. Mansourov, "The Origins, Evolution, and Current Politics of the North Korean Nuclear Program," 28–29.

assuredly also intensely aware of the South's drive, and this knowledge likely accelerated the North's own early program."[395]

The asymmetric balance of conventional forces between two Koreas has also pushed North Korea to develop nuclear weapons and ballistic missile programs because nuclear weapons with a reliable ballistic missile technology would place the North in a secure position by strengthening its deterrence capabilities.

4.2.4 The Japanese Threat

"Tokyo would be the first target in the event of a war on the Korean Peninsula." According to South Korean Yonhap News Agency, this warning comes from North Korea to Japan.[396] There is no doubt that Japan has taken a special place in North Korea's external security concerns. The historical legacy of the Japanese Imperial period before and during the World War Two and Japan's military capabilities has made Japan a serious threat to North Korea's national security. Japan's close tie to the United States is another worrying issue for North Korea.

Historical memories about Imperial Japan's attitudes toward the people of Korea have played a significant role in the Japanese threat perception of North Korea. Robert Jervis argues that "decision-makers tend to fit incoming information into their existing theories and images".[397] So, historical the experiences of states could have an important effect when it comes to defining another state's intentions.

The Korean Peninsula was recognized as part of Japan's sphere of influence in the Portsmouth Peace Treaty which was signed between Japan and Russia after Japan defeated Russia in the 1904-1905 Russo-Japanese War. However, Japan formally annexed the Korean Peninsula in 1910. Throughout the Japanese colonial period until the end of the World War Two, the people of Korea suffered seriously from the harsh policies of Japan toward them.[398] Japan implemented assimilation policies on

[395] Peter Hayes and Chung-in Moon, "Park Chung Hee, the CIA, and the Bomb" (NAPSNet Special Reports: Nautilus Institute, September 23, 2011), 14, accessed December 21, 2015, http://nautilus.org/napsnet/napsnet-special-reports/park-chung-hee-the-cia-and-the-bomb/.
[396] "N. Korea Warns Japan against Hostile Stance," *Yonhap News Agency*, December 4, 2013, accessed December 21, 2015, http://english.yonhapnews.co.kr/0101000000.html.
[397] Jervis, "Hypotheses on Misperception," 455.
[398] It is also true that Japanese colonialism also provided economic prosperity in the Korean Peninsula. For instance, heavy industry established by Japanese in the North of the Peninsula provided a basis for North Korea's economic development.

the people of Korea during the Colonial period. For instance, they banned the learning of Korean history, the use of Korean language and Korean names. They forced Koreans to transform their names to Japanese ones.[399] The Japanese government tried to eradicate the Korean national identity and Korean culture with these harsh policies.

Koreans were bitterly suppressed by Japanese forces during the Second World War. In war time, thousands of Korean women (which were known as "comfort women") were forced to serve as sex-slaves for the Japanese army. Many Koreans were forced to work in Japanese mines, construction sites and industrial factories.[400]

Due to the harsh Japanese treatment of the Korean People during the colonial period, strong anti-Japanese feelings have remained among North Korean people. The historical legacy of Japan has even become a "source of regime and leadership legitimacy".[401] It should be noted that Kim Il Sung, North Korea's founder, emerged as a legendary leader because of his struggle against Japanese Imperialism.

The other worrying issues for North Korea are Japan's military capabilities and its geopolitical position as the main ally of the United States.

After the end of World War Two, The United States wanted a demilitarized Japan that would no longer be a source of aggression. Thus, Japan has put constitutional limits on its military establishment. Article 9[402] of the Japanese post war constitution which was adopted in 1947 has constrained the establishment of Japanese military forces. However, with the beginning of the Cold War, the United States changed its thinking on the complete disarmament of Japan because it began to view Japan as an

[399] Rachel Blomquist and Daniel Wertz, "An Overview of North Korea-Japan Relations" (The National Committee on North Korea, June 2015), 1, accessed December 21, 2015, http://www.ncnk.org/resources/briefing-papers/all-briefing-papers/ncnk-issue-brief-dprk-japan-relations-an-historical-overview.

[400] Tae-Ryong Yoon, "Historical Animosity Is What States Make of It: The Role of Morality and Realism in Korea-Japan Relations," *The Korean Journal of International Studies* 9, no. 1 (June 2011): 25–27.

[401] Han S. Park, "The Rationales behind North Korean Foreign Policy," in *North Korea Policy: Japan and the Great Powers* (London: Routledge, 2006), 45.

[402] Article 9 of the Japanese Constitution states that "Aspiring sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes. In order to accomplish the aim of the preceding paragraph, land, sea, and air forces, as well as other war potential, will never be maintained. The right of belligerency of the state will not be recognized. " "The Constitution of Japan," *Prime Minister of Japan and His Cabinet*, accessed March 3, 2016, http://japan.kantei.go.jp/constitution_and_government_of_japan/constitution_e.html.

ally in the struggle against Communist forces in the region. Thus, with the encouragement of the United States, at the beginning of 1950s, Japan established a "National Police Reserve" and "National Safety Force (NSF) which later turned to Self-Defense Force in 1955 to exercise the right of individual self-defence.[403] Since the end of 1950s, Japan's "Self-Defense Forces" (SDF) have included an army, navy and air force of over 200,000 members. Over time, Japan's SDF has become a significant military power in the region with sophisticated military technology. In 2008, Japan ranked seventh in the world in total defense expenditure.[404] Furthermore, although Japan is the only country in the world that has been exposed to a nuclear strike, and gives strong support to the nuclear non-proliferation efforts of international community[405], it should be noted that Japan is one of the most advanced nuclear threshold country in the world, meaning that it has nuclear materials, nuclear technology and the know-how which allows them to be used for military purposes if political will existed. For delivery systems, Japan does not have a ballistic missile program but it has a highly sophisticated space industry which includes the same technology used in ballistic missiles.[406]

In addition to its own military capabilities, after the end of World War Two, Japan has become the most important and the most reliable ally of the United States in the region. As mentioned before, US military bases are located on Japanese territory as a part of its extended nuclear deterrence policy. One important reason why North Korea worries about the United States military installations in Japan is that the United States actively used these military bases against North Korean forces in the Korean War.[407]

The occupation of Korea by the Japanese Imperial military and the emergence of Japan as a dominant figure in the region before World War Two reflect the potential

[403] Christopher Hughes, "Chapter One: The Trajectory of Japan's Remilitarisation," *The Adelphi Papers* 48, no. 403 (2008): 23.
[404] Lauren Corvese, "Reviving a Power in East Asia: Japanese Remilitarization," *The Northeastern University Political Review*, February 12, 2014, accessed December 21, 2015, http://www.nupoliticalreview.com/?p=3210.
[405] Japan has three non-nuclear principles which includes "not to produce, possess or introduce nuclear weapons." Hughes, "Chapter One," 26.
[406] Japan defends its mainland with defense systems in cooperation with the United States. "Japan," *Nuclear Threat Initiative (NTI)*, November 2014, accessed December 21, 2015, http://www.nti.org/learn/countries/japan/delivery-systems/.
[407] Yuko Kawato, *Protests Against U.S. Military Base Policy in Asia: Persuasion and Its Limits* (Stanford University Press, 2015), 47.

of Japan's ambitions.[408] In other words, Japan, with its powerful military, having occupied Korea in the past means that a Japanese occupation may happen in the future. North Korean decision makers are aware of this possibility. For instance, during the negotiations between the United States and North Korea before the first nuclear crisis, referring to Japan's role in the region, Kim Yong Sun, North Korean official, said to his American counterpart that the United States military forces may stay in the peninsula even if national unification takes place.[409]

The "Japanese threat" has become a motivating factor for North Korea to obtain the nuclear deterrent because the possession of nuclear weapons reduces the security concerns of North Korea in terms of Japan. In fact, history shows that no country that possesses nuclear deterrence forces has been conquered or occupied by other states.

4.2.5 The China Factor

The relationship between China and North Korea was described as "lips and teeth" by Chinese Leader Mao Zedong in order to emphasize the closeness of this relationship.[410] This closeness has deepened after the end of the Cold War and China has become the most important ally of North Korea. However, as the teeth might bite lips, China would be a security concern for Pyongyang. But, the question is that how China poses a threat to North Korea like other "hostile" nations in the region, while at the same time it becomes Pyongyang's ally? Before examining this question, China's main priorities in the Korean Peninsula have to be analyzed.

As China is one of the main supporters of the global nonproliferation regime, it is true that China prefers a nuclear free Korean Peninsula. Additionally, nuclear proliferation in the region is a concerning issue for China because a possible nuclear arms race in the region could be triggered by North Korean nuclear activities which jeopardizes the national security of China. However, the denuclearization of North Korea is not the first priority for China in the Korean Peninsula.

[408] Yoon, "Historical Animosity Is What States Make of It: The Role of Morality and Realism in Korea-Japan Relations," 8.
[409] Wit, Poneman, and Gallucci, *Going Critical*, 12–13.
[410] Hannah Beech, "What Will China's Next Move on North Korea Be?" *Time*, November 24, 2010, accessed December 27, 2015, http://content.time.com/time/world/article/0,8599,2033011,00.html.

The ranking of China's priorities in the Korean Peninsula can be described as "no war, no instability, no nukes."[411] Peaceful development is one of the main political objectives of China. As peaceful development can only be achieved in a peaceful and stable environment, the first and foremost aim of China in the Korean Peninsula is to maintain peace and stability. Besides, it can be asserted that although there is no peace agreement between two Koreas, the stability of the peninsula has remained intact since the end of the Korean War, simply because deterrence works.[412] For this reason, the maintaining of status quo in the region serves China's national interests.

The maintenance of a status quo, in other words, supporting the existence of North Korea also increases China's security in other ways. Traditionally, China supports the survival of North Korea because of its geo-political position as a strategic buffer-zone. In fact, the Korean Peninsula has a strategically important position for China. The words of a Chinese official from the Ming Dynasty demonstrate the importance of Korea for China's security: "the protection of Chosun is central to the security of China while securing Kyongsang and Cholla Provinces (of Korea) is the key to protecting Chosun".[413] Chinese participation in the Korean War also showed the strategic importance of Korea for China. Mao describes the important position of North Korea by stating that "Whereas North Korea is the frontline, China constitutes the second line."[414] In the Korean War, while nuclear capable U.S. military forces along with South Korea were fighting against North Korea, China got involved the war and sent millions of troops to counter the combined forces.

The existence of North Korea is also important for China because the situation allows China to reduce its military deployment in its northeast region and give more attention to the Taiwan issue which concerns China's core interests.[415] China's military might plays an important role in the Taiwan issue because in the case of a declaration of independence by Taiwan, China would not hesitate to use of military force against it.[416] Also, for Chinese security planners, North Korea constrains the

[411] Bonnie S. Glaser et al., "Reordering Chinese Priorities on the Korean Peninsula" (Washington, D.C: Center for Strategic and International Studies, November 2012), 1.
[412] Kang, "Threatening, But Deterrence Works," 44.
[413] Jae Ho Chung and Myung-hae Choi, "Uncertain Allies or Uncomfortable Neighbors? Making Sense of China–North Korea Relations, 1949–2010," *The Pacific Review* 26, no. 3 (2013): 245.
[414] Ibid., 246.
[415] Shen Dingli, "North Korea's Strategic Significance to China," *WSI China Security* 2, no. 3 (Autumn 2006): 20.
[416] Mearsheimer, "Taiwan's Dire Straits," 30.

influence of the US against China's peaceful ascent. China is uncomfortable about the military presence of the US in East Asia. It has some concerns that the United States wants to contain its rise.[417] Thus, by supporting North Korea, Chinese Leadership holds North Korea as a "hidden card" against the United States policies toward China.[418]

Another security concern for China related to North Korea is that in the event any political disorder caused by the collapse of the North Korean regime, millions of refugees would be expected to move to China which might cause great instability in the northeast region of China.[419]

Additionally, as North Korea possesses nuclear weapons and biochemical agents, what the WMD situation would be if there political turmoil breaks out in North Korea is another question that not only China but also other powers in the region have to deal with.

So, a divided Korea puts China in an advantageous position in the region. But, why then is North Korea worried about China, despite of all these converging interests between the two States? Since the end of the Cold War, especially as the isolation of North Korea from the international community deepens, the economic dependency of the North on China also increases. As figure 3 demonstrates, China as the main trading partner of Pyongyang has become the dominant state in terms of the North's foreign trade.

[417] Bonnie S. Glaser, "Pivot to Asia: Prepare for Unintended Consequences," *Center for Strategic and International Studies*, 2012, accessed April, 9 2016, http://csis.org/publication/pivot-asia-prepare-unintended-consequences.

[418] Dong Ryul Lee, "China's Policy and Influence on the North Korea Nuclear Issue: Denuclearization And/or Stabilization of the Korean Peninsula?," *Korean Journal of Defense Analysis* 22, no. 2 (2010): 171–172.

[419] However, this issue is highly controversial. For instance, according to China Analyst Tianyi Wang from George Town University, because the Chinese Government's treatment of North Korean defectors is negative, most of these try to reach South Korea or any other neighboring country through China instead of staying there. She also argues that China has the capability to deal with any refugee crisis which might happen as a result of a political disorder in North Korea. And also, to curb the adverse effects of this humanitarian crisis on the global economy, other major powers such as the United States, Japan, Russia would also help China to handle this issue. Tianyi Wang, "Small State, Big Influence: China's North Korea Policy Dilemma," *Georgetown Journal of Asian Affairs*, Fall/ Winter 2014, 11–12.

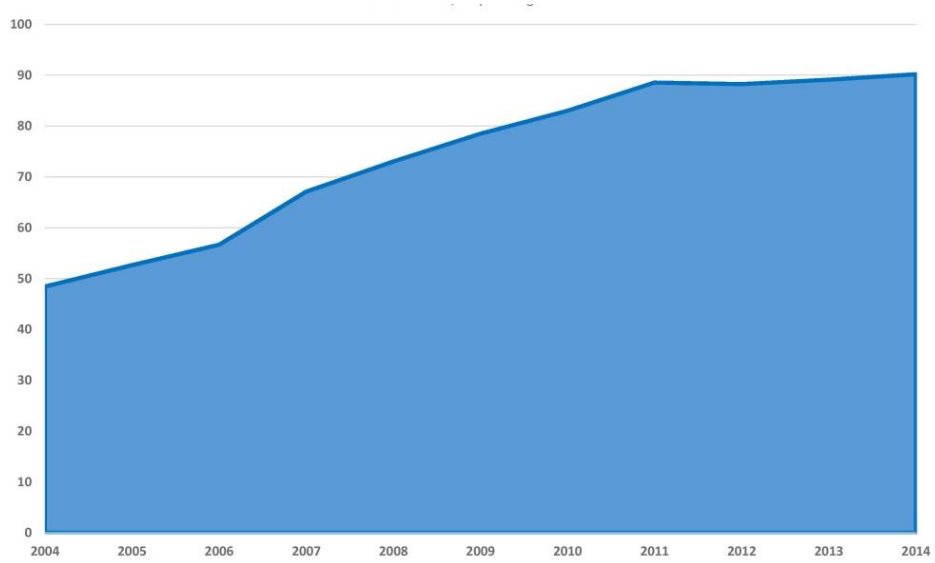

Figure 3: Trade with China as Percentage of Total North Korean Trade, 2004-2014

Ruediger Frank, "North Korea's Foreign Trade," 38 North, October 22, 2015, accessed April, 9 2016, http://38north.org/2015/10/rfrank102215/.

This asymmetrical relationship between the two neighbor states increases Chinese leverage over North Korea and sometimes can be used by China to constrain North Korea's behaviors. For instance, in March 2003, China cut off its oil supply to North Korea for three days. Although it would later be said that the cut occurred because for technical reasons, it was reported that China had sent a message to the North Korean administration demanding changes in its behavior.[420]

Although this situation is highly disturbing for the North Korean administration, the main issue that concerns North Korea in terms of China is related to "the shadow of future". Kim Jong Il reportedly said that "Make use of China but don't trust China."[421] As was mentioned in the first chapter, the intentions of states might change in an anarchical world order. Mearsheimer states that:

> The problem, however, is that it is impossible for states to be sure about each other's intentions, especially future intentions. A neighbor might look and sound like a status quo power, but in reality is a revisionist state. Or it might be a status quo state today, but change its stripes tomorrow.[422]

[420] Ren Xiao, "Korean Security Dilemmas: Chinese Policies," in *Reconstituting Korean Security: A Policy Primer*, ed. Hazel Smith (Tokyo ; New York: United Nations University Press, 2007), 152.
[421] Jin Moo Kim, "North Korea's Reliance on China and China's Influence on North Korea," *The Korean Journal of Defense Analysis* 23, no. 2 (June 2011): 266.
[422] Mearsheimer, "Structural Realism," 75.

Within this in mind, depending on its relations with the United States, China may prefer a denuclearized, democratic, economically rich and unified Korea instead of nuclear armed and highly provocative, poor North Korea.[423] Such a change in China's North Korean policy would bring the end of the North Korean state.

Another worst case scenario for North Korea related to China is about China's approach to ruling the elites of North Korea. China support of North Korea does not mean that China will preserve the ruling Kim Family in power.[424] In other words, China may prefer to live with a more "Chinese" neighbor and might attempt to make an intervention in North Korea to change the current rulers as it once tried in 1956.

All of these possibilities endanger North Korean national security. However, related to this issue, possessing nuclear weapons strengthens North Korea's position against China. As Waltz notes, nuclear armed states behave cautiously when they deal with each other[425] because any possible misunderstanding between two nuclear armed states may cause catastrophic humanitarian and environmental harm. Thus, nuclear weapons increase North Korea's freedom of action against China.

As a result, North Korea has developed nuclear weapons and has no intention to abandon them because nuclear weapons play a vital role in dealing with its external security concerns, as mentioned above.

However, according to the neorealist school of thought, as explained in the first chapter, there are also other strategic options for a state to reduce its external threats. In the next section of this chapter, the reasons why developing nuclear weapons can be considered a rational option for North Korea to increase its security will be analyzed.

4.3 Why has the "Nuclear Option" been a rational choice?

As neorealism assumes, the main aim of North Korea, like any other state in the system, is to pursue its existence in the anarchical world order. As detailed above,

[423] This argument is highly controversial because of the strategic value of North Korea for China as mentioned above and increased US and Chinese competition in the region. However, it is also true that the increasing nuclear activities of North Korea is seriously annoying the Chinese leadership. Chris Hogg, BBC News and Seoul, "Wikileaks Cables: China 'Frustrated' by North Korea," *BBC News*, accessed March 1, 2016, http://www.bbc.com/news/world-us-canada-11871641.
[424] Lankov, *The Real North Korea*. 183-185.
[425] Waltz, *The Spread of Nuclear Weapons*, 8.

North Korea has had serious security concerns in the region. The nuclear threat from the United States has been the most important one among them. Kim Il Sung reportedly believed that an attack on North Korea was inevitable and for North Korean officials, if war erupted in the peninsula, it would be a nuclear war.[426] For Sagan, when a state is faced with a nuclear threat, it has two options. One is to build up its own nuclear deterrent forces; the other is to seek a nuclear armed ally to balance the nuclear threat.[427] It has already been demonstrated in the second chapter that building its own nuclear deterrent has been a long road for North Korea. In this section, it is argued that North Korea has used its "nuclear option" to reduce external threats because other strategic options have not met the national security needs of the North. Within this context, firstly, the alliance choices of North Korea to counter threats will be examined. Then, the internal balancing efforts of the North will be discussed. As the nuclear activities of North Korea are the main theme of this thesis, although the "nuclear option" is a type of internal balancing behavior, it will be explored separately. At the end, two nonproliferation cases which have had effects on North Korea's nuclear decision making will be analyzed.

4.3.1 Alliance Choices

To engage in security cooperation with other actors in the system is one way for a state to ensure its national security. There are different alliance choices for a state under threat. Balancing is the most common form, and North Korea chose that option to counter external threats, especially those coming from the United States. With the beginning of the Cold War, as the US and its allies in the region became a common threat to Soviet Union and China, the US nuclear threat pushed North Korea close to the two communist nations.

Thus, three years after the first nuclear weapons were deployed to the Korean Peninsula by the United States, North Korea and the Soviet Union signed a Treaty of Friendship, Cooperation and Mutual Assistance in 1961 and within one week, North Korea signed a Treaty of Friendship, Cooperation and Mutual Assistance with China. Both treaties had military assistance clauses committing the aid of one party to other

[426] Baya Harrison, "Through the Eyes of the Hermit: The Origins of North Korea's Quest for the Bomb," *Stanford Journal of East Asian Studies,* 7, no. 1 (Winter 2007): 55.
[427] Sagan, "Why Do States Build Nuclear Weapons?," 57.

if it were attacked. Thus, these two communist nations provided positive security assurance to North Korea.[428]

The support of the Soviet Union, which was one pole of the Cold war system, was especially important for North Korea in its security measures against US nuclear threats because the Soviet Union was the only nuclear armed country in the communist bloc. China detonated its first nuclear test in 1964.

Alliance formations have both benefits and costs for states. They are beneficial because they are time efficient and less costly compared to internal balancing which is another form of balancing behavior. However, the problem with alliance choices lies in credibility. In other words, cooperation with another state in terms of national security would be less reliable for a state than building its own armaments because the former situation is based on the commitments of other states. Theoretically, entrapment and abandonment are two important problems of alliance formations. Abandonment is very crucial for small states because it occurs when the allied power leaves the other state in its time of need. During the Cold War, although the "1956" incident already created mistrust between Kim Il Sung and the two allied communist powers, subsequent events forced the North to further question the security guarantees of these nations. The Soviet Union's attitude toward its ally Cuba in the Cuban Missile Crisis decreased the credibility of the Soviets to North Korea, because, for North Korean Leader Kim Il Sung, Moscow had abandoned its ally Cuba during the crisis.[429] For instance, in January 1965, a North Korean official talked to Soviet Premier Aleksei Kosygin and said that due to the Cuban Missile Crisis, the North Korean administration felt that it "could not count that the Soviet government would keep the obligations related to the defense of Korea it assumed in the Treaty of Friendship, Cooperation and Mutual Assistance."[430] Actually, the North Korean official was partly true about the credibility of Russian security guarantees. After the Cold War was ended, on June 30, 1992, Russian Leader Boris Yeltsin

[428] John S. Park, "Assessing the Role of Security Assurances in Dealing with North Korea," in *Security Assurances and Nuclear Nonproliferation*, ed. Jeffrey Knopf, 1st edition (Stanford, California: Stanford Security Studies, 2012), 202.
[429] Mansourov, "The Origins, Evolution, and Current Politics of the North Korean Nuclear Program," 28.
[430] James Person, "North Korea and the Cuban Missile Crisis," *Wilson Center*, October 15, 2012, accessed March 20, 2016, https://www.wilsoncenter.org/publication/north-korea-and-the-cuban-missile-crisis.

stated that "the 1961 treaty has lost its effectiveness and exists in name only."[431] In September 1996, Russia annulled the 1961 mutual defense treaty with North Korea.

Although China fought with North Korea against the US-UN coalition in the Korean War, Pyongyang also had suspicions about the security commitments of China during the Cold War. In 1964, after the first nuclear test of China, Kim Il Sung requested that China share nuclear technology with North Korea, but Mao declined Kim's request. North Korea renewed its request for nuclear technology from China in 1974 when the South was working on its secret nuclear weapon program. China rejected the request of Kim Il Sung one more time.[432]

North Korea's doubts about China increased when China established dialogue with the United States in 1972. The establishment of a relationship between China and South Korea in 1992 was another development that North Korea did not take lightly.

The end of the Cold War decreased North Korea's security against the threats it perceived in the region because, not only did it lose its main ally in the region, but also the United States, as its main adversary emerged as the sole super power in the world. If the alliance between two states breaks down, small states likes North Korea "begin to concentrate on internal balancing and alternative alliance formations."[433] Thus, North Korea redefined its alliance choices with the end of the Cold War and chose to jump on the United States bandwagon. In this context, North Korea's Leadership agreed to freeze its nuclear program within the agreed framework with the United States. However, as mentioned in the first chapter, bandwagoning behavior is a very dangerous strategy because this attitude of the weak state increases the position of the powerful side.

As the United States has continued its threats against North Korea, especially during the Second Bush Administration, Pyongyang has changed its behavior from bandwagoning to balancing in order to preserve its existence. But the problem is how a weak and poor North Korea can balance against the United States and its allies? The answer was bandwagoning with China. It has already been mentioned that China

[431] Stephen Blank and Alvin Z. Rubinstein, eds., *Imperial Decline: Russia's Changing Role in Asia* (Durham, NC: Duke University Press Books, 1997), 164.
[432] Lee, "US Deployment of Nuclear Weapons in 1950s South Korea & North Korea's Nuclear Development."
[433] David C. Kang, "Rolling with the Punches: North Korea and Cuba during the 1980s," *The Journal of East Asian Affairs* 8, no. 1 (1994): 25.

has dominated the North Korean economy in the post-cold war era and also that North Korea has perceived threat emanating from China. However, China is a permanent member of the United Nations Security Council. It is the main supplier of energy and food to North Korea. It can be also said that China is the only rising power that has the capabilities to present a challenge to the United States in the region. Moreover, there are other problems between China and the United States in the region such as Chinese territorial claims, U.S. sales of weapons to Taiwan, the U.S.- South Korean military exercises - North Korean case is just one of these issues.[434] Therefore, North Korea has chosen to remain close to China in order to increase its security against the threat from the US and its regional allies. However, although the North Korea-China defense treaty was extended in 2001 for twenty years, it is doubtful whether China would really protect North Korea in the case of a military attack.[435] The comments of one Russian diplomat shed some light on North Korea's concerns for its security needs:

> During the Korean War, Mao Zedong sent his son to fight on the Korean side, and he was killed. Can you imagine that now the son of Hu Jintao or Jiang Zemin or the like would go to a war front in North Korea? It is understandable that the North Koreans realize that the main thing that they can rely on is their own strength…not words, not international agreements, international law…but the strength of the country, of the state.[436]

4.3.2 Internal Balancing

Internal balancing which means reliance on one's own capabilities is another way to increase security for a state facing an external threat. It has already been mentioned that building nuclear weapons is one form of internal balancing behavior to counter the threats of "hostile" nations. But for a state facing a nuclear threat, what are the other options to increase its security by using its own efforts? How has North Korea mobilized its own resources to counter threats in the region?

According to Waltz, a state protects itself from the attacks of other states with two strategic moves. One is to improve its defensive capabilities. Thus, the potential aggressor will not attack the opponent because it may think that it will not prevail. For Waltz, the message of this strategy is that, "Although we cannot strike back at

[434] Dick K. Nanto and Mark E. Manyin, "China-North Korea Relations," in *The Survival of North Korea: Essays on Strategy, Economics and International Relations* (Jefferson, N.C: McFarland, 2011), 117.
[435] Glaser et al., "Reordering Chinese Priorities on the Korean Peninsula," 7.
[436] Funabashi, *The Peninsula Question*, 194.

you, you will find our defenses so difficult to overcome that you will dash yourself to pieces against them."[437] However, the development of defensive capabilities only does not provide deterrence. Successful deterrence capabilities dissuade the aggressor from attacking because the reaction of the defender causes severe damage to the attacking state. Waltz also describes the message of this strategy that "Although we are defenseless, if you attack, we may punish you to an extent that more than cancels your gains."[438]

Within this context, North Korea, as a threatened state, has sought to develop its own defensive and deterrence abilities to guarantee its survival in the self-help system. For this reason, different forms of internal balancing strategies have been applied by North Korea in order to cope with the nuclear and conventional threats emanating from the United States and its allies. The most important move of the North in terms of its security has been to build up a massive military. For this purpose, In December 1962, four years after the U.S. deployed its nuclear weapons on the Korean soil[439], at the fifth plenary meeting of the fourth Korean Workers' Party Central Committee, "the Four-Point Military Lines" of the National Defense Policy called for 'the arming of the whole people, the fortification of the entire country, the training of all soldiers as a cadre force, and the modernization of arms" was adopted.[440] Accordingly, North Korea increased its military spending, required up to five years of compulsory military service without leave and also built new military facilities.[441] This situation was described by North Korean expert Adrian Buzo thus: "Arming the entire population … established a military basis for daily life … with weapons training, military drill and instruction from kindergarten to retirement age …"[442] Thus, with the aid of its main allies, the Soviet Union and China, the North has established one of the largest armies in the world.

In order to increase its defensive abilities, North Korea also established enormous underground facilities. Japanese forces firstly constructed tunnels and caves during

[437] Waltz, "More May Be Better," 5–6.
[438] Ibid., 5.
[439] Another important development was that China withdrew its forces from North Korea in the same year, 1958.
[440] Joseph S. Bermudez, *Shield of the Great Leader: The Armed Forces of North Korea* (London; New York: I.B.Tauris, 2001), 9.
[441] Mazarr, *North Korea and the Bomb*, 23.
[442] Pollack, No Exit, 62–63.

the World War Two. Later on, Chinese and North Korean forces expanded these facilities for defense against air strikes and a possible nuclear attack during the Korean War.[443] After the end of the Korean War, The North Koreans have continued constructing the underground facilities, as military installations, airplane hangars, and factories for security reasons. North Korean leaders are already aware that in any nuclear attack everything on the surface is destroyed. But, this strategy provided protection from the strategic bombing which happened in the Korean War. Kim Il Sung explained the importance of fortification in 1963:

> We have to fortify our entire country. By doing so, we can defeat those who have atomic weapons even though we do not possess them ourselves… We have to dig underground tunnels. We have to fortify not only the front line, but also the second or third defense line areas as well as strengthening anti-air craft and coastline defenses. We have to build many factories under the ground. When we thus fortify the whole country, not even strongest enemy, not even the Americans, will able to invade us.[444]

According to one US military commander, it was estimated in 1999 that North Korea put nearly all its military facilities the underground.[445]

Another defensive move that was pursued by the North Korean Army was the deployment of most of its military forces close to the DMZ .[446] This is a tactic known as "hugging the enemy." If a military conflict occurs between two Koreas, North Korean forces will be right up against US-ROK forces. Thus, the allied forces cannot easily use nuclear warheads.[447] Referring to this tactical deployment, Kim Il Sung states that "Even if war burst forth in Korea, the United States would not able to use nuclear weapons. How can they use nuclear weapons here in Korea when friend and foe will grapple [with] each other?"[448]

North Korea has also used its conventional forces and developed asymmetric capabilities to deter any attacks from hostile neighbors. The most important

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[443] Cumings, *North Korea*, 27.
[444] Hayes, *Pacific Powderkeg*, 125.
[445] Bruce Cumings, "Creating Korean Insecurity: The US Role," in *Reconstituting Korean Security: A Policy Primer*, ed. Hazel Smith (Tokyo ; New York: United Nations University Press, 2007), 25.
[446] The Demilitarized Zone which known as DMZ was a product of Korean Armistice Agreement in 1953. According to the Armistice, the North and South sides accepted to pull their military forces back two km from the frontline. Thus, the DMZ was created as a dividing line between North and South Korea. Ironically, although this zone is called "demilitarized", it was one of the most militarized frontiers in the world. For detailed information about the DMZ *The DMZ: Dividing the Two Koreas* (Seoul: Korea Foundation, 2010), 10–12.
[447] Kang, "Rethinking North Korea," 257.
[448] Mazarr, *North Korea and the Bomb*, 29.

deterrence factor for North Korea is the deployment of nearly 10.000 long-range artillery systems which include 240-mm multiple rocket launchers and 170-mm self-propelled guns close to the DMZ.[449] The point is that Seoul, which is the capital of South Korea, and an industrial center of the South is approximately 50 km away from the DMZ and is located within the range of these artillery installations. In the first North Korean nuclear crisis, during talks between the North and the South, the North's officials emphasized this situation by saying that "We are ready to respond with an eye for an eye and a war for a war. Seoul is not very far from here. If a war breaks out, Seoul will turn into a sea of fire."[450] Actually, he was right because the North has a capability to fire 500,000 rounds of artillery on Seoul in the first hour of a conflict.[451] Dr. Denny Roy, an expert in Northeast Asian security, described this issue as follows: "The North Korean military holds Seoul hostage." Any possible military conflict in the Peninsula may bring the destruction of Seoul and this is an effective deterrent.[452]

Besides conventional deterrence efforts, North Korea has also developed asymmetric capabilities to deter regional threats. These asymmetric capabilities (apart from its nuclear weapons and ballistic missiles) include chemical and biological weapons, special operations units and electronic warfare.[453]

As Waltz states, "internal balancing is more reliable and precise than external balancing"[454], but this type of balancing strategy is costly. It is true that maintaining a large army is costly especially for small states like North Korea. Military technology is rapidly advancing. Therefore, the modernization of military equipment is needed. Old types of weapons should be replaced with new ones. Besides the equipment, military personnel have to be ready for a war at all times. They have to be trained and well-educated for combat readiness. All of these efforts increase the security of a state without needing any aid from other states but they impose great cost on the state. As already mentioned before, the North Korean army has problems

[449] *North Korea : The Foundations for Military Strength- Update 1995* (Washington, D.C: Defense Intelligence Agency, 1995), 13–14, accessed March 20, 2016, http://nautilus.org/wp-content/uploads/2011/12/DPRKMilitaryHandbook-MarinesUpdate1995.pdf.
[450] Sigal, *Disarming Strangers*, 107.
[451] David C. Kang and Victor Cha, "Think Again: North Korea," *Foreign Policy*, March 25, 2013, accessed in March 19, 2016 https://foreignpolicy.com/2013/03/25/think-again-north-korea/.
[452] Denny Roy, "Parsing Pyongyang's Strategy," *Survival* 52, no. 1 (2010): 125.
[453] IISS, *North Korean Security Challenges*, 49.
[454]Waltz, Theory of International Politics,168.

because of North's poor economic condition and its international isolation. Therefore, although North Korea has maintained one of the largest armies in the world, questions remain over its conventional military power's effectiveness and ability to ensure the North's national security.

The asymmetric warfare capabilities developed by North Korea also do not provide total protection for the North. For instance, it is said that North Korea has a chemical weapons stockpile. Chemical weapons, as WMDs, can be viewed as a successful deterrent force. However, the first Iraqi war which took place between Iraq and the US led coalition forces in 1991 demonstrated that chemical weapons cannot deter attacks from adversaries.[455]

In contrast to these other balancing efforts, developing nuclear weapons appears a "rational choice" for North Korea to protect itself against external threats. According to Korean specialist Youngwon Cho, considering the North's external environment, "nuclear arms offer the most effective and efficient means to guarantee its own survival."[456]

4.3.3 The Nuclear Option: "Costly, Risky but Necessary"

It has been mentioned that the primary purpose of North Korea's decision to go nuclear was to deter any potential attacks from its hostile neighbors. Also, it was mentioned in the first section of this chapter that nuclear weapons reduce North Korea's other security concerns. However, as any other balancing behavior, there are also costs and risks attached to North Korea's pursuit of nuclear status.

The most important cost that is related to North Korea's nuclear decision comes from the basic logic of the security dilemma: increasing one's own security automatically decreases that of others. From this point of view, the acquisition of nuclear weapons by North Korea pushes other states which may view the North as a threat in the region to enhance their security. These states, such as the United States, Japan and South Korea have been forced to tighten their military cooperation as a response to the perceived threat from a nuclear armed North Korea. For instance, following

[455] Iraqi Leader Saddam Hussein had an active chemical weapon program but the US did not hesitate to use military force against Iraq although the US was aware of it. Richard L. Russell, "Iraq's Chemical Weapons Legacy: What Others Might Learn from Saddam," *The Middle East Journal* 59, no. 2 (April 2005): 187–208.
[456] Cho, "Method to the Madness of Chairman Kim."8.

North Korea's military acts toward the South in 2010 (the sinking of Cheonan and the shelling of Yeonpyeong Island)[457], in order to strength its deterrence abilities, the US Secretary of Defense and the South Korean Minister of Defense established the Extended Deterrence Policy Committee in the same year.[458] These balancing activities have also increased risks to North Korea's security because any military confrontation with the US or its allies may bring an end to the existence of North Korea.

The nuclear decision of North Korea has also caused economic and political isolation from the international community. The international isolation legally based on the UN sanctions which were imposed on the North because of its nuclear weapon and ballistic missile programs has left the North politically and economically weak in the system of states.

These are the costs and risks that North Korea has to deal with because of its nuclear weapons program. However, although going nuclear is a costly and risky decision for North Korea, nuclear weapons have become a necessity to the North for its national survival, because as stated earlier, other balancing strategies are problematic to face the security concerns of North Korea.

Moreover, while nuclear weapons are the ultimate means for North Korea to deter threats, they have other utilities for the national security of the North. Nuclear weapons are also viewed as diplomatic leverage for the North Korean leadership. North Korea has had three important issues that it has sought to resolve. These are, meeting its energy needs, receiving economic development aid, and most importantly, normalizing its relations with the United States.[459] Since the first nuclear crisis, North Korea has used its nuclear weapon program to increase its bargaining power on the full range of these issues in negotiations.[460]

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[457] In 2010, a Cheonan, ROK navy destroyer, sank in the Yellow Sea and 46 men were killed. South Korea blamed the North Korea for this tragic incident. In the same year, North Koreans fired the artillery shells at Yeonpyeong Island of South Korea. For Andrew Oneill, North Korea's display of these military behaviors in 2010 can be evaluated through the stability-instability paradox theory. O'Neil, *Asia, the US and Extended Nuclear Deterrence*, 53.

[458] Kim, "US Extended Deterrence and the Korean Peninsula," 76.

[459] John S. Park and Dong Sun Lee, "North Korea: Existential Deterrence and Diplomatic Leverage," in *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, ed. Muthiah Alagappa (Stanford, Calif: Stanford University Press, 2008), 273–274.

[460] In the second chapter of the thesis, it is explained how North Korea has sought to use its nuclear program as a "bargaining chip" in negotiations.

Nuclear weapons also provide a reliable defensive capability in the cheapest way[461]. The cost effectiveness of nuclear arms has enabled countries with small economies such as North Korea to spend more on other state sectors. In fact, compared to the spending requirements of upgrading its old fashioned conventional forces, the cost of North Korea's nuclear weapons program has been very low. For instance, according to one report coming by Global Zero, an international anti-nuclear weapons group, North Korea's core spending on nuclear weapons in 2010 and 2011 was about 500 million US $ each.[462] By comparison, South Korea spent nearly 3 billion US $ on three Aegis-equipped destroyers. It is true that these destroyers would strengthen the South Korean Navy, but their strategic value cannot be compared to the nuclear weapons of North Korea.[463]

In short, the acquisition of nuclear weapons has costs and risks, as with any other strategic choice for North Korea to enhance its security. Regional security concerns and the inadequacy of other strategies to deal with these concerns have made nuclear weapons necessary for North Korea to defend its "vital interests".

4.4 Tragic Nuclear Nonproliferation Cases (Ukraine, Libya)

Lastly, two non-proliferation cases will be explored. Ukraine and Libya are chosen as cases for the nuclear non-proliferation issue because it is argued that these two dramatic non-proliferation examples make North Korean security planners consider the decision to go nuclear a correct move for the protection of their country against foreign hostile actions. These two countries gave up their nuclear activities of their own accord. A couple of years after its dismantlement decision, Libya lost its political authority and the regime collapsed in the country with military intervention from external powers. Ukraine, as the other example, lost its territorial integrity as a result of a foreign aggression.

[461] Cho, "Method to the Madness of Chairman Kim." 21–22.
[462] Bruce G. Blair and Matthew A. Brown, "World Spending on Nuclear Weapons Surpasses $1 Trillion per Decade" (Global Zero Technical Report, June 2011), 1, accessed in March 19, 2016, http://www.globalzero.org/files/gz_nuclear_weapons_cost_study.pdf.
[463] Cho, "Method to the Madness of Chairman Kim." 21–22.

4.4.1 Libya: A Nuclear "Roll back" Case

On December 19, 2003, Libya announced that it had decided to give up all materials, equipment and programs related to the production of nuclear or other internationally banned weapons.[464]

Libya had had ambitions to obtain nuclear weapons since 1970s. It was reported that immediately after Qadhafi came to power, in the beginning of 1970, he wanted to buy nuclear weapons from China but that the attempt was unsuccessful.[465] Later, Libya sought to develop its own nuclear weapons, despite its having ratified the NPT in 1975. On its nuclear path, the Soviet Union became the primary supplier of nuclear materials for Libya. Pakistan also played an important role in its secret nuclear ambitions. In the 1970s, Libya supplied the yellow cake that had been exported from Niger as well as financial assistance to Pakistan, in return it hoped to receive technological support and know-how for its own nuclear program. However, the major player in the nuclear program of Libya was Abdul Qadeer Khan's nuclear network. Libya received significant help from this clandestine network. Although Libya could not maintain a successful nuclear weapon program, the search for a bomb continued until the year 2003. Up until then, Qadhafi never admitted that he had secretly run a nuclear weapon program. But it became clear, especially after a German-flagged "BBC China" vessel, loaded with centrifuge parts, was intercepted by Italian cost guards as had been requested by the United States in October, 2003.[466] In December, Libya declared its decision to eliminate its entire WMD program. After this announcement, Libya ratified the CTBT, and in March 2004, it signed the additional Protocal of the IAEA.[467]

Libya's nuclear roll back efforts were welcomed by the international community. The president of the United States, George W. Bush, said that "its good faith will be returned. Libya can regain a secure and respected place among the nations."[468] The

[464] "Libyan WMD: Tripoli's Statement in Full," *BBC*, December 20, 2003, accessed in March 19, 2016, sec. Africa, http://news.bbc.co.uk/2/hi/africa/3336139.stm.
[465] Solingen, *Nuclear Logics*, 213.
[466] Wyn Q. Bowen, "Chapter Two: Proliferation Pathways," *The Adelphi Papers* 46, no. 380 (May 1, 2006): 28–38.
[467] Solingen, *Nuclear Logics*, 226.
[468] "President Bush: Libya Pledges to Dismantle WMD Programs," *The White House President George W. Bush*, December 19, 2003, accessed in March 19, 2016, http://georgewbush-whitehouse.archives.gov/news/releases/2003/12/20031219-9.html.

United States lifted sanctions on Libya, ended travel restrictions, and released frozen Libyan assets. In the end, full diplomatic relations between the US government and Libya were established in 2006.[469] The UK government also gave positive security assurances to the Qadhafi Regime by signing a "Joint Letter on Peace and Security" in the same year.[470] At the time, this incident was viewed as an important non-proliferation success story.

Eight years later, the region of North Africa and Middle East were shaken with the revolutionary movements known as the "Arab Spring." This unrest also spread to Libya. In 2011, civil war was broke out in Libya. As the regional environment changed, the attitude of the international community toward Libya also changed. In the end, Qadhafi lost his political control and later the regime collapsed with the foreign military intervention of 2011.

Needless to say, the Libyan case has affected the North's nuclear calculations. According to non-proliferation expert Mark Fitzpatrick, the Libyan leader's dramatic fall reinforced North Korean's belief that security assurances provided by Western Powers cannot be trusted and the only way to be secure is to develop one's own deterrent forces.[471]

4.4.2 The Ukrainian Nuclear Nonproliferation Case

The denuclearization of Ukraine and its aftermath is another non-proliferation example that influences the nuclear thinking of North Korean security planners.

With the dissolution of the Soviet Union, the nuclear arsenal deployed in its territory made Ukraine the world's third largest nuclear power. 1,900 Soviet strategic nuclear warheads and nearly 3,000 Soviet tactical nuclear weapons were located in Ukraine. Additionally, 176 Soviet ICBMs (130 SS-19 ICBMs and 46 SS-24 ICBMs), and 44 strategic bombers were stationed in the country.[472] However, it should be also said

[469] Gawdat Bahgat, "Proliferation of Weapons of Mass Destruction: The Case of Libya," *International Relations* 22, no. 1 (2008): 107.
[470] Wyn Q. Bowen, "Libya, Nuclear Rollback, and the Role of Negative and Positive Security Assurances," in *Security Assurances and Nuclear Nonproliferation*, ed. Jeffrey W. Knopf (Stanford University Press, 2012), 98–99.
[471] Mark Fitzpatrick, "The Ukraine Crisis and Nuclear Order," *Survival* 56, no. 4 (July 4, 2014): 84.
[472] "Nuclear Disarmament Ukraine," *Nuclear Threat Initiative (NTI)*, July 30, 2015, accessed March 19, 2016, http://www.nti.org/analysis/articles/ukraine-nuclear-disarmament/.

that while Ukrainian authorities had the physical control of these weapons, they did not have operational control.[473]

At that time, the U.S. and Russian leadership had convergent interests on the control of the Soviet nuclear weapons. The two countries had consensus on that only Moscow should have control of all these weapons. Thus, they wanted the transfer of all nuclear weapons to Russia and to accept Ukraine to sign the NPT as a non-nuclear weapon state. However, as a newly independent state, Ukraine needs to have a strong economy, more stable relations with Russia and closer ties with the Western world. For this reason, Kyiv had plans to use the nuclear arsenal on its own soil as a bargaining chip in the negotiations with the United States and Russia.[474] In the first instance, tactical nuclear weapons were completely removed from Ukraine by May 1992. But for other nuclear materials, Ukraine insisted upon demands which included compensation, financial assistance and security assurances.[475]

After a long negotiation process, on 14 January 1994, the United States, Ukraine and Russia signed the Trilateral Statement. According to this agreement, Ukraine agreed to the transfer of all nuclear weapons to Russia. In return, Kyiv would receive compensation from Russia for the HEU in the war heads. It would also receive financial and technical assistance for the disposal of missiles and other related infrastructure located in Ukraine. The trilateral process was completed with the signing of the Budapest Memorandum Security Assurances on December 5, 1994 between Ukraine, the US, Russia and the UK after Ukraine agreed to sign the NPT as a non-nuclear weapon state on November 16.[476]

The Memorandum was aimed at giving security assurances to Ukraine for its denuclearization efforts. In article two of the agreement, the three countries

[473] All strategic and tactical nuclear weapons in the former Soviet Union have locking systems known as "permissive action links or PALs. With these electronic locks, it is impossible to use these weapons without codes from authorized authorities. Robert S. Norris, "The Soviet Nuclear Archipelago," *Arms Control Today*, February 1992, 25.

[474] Nadia Schadlow, "The Denuclearization of Ukraine: Consolidating Ukrainian Security," *Harvard Ukrainian Studies* 20 (1996): 271–272.

[475] Thomas Bernauer, Roy Suter, and Stefan Brem, "The Denuclerization of Ukraine," in *The Politics of Positive Incentives in Arms Control*, ed. Thomas Bernauer and Dieter Ruloff (Columbia, S.C: Univ of South Carolina Pr, 1999), 112–113.

[476] Steven Pifer, "The Trilateral Process: The United States, Ukraine, Russia and Nuclear Weapons," *The Brookings Institution*, accessed March 18, 2016, http://www.brookings.edu/research/papers/2011/05/trilateral-process-pifer.

confirmed that they would refrain from the threat or use of force against the territorial integrity of Ukraine.[477]

At this time, while the negotiations were going on, John Mearsheimer, in his article published in *Foreign Affairs* in 1993, stated that

> Ukraine cannot defend itself against a nuclear-armed Russia with conventional weapons, and no state, including the United States, is going to extend to it a meaningful security guarantee. Ukrainian nuclear weapons are the only reliable deterrent to Russian aggression. If the U.S. aim is to enhance stability in Europe, the case against a nuclear-armed Ukraine unpersuasive.[478]

Twenty years later, Russian aggression took place against Ukraine. In 2014, a civil war broke out in Ukraine, and the Crimean Peninsula which was part of Ukrainian territory was then annexed by the Russian Federation.

From the North Korean point of view, Pyongyang might extract a very important lesson from the Ukrainian non-proliferation case: "a state should only rely on its own deterrent forces for its national security, and nuclear weapons are the ultimate deterrent."

4.5 Conclusion

This chapter has analyzed the key factors North Korea's drive to acquire nuclear weapons capabilities from a neorealist perspective. As any other state in the system, the main aim of North Korea is to ensure its survival in a state of anarchy. In this chapter, it has been demonstrated that North Korea has very serious external challenges to its security. It has felt insecure from United States nuclear threats since the Korean War. The threats physically materialized for North Korea when the United States installed nuclear weapons on the Korean Peninsula. Besides, the United States has extended both its nuclear and conventional capabilities for its allies Japan and South Korea in the region. With its political and military superiority, South Korea's desire to unify the peninsula on its own terms poses a threat to North Korea's existence. Japan which once colonized the Korean Peninsula has been

[477] "Budapest Memorandums on Security Assurances, 1994," *Council on Foreign Relations (CFR)*, accessed March 18, 2016, http://www.cfr.org/nonproliferation-arms-control-and-disarmament/budapest-memorandums-security-assurances-1994/p32484.
[478] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," 50–51.

another threatening actor in the region for North Korea, mainly because of its historical legacy and capabilities. Also, although China is the most important ally of North Korea, the imbalance in the relations between these two countries can also be identified as another security challenge for the North. In order to cope with these issues, North Korea developed nuclear weapons because it believes nuclear capabilities will help it increase its security and deter threats. At the same time, other strategic choices are unlikely to be enough to counter these security issues. The nuclear experiences of two countries, Ukraine and Libya have also strengthened North Korea's belief in the validity of its decision to possess nuclear weapons to protect its country from foreign interventions.

5. CONCLUSION

Since the beginning of the atomic age, the importance of nuclear weapons continues to weigh heavy in the security calculations of states around the world because nuclear weapons remain the most powerful weapons of all. Today only nine states are assumed to possess nuclear weapons and one of them is North Korea. In this thesis, the historical trajectory of North Korea's nuclear efforts has been explored, and the reasoning of the North Korean nuclear program has been analyzed from a theoretical perspective.

In this research study, neorealist theory was used to analyze the motivating factors for North Korea to develop nuclear weapons. Therefore, firstly, the key concepts of neorealist theory and how it explains the importance of nuclear weapons in world politics were discussed. For neorealist thought, states are the main actors in the international system and the fundamental aim of states is to survive. Every state in the system has to protect itself with its own capabilities because the international system is anarchic in nature. Nuclear weapons have incredible power and therefore they serve states as the ultimate deterrent to any aggressor. Neorealist theory also claims that states are rational actors in the system; therefore, a state seeks to develop nuclear weapons if these are in the state's best interests. Under this framework, given the anarchic nature of the international system, states decide to obtain nuclear weapons to ensure their survival in the face of external threats.

After outlining the theoretical framework, the question of how North Korea has developed nuclear weapons was examined. The historical examination of the North's nuclear program demonstrated that the development of North Korea's nuclear weapons has been a long journey. The lack of technical capabilities and know-how in nuclear technology were the main obstacles to North Korea in its nuclear program. At this point, the Soviet Union, its main ally, played an important role in the building of nuclear facilities and the education of North Korean nuclear scientists during the Cold War. China was another country that gave technical assistance to the North in the field of nuclear technology.

The most important events in North Korea's nuclear program took place in the 1980s. The 5 MWe research reactor at the Yongbyong Nuclear Complex was built by North Korea during this period of time. This nuclear reactor is important because when operational, the reactor would make it possible to produce plutonium for military purposes. Thus, North Korea's nuclear activities have become an issue of concern, especially for the United States.

With pressure from the United States, the Soviet Union convinced the North to become a party to the NPT in 1985. However, the safeguard agreement which makes verification of the North's nuclear facilities by the IAEA possible was signed by the North in 1992. Overtime, verification of North Korea's nuclear program by IAEA officials reached to stalemate. Thus, the first nuclear crisis erupted when the North announced that it would withdraw from the NPT in 1993. As a result of bilateral negotiations between the US and North Korea, the crisis ended with the signing of an Agreed Framework by these two states in 1994. According to this treaty, the North accepted to stop its nuclear activities and to become party to the NPT.

The second crisis emerged when the agreement collapsed in 2002 mainly because of the North's suspicious highly enriched uranium (HEU) program. On the one hand, the US claimed that North Korea had a clandestine HEU program for military purposes. But, North Korea never accepted that it had a HEU program until 2009. On the other hand, the DPRK administration also accused the US of not meeting its commitments under the Agreed Framework. Thus, the Agreed Framework was brought to an end with mutual accusation from the two states about violation of the agreement. In 2003, North Korea declared that it was withdrawing from the NPT and became the first country to leave the treaty by using article X. Later on, under Chinese initiative, the Six Party Talks were formed as a multilateral mechanism to persuade North Korea to abandon its nuclear ambitions but this initiative has also failed in the denuclearization of the North.

This has also indicated that existing international nuclear non-proliferation efforts have become ineffective in stopping North Korean nuclear ambitions. North Korea has been faced with the pressure since its nuclear activities become a concern for the world community. However, despite international objections, the DPRK has continued with the advancement of its nuclear program. In the end, nearly five decades after beginning its nuclear program, the North Korean administration

announced to the world that it has nuclear weapons. North Korea's first nuclear test in 2006 also showed that Pyongyang is not bluffing on its nuclear weapon claim. The nuclear tests that it conducted in 2009 and 2013 indicated that its nuclear capabilities are advancing and that it has no intention of giving them up. Moreover, paralleling its nuclear program, North Korea has also developed ballistic missile technology as a delivery system for nuclear war heads.

Lastly, the reasons behind North Korea's decision to develop nuclear weapon were examined under the framework of structural realism. North Korea's nuclear program presents a source of threat to regional security mainly because the international community views the North as "unpredictable", "irrational" or as an "evil state". However, neorealist theory makes it clear that North Korea is just one actor in the anarchical world order. Its main aim is to survive in the system like any other actor. It feels insecure in the region because it has had security concerns almost since its establishment. These issues are key motivating factors for North Korea's nuclear decision. The main security concern has come from the United States' hostility toward the North. In fact, this research study has shown that the United States has played a crucial role in creating North Korea's feeling of vulnerability. A couple of years after its establishment, North Koreans felt the military might of the US in the Korean War. The US threat was intensified for the North when the US deployed tactical nuclear weapons in the Korean Peninsula. Even after the US decision to withdraw its nuclear weapons from the Korean Peninsula in 1991, North Korea still felt threatened by the US mainly because of the US's sophisticated conventional military force and the existing nuclear capabilities of the US which could hit the North, for instance with ICBMs or SLBMs. Related to this, the military presence of the United States and its nuclear umbrella in order to protect its allies in the region are also another source of threat to North Korea's security. To deter and cope with these threats, North Korea may have sought to develop nuclear weapons, because nuclear arms are the ultimate deterrent forces. It should also be noted that a nuclear threat can only be neutralized with nuclear weapons. When inter-Korean relations are examined, it can be said that the relative power of the North has declined against South Korea since the 1970s in the region. Moreover, South Korea has the explicit intention to unify the peninsula on its own terms. In this regard, nuclear weapons have also increased the security of the North by maintaining the balance of power

against South Korea on the peninsula. North Korea has also perceived Japan as a threat to its national existence due to Japanese military might and its historical legacy. China which is the DPRK's main ally in the region also presents a source of concern for the North because of the asymmetric relationship between two states.

These threatening issues are the main triggering and continuous factors that force North Korea to develop nuclear weapons. However, for neorealist theory, the acquisition of nuclear weapons is not the only strategy that states use to cope with threats. For this reason, in this research study, other strategies that could be implemented by the North to increase its security in the international system were also discussed. This research study has found that North Korea has countered the threats to its security with balancing and bandwagoning behavior. During the Cold War, Pyongyong tried to ensure its security against threats from the US and its allies in the region by forming alliances with the two leading states of communist bloc, the Soviet Union and China. In 1961, North Korea signed mutual security agreements with these two states. However, the credibility of this alliance was problematic for the North. After the Soviet Union's behavior toward Cuba in the Missile Crisis, the fear of abandonment increased among North Korean leadership. As a matter of fact, in 1996, the Russians announced that they had canceled the mutual defense treaty with North Korea. The alliance mechanism with China was also suspicious for the North especially since they established a relationship with the United States in 1972. The end of the Cold War has caused the North to become even more isolated and its position in the region has been further weakened. Thus, instead of balancing, North Korea chose a bandwagon strategy with the US to ensure its security. However, this did not make the North feel secure against the US threat. Thus, with the collapse of the Agreed Framework, North Korea returned to a balancing strategy against the threats originating from the US and its allies by bandwagoning with the other dominant figure in the region, China. Although, the mutual security agreement between the DPRK and China is still is in force, China's security guarantee is highly suspicious for the North Korean leadership.

North Korea has also tried to strengthen its security with internal balancing strategies to counter the threats from adversaries. The DPRK has built one of the largest armies in the world. It has also positioned its military units to increase its deterrence and defensive abilities. For instance, nearly 10,000 artillery systems were stationed by

the North near the DMZ. Thus, Seoul, the capital city of South Korea came into range for these weapons. However, the internal balancing of the North also has credibility problems because of the North's isolated position in the international system. As these strategies could not meet the security demands of the North, nuclear weapons appeared as the only guarantor of North Korea's national security. Nuclear weapons can be viewed as a credible deterrent by the North but there are also other benefits accruing from them. North Korea has used its nuclear program as a bargaining chip to increase its position in negotiations. The nuclear weapon program is also cost effective compared to conventional arms.

In this research study, the nuclear disarmament of two states, Libya and Ukraine were also explored. Although Libya did not obtain nuclear weapons like North Korea, it had a clandestine nuclear program. In 2003, it announced that it would abandon all its nuclear activities and agreed to comply with international obligations. Because of its denuclearization decision, the US established diplomatic relations with Libya and security assurances were given by the UK to them. However, eight years later, the Libyan administration collapsed and an international military intervention took place. In the Ukrainian Case, after the dissolution of Soviet Union, some Soviet nuclear weapons stayed in Ukraine. With United States and Russian economic and security commitments, Ukraine agreed to transfer all of the nuclear warheads to Russia in 1994. However, twenty years later, Ukraine faced was with Russian aggression and as a result lost its territorial integrity. Thus, the denuclearization story of these two states reinforced North Korea's assessment that it needed a nuclear shield against foreign intervention.

It should also be said that this thesis contains some weaknesses concerning data collection. The sources used in this thesis are all in the English language and most secondary materials originate from the United States, Russia and South Korea. Because of the secret and isolated nature of the North Korean State, very limited internet based North Korean sources were used in this thesis. In this context, future research on these questions would be enriched by interviewing DPRK officials or collecting information from North Korean based books, documents or reports.

Consequently, based on the main findings of this thesis, considering the benefits of nuclear weapons to the national security of North Korea under these conditions and

its nuclear capabilities, gained by the North as a result of a long struggle, it seems unlikely that North Korea will abandon its nuclear weapons in the future.

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APPENDICES

Appendix 1: Key Developments in North Korean nuclear Crisis Since the third nuclear test of North Korea in 2013

2013	
April 2013	North Korea announces it plans to restart its heavy water reactor at Yongbyon.
August 2013	Satellite imagery indicates that North Korea likely restarted a nuclear reactor at its Yongbyon site. The heavy water reactor in question produced the spent fuel from which North Korea separated weapons-usable plutonium for its nuclear arsenal. The reactor was shut down in 2007.
September 20, 2013	The IAEA General Conference adopts a resolution calling on North Korea to come into full compliance with the NPT and cooperate in the full implementation of the IAEA safeguards.
2014	
March 26, 2014	North Korea test-fires two medium-range Rodang (also known as No Dong) missiles into the Sea of Japan, violating UN sanctions. This is the first time in five years that North Korea has tested medium-range projectiles.
March 27, 2014	UN Security Council unanimously condemns North Korea for launching the midrange missiles, saying the launch violates council resolutions; China joins council in criticizing the launch.
November 20, 2014	Russian Foreign Minister Sergey Lavrov announces that a North Korean special envoy told Russian

	President Vladimir Putin that North Korea is ready to resume the Six-Party Talks.
May 9, 2015	North Korea successfully launches a ballistic missile, which it claims came from a submarine, that traveled about 150 meters. Experts believe the missile was launched from a submerged barge.
November 28, 2015	North Korea tests a ballistic missile from a submarine. The missile test fails.
December 21, 2015	North Korea tests another ballistic missile from a submarine. This test is reported as a success.
2016	
January 6, 2016	North Korea announces it conducted **a fourth nuclear weapons test**, claiming to have detonated a hydrogen bomb for the first time. Monitoring stations from the Comprehensive Nuclear Test Ban Treaty Organization detect the seismic activity from the test. The type of device tested remains unclear, although experts doubt it was of a hydrogen bomb based on seismic evidence.
February 7, 2016	North Korea launches a long-range ballistic missile carrying what it has said is an earth observation satellite in defiance of United Nations sanctions barring it from using ballistic missile technology, drawing strong international condemnation from other governments which believe it will advance North Korea's military ballistic missile capabilities.
March 2, 2016	The UN Security Council unanimously adopts **Resolution 2270** condemning the nuclear test and launch of early 2016, and demanding that North Korea not conduct further tests and immediately suspend all activities related to its ballistic missile program. Resolution 2270 expands existing sanctions on North Korea by adding to the list of sanctioned individuals and entities, introducing new financial sanctions, and

	banning states from supplying aviation fuel and other specified minerals to North Korea. Resolution 2270 also introduces a requirement that UN member states inspect all cargo in transit to or from North Korea for illicit goods and arms.

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Appendix 2: Estimated Number of North Korea's Nuclear Weapons (2015)

Institute for Science and International Security (ISIS)	10-16
Stockholm International Peace Research Institute (SIPRI)	6-8
Arms Control Association	8

David Albright, "North Korean Plutonium and Weapon-Grade Uranium Inventories" (Institute for Science and International Security, 2015), accessed April 5, 2016, http://isis-online.org/isis-reports/category/korean-peninsula/; "Nuclear Forces," Stockholm International Peace Research Institute, (2015), accessed April 5, 2016, http://www.sipri.org/research/armaments/nuclear-forces; "Nuclear Weapons: Who Has What at a Glance," Arms Control Association, 2015, accessed April 5, 2016, https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat.

CIRRICULUM VITAE

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