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THESIS

**A STUDY ON THE FAILURE OF CONVENTIONAL
DETERRENCE: THE CASE STUDY OF THE
BOMBARDMENT OF YEONPYEONG IN 2010**

by

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December 2016

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**A STUDY ON THE FAILURE OF CONVENTIONAL DETERRENCE: THE
CASE STUDY OF THE BOMBARDMENT OF YEONPYEONG IN 2010**

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ABSTRACT

In 2010, North Korea launched an artillery bombardment of South Korea's Yeonpyeong Island, killing four, wounding 18, and damaging over 100 buildings. Despite conventional military superiority, the Republic of Korea-United States (ROK-U.S.) alliance failed to deter this significant North Korean low-intensity provocation (LIP).

This thesis examines the Yeonpyeong deterrence failure to ask how the ROK-U.S. alliance can deter North Korean LIP in the future. It examines the requirements for conventional deterrence, identifies traits that distinguish conventional and nuclear deterrence, and develops an original matrix of conventional deterrence criteria that can be applied to specific cases. The thesis then utilizes this matrix for a structured case study of the Yeonpyeong bombardment.

The thesis finds that most of the criteria for successful conventional deterrence were absent prior to the Yeonpyeong bombardment, indicating multiple reasons for deterrence failure. Among other factors, the alliance ignored intelligence regarding increased North Korean military deployments near the island, and had not demonstrated a likelihood of response in similar incidents in the past.

The conclusions provide numerous lessons applying to both future studies of conventional deterrence effectiveness and the policy requirements for the ROK-U.S. alliance to successfully deter LIP by an increasingly dangerous North Korean regime.

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LIST OF ACRONYMS AND ABBREVIATIONS

CPP	Counter Provocation Plan
DPRK	Democratic People's Republic of Korea
KIS	Kim Il Sung
KJI	Kim Jong Il
KJU	Kim Jong Un
KPA	Korean People's Army
KPAF	Korean People's Air Force
LIC	Low Intensity Conflict
LIP	Low Intensity Provocation
NDC	National Defense Commission
MRL	Multiple Rocket Launchers
NLL	Northern Limit Line
NWI	Northwest Islands
OPCON	Operational control
PGM	Precision-guided Munitions
ROE	Rules of Engagement
ROK	Republic of Korea
ROKAF	Republic of Korea Air Force
SCM	Security Consultative Meeting
UNC	United Nations Command
USFK	United States Forces in Korea

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I am an F-16 pilot in the Republic of Korea, and now I have another title: an alumnus of the Naval Postgraduate School. Studying at NPS was a miracle for me. I hope that future readers of my thesis will know what this experience has meant to me. If it were not for the numerous people who helped me, I could not have experienced this miracle.

During my studies at NPS, there were three major questions that I asked myself: 1) Why do I study? 2) What are the purposes of my studying? 3) Why should I walk a difficult road? Frankly speaking, I cannot find exact answers to those questions. I believe that I might not find the answers until the day that I close my eyes. That is, why is a person called to be a student throughout one's whole life? In the same context, I am a happy student.

I would like to become evidence of life to someone in the future. Even though I was so poor in the past, I eventually achieved my goal through great effort. While the achievement of a goal became more and more difficult, I would like to provide an inkling of possibility to people who are frustrated with their situation; they will watch my footprints on the field on which I have lived passionately. Therefore, I could not help but do my best in every moment. I will remember the faraway sound of sea lions that I heard at NPS in the early evenings. It was really similar to my painful cry. And I will also recollect the room of 203 in Glasgow Hall where I remained lonely all night long. Through overcoming the painful moments, I could grow up a little more.

I recognized how I am so weak, stupid, and slow to move forward through studying at NPS. But I can spread my wings beautifully because the people who helped me made me recognize that I can be a beautiful swan, not an ugly duck.

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

The research question is why the alliance of the United States and the Republic of Korea (ROK-U.S. alliance) fails to deter North Korean low intensity provocations (LIP), focusing specifically on the bombardment of Yeonpyeong in 2010.

The ROK-U.S. alliance was made by the ROK-U.S. Mutual Defense Agreement of 1954. The purpose of the alliance is to defend, with U.S. support, the security of the Republic of Korea (ROK) against external threats. Historically, however, the alliance has not always effectively dealt with LIP security threats by North Korea. The ROK-U.S. alliance is strong because the ROK is a mid-power country, and the United States is hegemonic. Moreover, the gap of quality and quantity of the alliance's military power against North Korea is huge. Nevertheless, the alliance has failed to deter North Korean LIP.

Most prominently, the alliance failed to deter the North Korean bombardment of Yeonpyeong in 2010. The bombardment of Yeonpyeong was an artillery engagement between the Korean People's Army (KPA) and the ROK Marine unit in the Yeonpyeong Island on November 23, 2010. After the completion of the artillery exercise of the ROK Marine unit that aimed at territorial waters of the ROK in the south of the Northern Limited Line (NLL), the KPA fired approximate 170 rounds of artillery shells and rockets at Yeonpyeong Island. Military and civilian facilities of the ROK were damaged by this attack.¹

To explain why the ROK-U.S. alliance did not deter this attack, the thesis will specifically examine the following questions: Why does North Korea consistently provoke by LIP? Which elements in the ROK-U.S. alliance are applicable to deter low intensity provocation? What conditions need to be satisfied to deter LIP?

¹Mark McDonald, "'Crisis Status' in South Korea after North Shells Island," *New York Times*, November 23, 2010, <http://www.nytimes.com/2010/11/24/world/asia/24korea.html?src=mv>.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

This thesis approaches the essence of deterrence against North Korean LIP. Since the end of the Korea War, there have been many LIPs by North Korea. Retired four-star Gen. Walter L. Sharp, who headed United States Forces in Korea (USFK) command, said, “I believe there will be strong provocations, strong attacks by North Korea that could quickly escalate into a much bigger conflict.”² Despite the strength of the ROK-U.S. alliance, North Korean LIPs are still a threat, and the ROK may be more vulnerable to North Korean LIPs than to more drastic North Korean attacks.

In order to deter those LIPs, there have been corresponding efforts by the ROK and the ROK-U.S. alliance. Unfortunately, however, the efforts have not definitively achieved the goal. North Korean provocation may occur at any time, so security policy must anticipate North Korean LIP. The majority of studies have only analyzed the fragmentary reasons for LIP. They seldom focused on the essence of the problem of deterring provocations. The core issue is the failure of deterrence, and the bombardment of Yeonpyeong in 2010 is a critical case of failure to deter LIP. Through the case study of the bombardment of Yeonpyeong in 2010, this thesis will enhance understanding of the reason for the failure of deterrence for LIP and means to enhance deterrence for LIP.

Many scholars have suggested some ways of deterring various North Korean provocations. The bulk of these studies, however, only focused on deterring North Korea from launching major attacks, especially attacks using nuclear weapons. Moreover, many analysts have believed that North Korean LIP could be deterred by the ROK or the ROK-U.S. alliance with the overwhelming gap of military power. They also thought that the LIP could be controlled separately without escalation to a nuclear crisis. However, the challenges of LIP and a nuclear crisis have to be handled together. As Gen. Sharp mentioned, LIP could escalate into a nuclear crisis. This is why LIP is important. Therefore, this thesis will concentrate on explaining the failure to deter the North Korean

²Wyatt Olson, “Retired USFK Head: North Korea Collapse May Happen Sooner,” *Military.com*, 25 May 25, 2016, <http://www.military.com/daily-news/2016/05/25/retired-usfk-head-north-korea-collapse-may-happen-sooner.html>.

bombardment of Yeonpyeong in 2010, because this is a meaningful case to understand the broader security mechanisms on the Korean Peninsula.

C. LITERATURE REVIEW

To begin with, it is necessary to clarify the terminology of “North Korean provocation.” In their work, many scholars use different terminology to discuss the bombardment of Yeonpyeong in 2010. Hannah Fischer said:

The term “provocation” is defined to include armed invasion; border violations; infiltration of armed saboteurs and spies; hijacking; kidnaping; terrorism (including assassination and bombing); threat/intimidation against political leaders, media personnel, and institutions; incitement aimed at the overthrow of the South Korean government; actions undertaken to impede progress in major negotiations; and tests of ballistic missiles and nuclear weapons.³

For this thesis, three criteria distinguish such acts: (1) the targets of provocative action are specific; (2) there is a state behind the act; (3) the crisis could escalate to total war. By this definition, the bombardment of Yeonpyeong in 2010 can be termed North Korean provocation.

Provocations can be categorized into two types: high intensity and low intensity. Following these criteria, armed invasion is high-intensity provocation.

The U.S. Department of the Army offers a relevant definition of low intensity conflict (LIC). According to this, LIC is “political-military confrontation between contending states or groups below conventional wars and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means employing political, economic, informational, and military instruments. Low intensity conflicts are often localized, generally in the Third World, but contain regional and global security implication.”⁴

³Hannah Fischer, *North Korean Provocative Actions, 1950–2007* (CRS Report RL30004), Washington, DC: Congressional Research Service, 2007, 1.

⁴United States Department of the Army, *Field Manual 100–20: Military Operations in Low Intensity Conflict*, December 5, 1990, http://www.globalsecurity.org/military/library/policy/army/fm/100-20/10020ch1.htm#s_9.

Here, however, low intensity conflict could be a state or a non-state group. This thesis will use the term provocation to refer to actions by states because North Korea is a state, not a group. Therefore, the bombardment of Yeonpyeong in 2010 was low intensity provocation.

Sun Tzu stated, “Hence to fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy’s resistance without fighting.”⁵ This famous saying suggests that it is better to deter provocations rather than to retaliate after provocations occur. Pre-existing studies dealing with deterrence have been more focused on a possible nuclear crisis rather than LIP on the Korea Peninsula. North Korean LIP, however, is also a crucial danger threatening the security of the ROK. From the perspective of crisis escalation, LIP should also be deterred. Then, the main concern is which elements are prerequisites for deterrence of LIP specifically? This thesis will seek to answer this question by focusing on the reasons for failures to deter North Korean LIP.

Established studies explained that responsibility for North Korean LIP belongs to the ROK because North Korean LIP has occurred in peacetime, and the ROK has peacetime operational control. These studies then blame the ROK’s military for not counteracting such LIP actively and effectively.⁶ But this assessment overlooks how, since the ROK-U.S. alliance was made in 1950, the alliance has always been the main agency for the security of the ROK. Thus, given the core concern that LIP could escalate into high intensity conflict, the ROK-U.S. alliance also has a role to play in deterrence of LIP.

⁵Tzu, Sun, *The Art of War*, trans. by Lionel Giles (Boston, MA; London: Shambhala Publications, 2011), 15.

⁶Jaewook Jung, “North Korean Military Provocation and Strategic Tasks,” *The Korean Association of International Studies* (August 2011): 191, <http://www.dbpia.co.kr/Article/NODE01682052>; Yong-Sup Han and Sang Hyuk Jeong, “Political, Economical, Military Analysis of the Wartime Operational Control Authority Transfer Issue: Theory, Evaluation, Countermeasures,” *Journal of International Politics* 20, no. 1 (Seoul: Ilmin International Relations Institute, April 2015): 6, <http://dx.doi.org/10.18031/jip.2015.04.20.1.5>.

This thesis addresses the intersection of three main topics: 1) the role of the ROK-U.S. alliance, 2) deterrence, and 3) LIP. Pre-existing studies have not analyzed this intersection.

The rest of this literature review considers how some prior work has addressed some of these three main topics intersecting in this thesis.

1. The ROK-U.S. Alliance and North Korean LIP

What agency is in charge of deterrence against North Korean LIP? Pre-existing studies argued that the ROK is the main agency for the deterrence against LIP by North Korea. Jaewook Jung said, “The ROK has failed to deter the provocation by North Korea, because the ROK does not have military power to overwhelm North Korean military. Moreover, the retaliatory power of the ROK’s military has restricted by the principle of proportion on the armistice rules of engagement.”⁷ His argument is locked in the framework of operational control. The U.S. took operational control (OPCON) of South Korean forces during the Korean War back in the early 1950s. Peacetime OPCON was returned in 1994. Until 1994, a U.S. four-star Commander had the responsibility and the authority of the ROK military in peacetime, as well as in potential wartime.⁸ With the framework of peacetime OPCON, many scholars concluded that the primary responsibility for conventional deterrence against North Korean LIP is with the ROK military.

Doug Bandow argues provocatively, “The U.S.-ROK military alliance has lost its purpose. South Korea is not critical to America’s defense and America’s assistance is not—or at least should not be—critical to South Korea’s defense.”⁹ He explained: “For instance, the North might hope to seize Seoul, located just south of the DMZ, and then

⁷Jaewook Jung, “NK’s Military Provocation and Embodiment of Proactive Deterrence,” *The Korean Journal of International Studies* 52, no. 1 (2012): 145, <http://www.dbpia.co.kr/Article/NODE01817184>.

⁸ “OPCON Transfer,” *Global Security.org*, <http://www.globalsecurity.org/military/agency/dod/usfk-opcon.htm>.

⁹Doug Bandow, “The U.S.-South Korea Alliance Outdated, Unnecessary, and Dangerous,” *Foreign Policy Briefing* (Cato Institute, 2010): 7, <http://www.worldaffairsjournal.org/content/us-south-korea-alliance-outdated-unnecessary-and-dangerous>.

negotiate a ceasefire. No doubt South Korea should prepare for such a contingency. But, again, the responsibility for defending Seoul lies with the ROK, not the United States.”¹⁰

But LIP by North Korea could escalate into greater threats to the ROK. Such threats to the ROK have to be dealt with by the ROK-U.S. alliance because those are the terms of the ROK-U.S. Mutual Defense Agreement. According to article two of the ROK-U.S. Mutual Defense Agreement, “The Parties will consult together whenever, in the opinion of either of them, the political independence or security of either of the Parties is threatened by external armed attack.”¹¹ Moreover, Stephen M. Walt said that “an alliance is a formal or informal arrangement for security cooperation between two or more sovereign states.”¹² Therefore, to deter LIP is not only the ROK’s consideration. The ROK-U.S. alliance logically has to deal with the all threats including low intensity provocations.

Nevertheless, some would prefer that the LIP be deterred by the ROK singlehanded, due to anxiety over entrapment by the United States. The ROK-U.S. Alliance expresses the familiar tension between abandonment and entrapment explained by Glenn H. Snyder: “The first gives rise to fears of the ally’s defection and perhaps realignment; the second generates worries about being dragged into a war over the ally’s interests that one does not share.”¹³

Some consider that the United States left responsibility for LIP to the ROK’s military under the Nixon Doctrine in 1969. John G. Keilers explained that “President Nixon’s doctrine consisted of three major tenets. First, the U.S. would honor all of its treaty agreements. Secondly, the U.S. would provide a shield if a nuclear power threatened an ally or a country the U.S. deemed to be vital to its national security. And, lastly, the U.S. would provide military and economic aid to countries under treaty

¹⁰Ibid., 5.

¹¹“United States of America-Republic of Korea Treaty,” *The American Journal of International Law* 48, no. 3 (1954): 147, <https://www.jstor.org/stable/pdf/2213963.pdf>.

¹²Stephen M. Walt, *The Origins of Alliance* (Ithaca, NY: Cornell University Press, 1987), 12.

¹³Glenn H. Snyder, “Alliance Theory: A Neorealist First Cut,” *Journal of International Affairs* 44, no. 1: 103 (1990): 113, https://www.jstor.org/stable/24357226?seq=1#page_scan_tab_contents.

agreements, but the requesting nation would be expected to bear primary responsibility to provide the manpower for its own defense.”¹⁴

The other issue LIP raises is the matter of the right of self-defense. Pre-existing studies argued that provocation, such as the bombardment of Yeonpyeong in 2010, should be counteracted as the right of self-defense, not punishment of violence under the Armistice Agreement. At the moment of the bombardment of Yeonpyeong in 2010, there was a conflict about responding on the basis of the right of self-defense or the punishment of violence of the Armistice.¹⁵ There were different perceptions between the White House spokesman and Walter L. Sharp, who was the United Nations Forces Commander, the commander of the U.S. Forces Korea and the ROK-U.S. Combined Forces Command (CFC).¹⁶

This conflict is still ongoing. As mentioned earlier, the two types OPCON and the purpose of the alliance make it difficult to answer which is correct, between the right of self-defense and the punishment of violence under the Armistice.

Overall, pre-existing studies have just focused on a single primary phenomenon of LIP without appreciating how the ROK’s security has been based on the ROK-U.S. Mutual Defense Agreement since 1953.

2. Conventional Deterrence and Nuclear Deterrence

In the study of deterrence, Thomas C. Schelling provides thinking central to this thesis. As Robert R. Tomes stated, “Schelling’s *The Strategy of Conflict* (1960) and *Arms and Influence* (1966) are two classics of deterrence theory.”¹⁷ And, Phil Williams has provided a cogent summary of Schelling’s influence on deterrence theory as follows:

¹⁴John G. Keilers, “Nixon Doctrine and Vietnamization,” WWW.ARMY.MIL, https://www.army.mil/article/3867/Nixon_Doctrine_and_Vietnamization.

¹⁵Hwee-Rhak Park, “‘Resolute Response’ and ‘Prevention of Escalation’ Regarding North Korean Provocations: Appropriate Application of Self-defense and Rules of Engagement,” *The Journal of Strategic Studies* (Korea Research Institute for Strategy, May 2012): 100.

¹⁶Jongdae Kim, *Secret Files: The War in the Yellow Sea* (Seoul: Medich Media, 2013), 242. Trans. by the author.

¹⁷Robert R. Tomes, “Nuclear Strategy, Deterrence, Compellence, and Risk(y?) Management: Thomas Schelling Meets Joint Vision 2010,” *Military Operations Research Symposium* (Quantico, VA: June 1997), 1.

The contribution made by Thomas Schelling to nuclear strategy was both immense and unique. Schelling brought to the subject a subtlety and sophistication which were rarely equaled let alone surpassed by other strategists. His work had a rare combination of rigor and imagination, and the contribution that he made to the understanding of deterrence, coercion and arms control was highly distinctive and of major importance.... It is impossible to deny the richness of his insights or the significance of his contribution.¹⁸

Shelling classifies the use of military power into two categories. The first is to use military power actually for victory; this is further divided into defense and offense. The other strategy is to threaten using military power for influencing an aggressor's actions; this is also further divided into deterrence and compellence. He defines deterrence: "Deterrence involves setting the stage—by announcement, by rigging the trip-wire, by incurring the obligation—and *waiting*. The overt act is up to the opponent."¹⁹ He also defines compellence: "Compellence, in contrast, usually involves *initiating* an action (or an irrevocable commitment to action) that can cease, or become harmless, only if the opponent responds. The overt act, the first step, is up to the side that makes the compellent threat."²⁰ He defines coercion: "Coercion covers the meaning but unfortunately includes 'deterrent' as well as 'compellent' intentions."²¹

There are other scholars' definitions of coercion. Daniel L. Byman and Matthew C. Waxman define coercion: "Coercion is the use of threatened force, including the limited use of actual force to back up the threat, to induce an aggressor to behave differently than it otherwise would."²² On the other hand, Edward Luttwak introduces the new term instead of coercion that "armed suasion is to 'deterrence' (or 'dissuasion') what strength in general is to defensive strength."²³

¹⁸Phil William, "Thomas Schelling," in *Makers of Nuclear Strategy*, ed. by John Baylis and John Garnett (New York: St. Martin's Press, 1991), 120.

¹⁹Thomas Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966), 71.

²⁰*Ibid.*, 72.

²¹*Ibid.*, 71.

²²Daniel L. Byman and Matthew C. Waxman, "Kosovo and the Great Air Power Debate," *International Security* 24, no. 4 (Spring 2000), 9.

²³Edward Luttwak, *Strategy: The Logic of War and Peace* (Cambridge, MA: Belknap Press of Harvard University Press, 2002), 218.

As its most basic, deterrence means to dissuade an aggressor from beginning some special behavior; compellence is to persuade an aggressor to stop some special behavior that had started already or to induce some special behavior against an aggressor's intention. The ways of deterrence and compellence are threat and assurance. Schelling explains that "any coercive threat requires corresponding assurances; the object of a threat is to give somebody a choice. To say, 'One more step and I shoot,' can be a deterrent threat only if accompanied by the implicit assurance, 'And if you stop I won't.'" ²⁴

Moreover, deterrence is divided into two categories: deterrence by punishment and deterrence by denial. Glenn Snyder has explained these categories as follows:

A "denial" response, especially if it involves the use of nuclear weapons tactically, can mean high direct cost, plus the risk that the war may get out of hand and ultimately involve severe nuclear punishment for both sides. This prospect of cost and risk may exert a significant deterring effect. A "punishment" response, if powerful enough, may foreclose territorial gains, and limited reprisals may be able to force a settlement short of complete conquest of the territorial objective. ²⁵

With the concept of unacceptable damage, many scholars have concentrated on nuclear strategy when they mention deterrence. For instance, Michael S. Gerson observes, "Deterrence theory was developed against the backdrop of the Cold War nuclear arms race and focused on the prevention of nuclear conflict." ²⁶ From the perspective of states, unacceptable damage could be made from nuclear weapons. On the other hand, the scale of violence can vary, so there can be various types of deterrence. Therefore, deterrence is not only a matter of nuclear strategy. Borrowing from Schelling's studies, deterrence also applies to situations involving conventional weapons or LIP.

²⁴Schelling, *Arms and Influence*, 74.

²⁵Glenn Snyder, *Deterrence and Defense: Toward Theory of National Security* (Princeton, NJ: Princeton University Press, 1961), 15.

²⁶Michael S. Gerson, "Conventional Deterrence in the Second Nuclear Age," *Parameters: U.S. Army War College* 39, no. 3 (Fall 2009): 34.

In this sense, conventional deterrence has important features in its own right. Lieutenant Colonel Wendy L. Lichtenstein has noted:

...changes in alliances and coalitions from the Cold War to post-Cold War era clearly illustrate why conventional deterrence became dominant. Achieving consensus among alliances and coalitions is inherently difficult but gaining acceptance for the use of a nuclear deterrent in this construct would be exponentially difficult. Having to consider participant interests in order to achieve compromise and successful multilateral action greatly complicates the use of any nuclear deterrent, making conventional deterrence more acceptable.²⁷

Moreover, Gerson also considered the importance of conventional deterrence: “While the majority of academic research and public debate was concerned with the prevention of nuclear war—the net result was that deterrence became synonymous with nuclear weapons—conventional deterrence, appropriately, assumed an increasingly important role in the development of military strategy during this period.”²⁸

Overall, even though a majority of scholars have concentrated on deterrence in nuclear strategy, conventional deterrence has also been considered significantly. Indeed, scholars such as Schelling and Snyder were concerned about not only deterring conventional conflict itself, but also deterring conventional conflict in contexts where escalation to nuclear conflict was a serious concern.

3. Conventional Deterrence for North Korean LIP

Pre-existing studies have usually focused on nuclear issues rather than on LIP when they researched North Korean provocations. It is an obvious fact that a nuclear weapon is a question of life or death for the nation. Crises that could lead to nuclear weapons use, however, are likely to begin at some level of conventional conflict. Therefore, conventional deterrence should be considered significantly as well.

In this context, the United States has provided extended nuclear deterrence to the ROK. Michael McDevitt said that “[t]he Obama administration has been attentive to the

²⁷Wendy L. Lichtenstein, “Conventional Military Deterrence—Its Rise to Dominance and Its Future,” *Strategy Research Project* (Carlisle, PA: U.S. Army War College, 2002): 12.

²⁸Gerson, *Conventional Deterrence*, 34.

importance of extended deterrence, the provision of the so-called nuclear umbrella to friends and allies threatened by states like North Korea that possess or are seeking nuclear weapons.”²⁹ This extended deterrence does not mean deterrence only by nuclear weapons. McDevitt explained that “[h]istorically, extended deterrence has been based on the combination of the strategic nuclear triad (sea-, air-, and land-based delivery platforms), tactical or non-strategic nuclear weapons permanently stationed abroad, and U.S. based weapons that could be deployed quickly in the case of emergencies.”³⁰ This is an important understanding of the breadth of extended deterrence because it applies to any potential North Korean provocation, not just use of a nuclear weapon.

The challenge of deterring LIP in the context of extended deterrence directs attention to the characteristics of North Korea. Deterrence theory is based on rationality. Patrick M. Morgan has said that “[d]eterrence theory and deterrence had appeal if described as rational in conception and action.”³¹ Rationality, however, simplifies the process of making a decision, leaving out various elements that are preference, faith, and psychological incompleteness. This idea of decision-making simplifies excessively, so it conflicts with how actual performers make decisions.³² These factors are vital in order to understand North Korean thinking about LIP; so deterrence theory should be enlarged from nuclear issues to conventional deterrence in order to account for these factors in deterring North Korean LIP.

In addition, many scholars have mentioned that it is hard to apply conventional deterrence to North Korean LIP, because there is a problem calculating the escalation of a crisis. North Korea has nuclear weapons. Bryan Monroe has said that, “A U.S. official who briefed reporters in Seoul said that North Korea ‘has demonstrated at least three

²⁹Michael McDevitt, “Deterring North Korean Provocations,” *Brookings East Asia Commentary* no. 46 (Washington, DC: Brookings, February 2011): <http://www.brookings.edu/research/papers/2011/02/north-korea-mcdevitt>.

³⁰*Ibid.*

³¹Patrick M. Morgan, *Deterrence Now* (Cambridge, UK; New York: Cambridge University Press, 2003), 12.

³²Robert Jervis, “Rational Deterrence: Theory and Evidence,” *World Politics* 41 (January 1989): 187, doi: 10.2307/2010407.

times now that they can detonate a nuclear weapon.’”³³ Thus, LIP could escalate into a nuclear crisis. Unfortunately, however, it is difficult to gauge at what time a point of escalation would occur. According to Ken E. Gause, “Any discussion of deterrence should be tied to considerations of escalation.... North Korea’s calculus is tied largely to the personality and predilections of an individual.”³⁴ Because LIP could escalate into nuclear crisis quickly, many scholars consider that North Korean provocations are a nuclear crisis automatically. Nevertheless, conventional deterrence is still significant. If it were possible to deter LIP from the beginning, the escalation of the crisis would be no problem.

Lastly, the conditions of deterrence are also the reason for focusing on a North Korean nuclear crisis rather than LIP. There are two essential conditions, capability and willingness, for successful deterrence. The capability means ability to return unacceptable damage to an aggressor when the aggressor initiates an assault with a weapon. The problem, however, is that from the perspective of conventional deterrence it is difficult to find out what is unacceptable damage to an aggressor. In the case of North Korea and conventional deterrence, it is difficult because that nation’s level of acceptable damage is not known and may be very high. Edward Rhodes has said, “Potential aggressors regularly have proven [undeterrable] despite the best efforts of intelligent, committed [deterrents] possessing superior conventional military capabilities.”³⁵

To increase the credibility of the threat of retaliation, it is essential to give an obvious message of the plans to retaliate when an aggressor provokes. Morgan has said that, under the logic of deterrence, conveying some information to the challenger with great clarity, especially about one’s military capabilities, is beneficial.³⁶ In conventional deterrence, there is a particular problem of informational asymmetry. Jaewook Jung has

³³Bryan Monroe, “5 Things We Still Don’t Know about North Korea’s Nukes,” *CNN Politics*, April 12, 2013, <http://www.cnn.com/2013/04/12/politics/5-things-north-korea-nukes>.

³⁴Ken E. Gause, “North Korea’s Provocation and Escalation Calculus: Dealing with the Kim Jong-un Regime,” *Center for Naval Analyses* (August 2015): 46, https://www.cna.org/cna_files/pdf/COP-2015-U-011060.pdf.

³⁵Edward Rhodes, “Conventional Deterrence,” *Comparative Strategy* 19, no. 3 (2000): 223.

³⁶Morgan, “Deterrence Now,” 15–19.

observed that “[p]otential aggressors could make alternative ways to escape the threat of retaliation by exploiting the message from opponents.”³⁷ For instance, if the ROK-U.S. alliance prepared new methods for attacking the origin of provocation and gave such a message to North Korea for deterrence, North Korea could devise alternative ways to provoke after recognizing the alliance’s intended response.

Deterrence (not only conventional deterrence, but also nuclear deterrence) has another problem: willingness. Willingness means the credibility for retaliation. Pre-existing studies explained that the willingness for retaliation is a core element for successful deterrence. There are many obstacles to practicing retaliation such as experiences in the past or characteristics of national leadership.

Especially in a democratic system, which is affected easily by public opinion, leadership can find it difficult to commit to such a policy, and that may prevent leaders from showing a strong willingness to retaliate.³⁸ For instance, Israel has a well-trained military and strong willingness for retaliation, but also has political weakness that comes from the pressure of adverse public opinion or political opponents. So, they have difficulty deterring adversaries’ LIP. Jonathan Shimshoni has said that “the divergent internal political-cultural attributes of Israel and her Arab neighbors have undermined the credibility and efficacy of many of Israel’s deterrent threats.”³⁹

Pre-existing studies have only focused on a defender’s willingness to retaliate against an aggressor’s provocations. But, in order to activate deterrence, an aggressor’s ability to understand the defender’s willingness for deterrence is also important. Therefore, deterrence is linked with communication, and hinges on the strong conflict between a defender’s willingness for retaliation against provocations and an aggressor’s willingness to undertake provocations. Thus, the willingness of the aggressor has to be considered. In this context, even though North Korean willingness to provoke in 2010

³⁷Jaewook Jung, “NK’s Military Provocation,” 141.

³⁸*Ibid.*, 142.

³⁹Jonathan Shimshoni, *Israel and Conventional Deterrence: Border Warfare from 1953 to 1970* (Ithaca, NY: Cornell University Press, 1988), 224–225.

was apparently strong, there are not enough studies about their willingness to undertake provocations.

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

This thesis explores the reason for the failure to deter North Korean LIP. The most important issue is which requirements can deter North Korean LIP. As mentioned in the literature review, there are two core conditions for deterrence, capability and credibility. This thesis examines the hypothesis that credibility may be more important for conventional deterrence than capability, even though celebrated scholars have argued that capability is more significant than credibility. Moreover, in the North Korean case, credibility and capability may have different roles for achieving conventional deterrence.

In addition to the requirements for conventional deterrence, the situation of an aggressor is also significant. Even though a defender may be well prepared to deter provocation with capability and willingness, an aggressor may carry out provocation anyway if it has strong motives for provocation, or a strong tolerance for high levels of acceptable retaliation, or if its decision making departs from deterrence theory's expectations of rational action. This thesis examines the hypothesis that deterring North Korean LIP poses unique challenges in these respects.

Lastly, the escalation of crisis is also an important issue in conventional deterrence. When an aggressor provokes through conventional weapons against a defender, an aggressor may consider the escalation of crisis. Although a defender could withstand an attack by conventional weapons, it is less likely to withstand a nuclear attack. A defender, then, might hesitate to retaliate because the retaliation may cause a bigger retaliation by an aggressor. This dynamic escalation may make conventional deterrence more challenging. This thesis examines the hypothesis that conventional deterrence of North Korea is more difficult because of different perceptions of concern over escalation.

Overall, it is necessary to address various elements in analyzing conventional deterrence. To examine the reason for the failure of conventional deterrence against

North Korean LIP in 2010, it is necessary to analyze these diverse elements comprehensively.

E. RESEARCH DESIGN

This thesis focuses on a single case study about the bombardment of Yeonpyeong in 2010 to explain the failure of conventional deterrence against North Korean LIP. The case study is narrative and qualitative, not comparative or quantitative. To analyze the single case, this thesis examines conventional deterrence from the bottom up. Therefore, this thesis uncovers which element is related with conventional deterrence in the early phase of LIP. After that, this thesis applies the elements of conventional deterrence to the bombardment of Yeonpyeong in 2010. Following that, this thesis explains the reasons for the failure of conventional deterrence. Finally, this thesis provides some lessons learned and makes suggestions for future research.

F. THESIS OVERVIEW AND CHAPTER OUTLINE

First, this thesis studies the roots of conventional deterrence. Conventional deterrence is a branch of deterrence. The study explains what deterrence is and which requirements are necessary for achieving deterrence. After that, the definition of conventional deterrence is further clarified through a comparison with nuclear deterrence. Basically, there are two requirements for conventional deterrence, capability and credibility. This thesis examines the function of these factors in the Korean context in detail. Particularly, this thesis focuses on credibility rather than capability. The most difficult task in studying credibility as it relates to conventional deterrence is to understand how an aggressor assesses a defender's credibility. This thesis draws on some scholars' ideas to solve that task. In this process, it is possible to analyze which requirement is important in each phase of provocation. In addition, not only is the defender's capability and credibility important, but also the aggressor's situation. Normally, it is easy to think that conventional deterrence is related with only the preparation of a defender. If, however, an aggressor has very strong motives for provocation, the defender's effort at conventional deterrence can be useless. Therefore, it

is necessary to understand the aggressor's situation for achieving real conventional deterrence.

Second, this thesis provides a table to apply the requirements for conventional deterrence to a case of provocation. This table can be helpful to understand the importance of requirements in conventional deterrence at a glance. Moreover, this task suggests future research about another case of conventional deterrence.

Third, this thesis examines deeply into the case of the bombardment of Yeonpyeong in 2010 with analyzed requirements for conventional deterrence. This examination explains the reasons for the failure of conventional deterrence in the bombardment of Yeonpyeong in 2010.

Finally, this thesis extracts some lessons from the examination of the bombardment of Yeonpyeong in 2010, and suggests some relevant prescriptions for conventional deterrence in the future. Moreover, this thesis introduces some future research that was beyond the scope of this study.

II. CONVENTIONAL DETERRENCE

The failure to deter North Korean LIP is an example of the failure of conventional deterrence. Thus, in order to find out the reason for the failure to deter North Korean LIP, it is necessary to understand what conventional deterrence is. Conventional deterrence is a subordinate concept of deterrence. Therefore, in order to understand conventional deterrence, it would be better to begin by examining what deterrence is. After defining the term of deterrence, this chapter explains important elements of conventional deterrence and compares nuclear deterrence and conventional deterrence. Then, this chapter extracts some key specific issues regarding deterrence of LIP.

Following this process, this chapter summarizes the criteria to explain reasons for the failure of conventional deterrence in a simple table that can be used to evaluate how the criteria apply to any particular case. Chapter 3 then utilizes this table to evaluate the criteria for conventional deterrence in the critical case of the bombardment of Yeonpyeong in 2010.

A. THE ROOTS OF CONVENTIONAL DETERRENCE

Conventional deterrence comes from deterrence. To understand conventional deterrence, it is necessary to study deterrence itself. So, this section examines the definition of deterrence and studies the requirements of conventional deterrence.

1. Definition of Deterrence

To achieve the security of a state, a state should prevent any attempt to change the status quo by a challenger. In general, a state tries to keep the status quo by diplomatic ways. But a challenger may try to change the status quo by force. Then, a state cannot help relying on the role of military. Therefore, deterrence is based on military power.⁴⁰

Deterrence could be defined in various dimensions. It is helpful to examine definitions that were advanced by past scholars. Allyssa Demus has effectively organized

⁴⁰ Jae Yeop Kim and Jong Ha Kim, "Enhancing Korea's Conventional Deterrence Strategy," *New Asia* 68, no. 3 (Fall 2011),:118, http://nari.re.kr/bbs/board.php?bo_table=newasia_1&wr_id=668&page=9.

those past scholars' definitions of deterrence. Previous scholars such as Glenn Snyder, Herman Khan, and Thomas Schelling defined the meaning of deterrence as follows:

- “Discouraging the enemy from taking action by posing for him a prospect of cost and risk outweighing his prospective gain.”⁴¹
- “Specifying all alternatives available to the enemy, and then the various threats and promises we can make to influence his choice among these alternatives.”⁴²
- “The exploitation of potential force. It is concerned with persuading a potential enemy that he should in his own interest avoid certain courses of activity.”⁴³
- “The prevention from action by fear of the consequences. Deterrence is a state of mind brought about by the existence of a credible threat of unacceptable counteraction.”⁴⁴

In summary, deterrence is the behavior that persuades existential or potential enemies to give up their militarily hostile action before it is put into practice. Jonathan Shimshoni suggests another definition: “Deterrence is a specific coercive phenomenon: a defender’s dissuasion—through the use of implied, explicit, stated, or demonstrated threats—of an opponent’s intention to undertake or expand violent action.”⁴⁵ Therefore, the core of deterrence is to manipulate “an aggressor’s estimation of the cost/benefit

⁴¹Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton, NJ: Princeton University Press, 1961), 3, quoted in Alyssa Demus, “Conventional Versus Nuclear: Assessing Comparative Deterrent Utilities,” *Army Capabilities Integration Center*, 8, accessed October 8, 2016, http://www.arcic.army.mil/app_Documents/SLTF/Conventional%20Versus%20Nuclear%20Assessing%20Comparative%20Deterrent%20Utilities.pdf.

⁴²Herman Kahn, *On Thermonuclear War* (New Brunswick, NJ: Transaction Publishers, 1960), 126, quoted in Alyssa Demus, “Conventional Versus Nuclear: Assessing Comparative Deterrent Utilities,” *Army Capabilities Integration Center*, 8, accessed October 8, 2016, http://www.arcic.army.mil/app_Documents/SLTF/Conventional%20Versus%20Nuclear%20Assessing%20Comparative%20Deterrent%20Utilities.pdf.

⁴³Thomas Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1960), 139, quoted in Alyssa Demus, “Conventional Versus Nuclear: Assessing Comparative Deterrent Utilities,” *Army Capabilities Integration Center*, 8, accessed October 8, 2016, http://www.arcic.army.mil/app_Documents/SLTF/Conventional%20Versus%20Nuclear%20Assessing%20Comparative%20Deterrent%20Utilities.pdf.

⁴⁴Department of Defense, *Dictionary of Military and Associated Terms* (Washington, DC: 2012), 139, quoted in Alyssa Demus, “Conventional Versus Nuclear: Assessing Comparative Deterrent Utilities,” *Army Capabilities Integration Center*, 8, accessed October 8, 2016, http://www.arcic.army.mil/app_Documents/SLTF/Conventional%20Versus%20Nuclear%20Assessing%20Comparative%20Deterrent%20Utilities.pdf.

⁴⁵ Shimshoni, *Israel and Conventional Deterrence*, 5.

calculation of taking a given action,” according to Austin G. Long.⁴⁶ Therefore, deterrence is “the threat of force intended to convince a potential aggressor not to undertake a particular action because the costs will be unacceptable or the probability of success extremely low.”⁴⁷

There are some requirements to achieve deterrence. Alexander L. George and Richard Smoke have argued there are three requirements for deterrence: “(1) the full formulation of one’s intent to protect a nation; (2) the acquisition and deployment of capacities to back up the intent; and (3) the communication of the intent to the potential ‘aggressor.’”⁴⁸ In their perspective, a state should have capability and credibility to retaliate against adversaries’ hostile behaviors. Moreover, the communication of the state’s intent to adversaries is also important. Robert Jervis argued that there are two requirements for deterrence. He said that “successful deterrence requires a combination of capabilities and credibility. These two sets of factors are not entirely separate; the ability to block the aggressor at low cost increases credibility.”⁴⁹ Therefore, there are two requirements for deterrence, capability and credibility.

As mentioned previously, deterrence is to stem an aggressor’s hostile behavior. Then, that raises the issue of how a defender achieves deterrence. In other words, what is necessary to stop an aggressor’s antagonistic behavior? The way of deterrence is the way of distinguishing between nuclear deterrence and conventional deterrence. Since the birth of nuclear weapons, much deterrence thinking has focused on the issue of nuclear weapons, because nuclear weapons are the most threatening weapons facing an aggressor who must estimate the cost/benefit calculation of taking a given action. According to Demus, “One of the smaller warheads in the current U.S. arsenal, the W76, has a yield of

⁴⁶Austin G. Long, *Deterrence: From Cold War to Long War: Lessons from Six Decades of Rand Deterrence Research* (Santa Monica, CA: Rand Corp., 2008), 7. http://www.rand.org/content/dam/rand/pubs/monographs/2008/RAND_MG636.pdf.

⁴⁷Michael S. Gerson, “Conventional Deterrence in the Second Nuclear Age,” *Parameters* (Quarterly Journal of the U.S. Army War College, Autumn 2009): 34.

⁴⁸Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974), 64.

⁴⁹Robert Jervis, “What Do We Want to Deter and How Do we Deter It?” in *Turning Point: The Gulf War and U.S. Military Strategy*, ed. L. Benjamin Ederington and Michael J. Mazarr (Boulder, CO: Westview Press, 1994), 127.

100 kilotons. As a point of comparison, the nuclear weapon deployed in the bombing of Hiroshima possessed a yield of 15 kilotons. It killed one fourth of Hiroshima's population (approximately 70,000 people) in the initial blast."⁵⁰

Even though nuclear weapons are the most powerful weapons, the problem is whether a state will actually use nuclear weapons. Stephen M. Younger has said that "the notion of 'deterrence' was refined to emphasize the role of nuclear weapons in preventing any provocative action on the part of the Soviets—any move that threatened the United States or its allies would bring a swift and devastating response."⁵¹ But once the Soviet Union attained strategic parity, it was recognized that, paradoxically, nuclear weapons likely would not be used in response to Soviet conventional action. Strategic stability undermined deterrence of conventional aggression—the "stability-instability paradox."⁵² In order to stop an aggressor's hostile conventional behavior, a defender should prepare conventional responses. Therefore, conventional deterrence is considered one of the alternatives to nuclear deterrence.

2. Conventional and Nuclear Deterrence Compared

Conventional deterrence is deterrence through conventional force. Conventional force means military power except nuclear weapons. Shimshoni supports those definitions. According to Shimshoni, "I define a conventional situation as one in which neither defender nor challenger has immediate access to nuclear weapons, though their allies may be nuclear powers."⁵³ When a defender cannot achieve deterrence with nuclear weapons, a defender should exploit conventional deterrence. In the same context, according to Mearsheimer, conventional deterrence is defined as "a function of the capability of denying an aggressor his battlefield objectives with conventional forces."⁵⁴

⁵⁰Demus, "Conventional Versus Nuclear," 11.

⁵¹Stephen M. Younger, *The Bomb: a New History* (New York: Ecco Press, 2009), 51.

⁵²Robert Jervis, "Arms Control, Stability, and Cause of War," *Political Science Quarterly* 108, no. 2 (Summer 1993): 247, <http://www.jstor.org/stable/2152010>.

⁵³Shimshoni, *Israel and Conventional Deterrence*, 2.

⁵⁴John J. Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983), 15.

In a nutshell, conventional deterrence would be the other main stream of deterrence in the situation of the limited use of nuclear weapons.

Then, what characteristics are different between nuclear deterrence and conventional deterrence? Even though the difference starts in what weapons are used for deterrence, the effects of the difference in weapons are diverse and huge. Shimshoni organizes the different characteristics between nuclear deterrence and conventional deterrence in an easily accessible manner as shown in Table 1.

Table 1. Comparison of Conventional and Nuclear Deterrence.⁵⁵

Characteristic	Nuclear deterrence	Conventional deterrence
Mode of threat	Punishment (costs)	Object denial (and punishment)
Dimensions of threat credibility	Will	Will and skill
Structure of relationship	Symmetrical Bilateral Static Inescapably strategic Game of Chicken	Can be asymmetric Very susceptible to outside involvement Dynamic Can be nonstrategic May be any structure
Requirements of shared knowledge and importance of detail	Minimal, detail not important; desire to share critical knowledge	Maximal; detail critical; ambivalent desire to share critical knowledge
Convertibility and brinkmanship	Highly convertible between levels; brinkmanship effective	Convertibility and brinkmanship depend on specific structural characteristics
Deterrence-compellence (d-c)	Status quo clear; d-c easy to differentiate; compellence more difficult	Status quo not clear; d-c difficult to differentiate; compellence not clearly more difficult
Relevance of deterrence	Mutual fear of punishment dominates; deterrence always relevant	May or may not be, depending on structure of relationship
Success/failure	Clear, dichotomous	Not clear; dependent on time frame and level of analysis

⁵⁵Source: Shimshoni, *Israel and Conventional Deterrence*, 27.

Examination of Shimshoni's table leads to an appealing question about classified characteristics of nuclear and conventional deterrence. That is, what is the fundamental reason for distinguishing the characteristics between nuclear and conventional deterrence? The crucial reason for the occurrence of those differences comes from different tolerances for nuclear weapons and conventional weapons. Even though a country may not accept the destructive power of nuclear weapons, it may accept the threat of conventional weapons. Therefore, a country can design conventional responses in defense of conventional attack. This dynamic structure of conflict is naturally linked with the escalation of crisis. As a result, due to complicated elements and structures, a defender should consider more diverse conditions to achieve conventional deterrence than nuclear weapons. This is why conventional deterrence is complex, and leaders have to be concerned with conventional deterrence.

In addition, past scholars have argued that conventional deterrence has different requirements than nuclear deterrence. According to Morgan, "We can also briefly summarize the debates about what was needed, in association with nuclear deterrence, for deterrence on the conventional level. Three positions emerged: deterrence by a capacity to fight then escalate, by a capacity to deny, and by a capacity to defeat."⁵⁶ In his perspective, the main requirements of conventional deterrence are focused on capability. It is reasonable to assume that his concerns about the requirements of conventional deterrence came from the possibility of using these capabilities in response to an aggressor's attack, unlike a nuclear response that would entail unacceptable damage. But, are Morgan's requirements suitable for conventional deterrence? Is it correct to emphasize the capability for conventional deterrence? It is necessary to find out what elements are commensurate with conventional deterrence. The following section examines the important elements of conventional deterrence.

⁵⁶Morgan, *Deterrence Now*, 25.

B. REQUIREMENTS FOR CONVENTIONAL DETERRENCE

Past scholars have explained that there are two important types of deterrence: deterrence by punishment and deterrence by denial. According to Mearsheimer, “There is a well-known distinction between deterrence based on punishment, which involves threatening to destroy large portions of an opponent’s civilian population and industry, and deterrence based on denial, which requires convincing an opponent that he will not attain his goals on the battlefield.”⁵⁷ In his argument, it is possible to assume that deterrence by punishment would be a more common form of nuclear deterrence and deterrence by denial would be the way of conventional deterrence. Samuel P. Huntington concurs: “Deterrence itself, that is, the effort to influence enemy intentions, may be pursued through both ‘denial capabilities—typically, conventional ground, sea, and tactical air forces’ and ‘punishment capabilities—typically, strategic nuclear power for either massive or limited retaliation.”⁵⁸ Then, is the denial capability the most important requirement for conventional deterrence? Are the other requirements for deterrence not relevant to conventional deterrence? In order to answer those questions, this section examines the meaning of each requirement, and finally, uncovers the most important requirement for conventional deterrence.

1. Capability

A defender must have capability for achieving conventional deterrence. Capability can be categorized as denial capability and punishment capability. This section minutely examines those capabilities.

a. Denial Capability

Denial capability is an important requirement for conventional deterrence. Denial capability has three of its own features. First, denial capability is defensive capability. Past scholars have argued that deterrence by denial is the core value of conventional deterrence. “Conventional deterrence is primarily based on deterrence by denial, the

⁵⁷Mearsheimer, *Conventional Deterrence*, 14–15.

⁵⁸Samuel P. Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” *International Security* 8, no. 3 (Winter 1983–1984): 36–37, <http://www.jstor.org/stable/2538699>.

ability to prevent an aggressor from achieving its objectives through conflict,” claims Gerson.⁵⁹ This concept comes from the belief that the conventional military power of an aggressor could be incapacitated by defensive capability. Therefore, deterrence by denial means defensive capability. Defenders, for instance, could defend the shelling of an aggressor through trenches or armored vehicles. Huntington also supports this concept: “In current NATO planning, nuclear and conventional capabilities can both be used for defensive purpose; only nuclear capabilities can be used for retaliatory purpose.”⁶⁰

Second, offensive capability is also denial capability. This offensive capability means the capability of counterattack. A defender could stem the ongoing offensive behavior of an aggressor through counterattack. A defender, for instance, could quickly counterattack the origin point of an aggressor’s shelling through the defender’s artilleries, when an aggressor’s artilleries were opening fire. At the end of the day, the purpose of deterrence by denial is to obstruct the goal or willingness of an aggressor. According to Carl Von Clausewitz, “War is thus an act of force to compel our enemy to do our will.”⁶¹ In the same context, an aggressor would pursue political goals or willingness through provocations. If a defender can stem the ongoing offensive behaviors of an aggressor by the capabilities of counterattack, an aggressor cannot achieve political goals or willingness.

Third, a defender could stem the quick victory of an aggressor through denial capability. Usually, an aggressor would pursue relatively quick victory in conventional warfare due to cost and time. It is better to end conventional warfare quickly, if an aggressor’s political goal or willingness might diminish. According to Mearsheimer, “[g]iven that cost is largely dependent on the speed with which objectives are attained, we must concern ourselves with determining the conditions under which decision makers are likely to conclude that they can quickly achieve their objectives on the battlefield.”⁶²

⁵⁹Gerson, “Conventional Deterrence in the Second Nuclear Age,” 37.

⁶⁰Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” 37.

⁶¹Carl von Clausewitz, *On War*, ed. and trans. Michael Eliot Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 75.

⁶²Mearsheimer, *Conventional Deterrence*, 24.

Gerson echoes this idea, adding, “The history of conventional warfare demonstrates that most nations desire and develop military strategies designed for rapid, blitzkrieg-style wars rather than protracted wars of attrition.”⁶³ If a defender could defend the attack of an aggressor in the early phase of conventional warfare, the aggressor would not achieve a quick victory. Then, the possibility of extended conventional warfare and the cost of provocation would be increased. Eventually, an aggressor could not help giving up provocative behaviors.

In a nutshell, deterrence by denial (or denial capability) can impede the political goal and intention that an aggressor pursues through provocations. The important issue of deterrence by denial is time. That time is just after conflict begins. If a defender can repel an aggressor’s sudden attack, a defender may achieve conventional deterrence. Therefore, deterrence by denial is one of the important requirements for conventional deterrence.

Nevertheless, there would be cases where deterrence by denial does not work. In any case of provocation, an aggressor might accomplish his goal depending on his initial plan despite the defender’s denial capability. Huntington observes, “An initial offensive by a strong and determined attacker, particularly if accompanied by surprise, inevitably will score some gains.”⁶⁴

There are diverse reasons to support this view: (1) if an aggressor could find the weak point of a defender, (2) if benefits that would be gotten through provocations were bigger than losses, (3) if there were huge domestic pressures on the aggressor’s leader, and so on. Rhodes summarizes those reasons into two factors as follows:

The first is how potential aggressors frame their understanding of the situation confronting them. States that see themselves as confronted by domestic or international [*losses*] if they fail to act are likely to be more risk-acceptant—and more likely to be undeterrable for all the reasons discussed in this section—than are states that see themselves facing possible [*gains*] if they act.... The second factor is how potential aggressors evaluate the relative attractiveness of the offense and the defense. If they perceive military technology as favoring the offense over

⁶³Gerson, “Conventional Deterrence in the Second Nuclear Age,” 37.

⁶⁴Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” 38.

the defense (that is, if they see the offense as the dominant form of warfare) then the chances that they are undeterrable again increase.⁶⁵

In these kinds of situations, it is very likely that an aggressor will not be deterred from provocation. Therefore, there are two remedies for those assumptions. First, fundamentally, it is best to let an aggressor know that provocation would yield not only a tiny benefit, but also rather huge losses. This idea is linked with credibility. Second, the method of conveying the defender's credibility is retaliation regardless of the level of threat.

b. *Punishment Capability (Retaliation)*

Deterrence by punishment is essentially offensive capability. Punishment (or retaliation) begins after the provocation of an aggressor. A defender will retaliate against an aggressor in order to obtain the reputation of a defender. Therefore, deterrence by punishment is the behavior to prevent a provocation of the future. If there were a provocation by an aggressor, a defender should retaliate against an aggressor for the commitment of practicing the willingness of a defender. As previously mentioned, however, past scholars have argued that deterrence by punishment is usually linked with nuclear deterrence.⁶⁶ This concept comes from the original concept of deterrence. As described earlier, deterrence is, as Gerson claims, "the threat of force intended to convince a potential aggressor not to undertake a particular action because the costs will be unacceptable or the probability of success extremely low."⁶⁷ Therefore, an aggressor would rationally give up provocation after calculation of benefits and unacceptable damages. This unacceptable damage means nuclear weapons. According to Charles T. Allan, "During the Cold War, deterrence was perceived as a primarily punitive strategy.

⁶⁵Rhodes, "Conventional Deterrence," 223–224.

⁶⁶T. V. Paul, *Asymmetric Conflict: War Initiation by Weaker Powers* (Cambridge, UK: Cambridge University Press, 1994), 8; Mearsheimer, *Conventional Deterrence*, 15.

⁶⁷Gerson, "Conventional Deterrence in the Second Nuclear Age," 34.

The cold war punitive definition of deterrence emphasized the devastating effects on the targeted society and regime.”⁶⁸

Recently, however, deterrence by punishment is not only associated with nuclear deterrence, but also conventional deterrence. Through improved conventional capabilities, a defender could retaliate with either counterforce or countervalue actions against an aggressor.⁶⁹ According to Allan, “The advocates of true dynamic deterrence would emphasize not only the destruction of battlefield targets but also the capability of conventional forces to strike strategically throughout the depth of an aggressor state.”⁷⁰ Demus has also supported this argument: “[s]ome of the newer conventional capabilities such as the Massive Ordnance Air Blast bombs were designed with an eye towards increasing conventional weapons’ blast effect, a function of deterrence by punishment, not denial.”⁷¹

On the other hand, deterrence by conventional punishment would raise a significant issue, the escalation of crisis. If an aggressor had strong willingness for provocation, he would inevitably succeed in some part.⁷² Then, a defender would have to retaliate against the provocation of an aggressor. Correspondingly, an aggressor might also counterattack against the retaliation of a defender with stronger military power. Shimshoni describes the situation of escalation as follows:

We expect bargaining to take place at a low level but to be dominated by the risk of inadvertent escalation. A defender, for example, can initiate intentionally low-level violent activity that may—unintentionally—escalate out of control. If he is more willing than the challenger to accept the risk of escalation, then he should prevail in the contest of wills, and deterrence holds.⁷³

⁶⁸Charles T. Allan, “Extended Conventional Deterrence: In from the Cold and Out of the Nuclear Fire?” *The Washington Quarterly* 17, no 3 (January 5, 2010): 205, <http://dx.doi.org/10.1080/01636609409443417>.

⁶⁹*Ibid.*, 209.

⁷⁰*Ibid.*

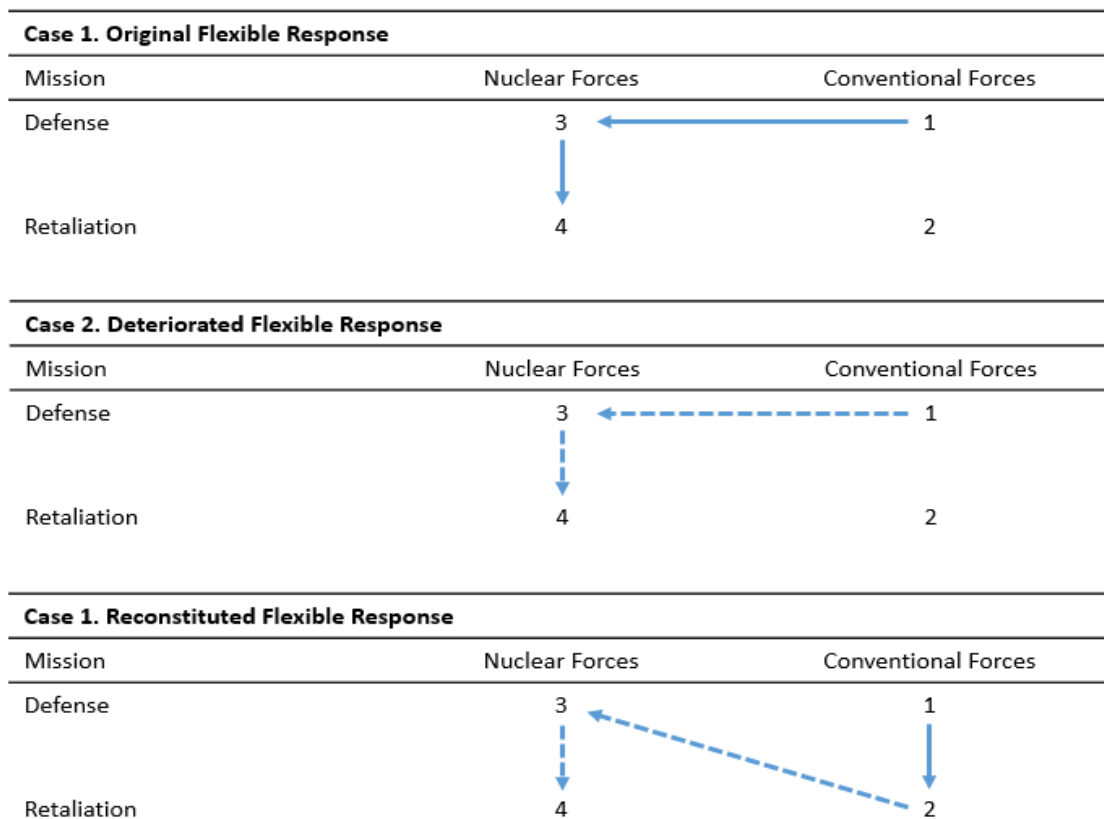
⁷¹Demus, “Conventional Versus Nuclear,” 10.

⁷²Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” 38.

⁷³Shimshoni, *Israel and Conventional Deterrence*, 10.

Huntington also emphasizes the role of conventional retaliation. “Almost every other form of retaliation against conventional attack involves escalation, either vertical, as in NATO doctrine, or, conceivably, horizontal.... Deterrence without retaliation is weak; retaliation through escalation is risky. Conventional retaliation strengthens the one without risking the other.”⁷⁴ He also explains the situation of escalation as shown in Figure 1.

Figure 1. Huntington’s Analysis of Various Flexible Responses.⁷⁵



Therefore, deterrence by punishment highlights the issue of escalation. This issue creates a paradox: a strong retaliation threat can be a weaker deterrent for a low intensity provocation than for a major one. Conversely, if there would not be any retaliation, the

⁷⁴Source: Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” 41.

⁷⁵Ibid.

credibility of a defender will be damaged. The best solution (if a country is unable to keep status quo), is to retaliate against the provocation of an aggressor through a quick, correct, and proportional response.⁷⁶ Moreover, it is also important to deliver the intention that there will be corresponding punishment if an aggressor attempts further provocation. Naturally, deterrence by punishment is also associated with credibility.

2. Credibility

In a given confrontation either deterrence succeeds and the status quo prevails or else the status quo is challenged and deterrence fails.

—Jonathan Shimshoni, *Israel and Conventional Deterrence*⁷⁷

The credibility of deterrence depends on an aggressor's judgment of a state's military capability and political willpower.⁷⁸ Daryl G. Press explains: "The credibility of a threat is defined as the perceived likelihood that the threat will be carried out if the conditions that are supposed to trigger it are met. A highly credible threat is one that people believe will be carried out; a threat has little credibility if people believe it is a bluff."⁷⁹ Later in this subsection, the discussion draws in the eight conditions for measuring the credibility of conventional deterrence suggested by Press, which are included in the criteria of requirements for conventional deterrence developed at the end of this chapter and applied to the case study of the bombardment of Yeonpyeong in 2010.

As previously mentioned, the most important requirement for conventional deterrence is associated with credibility. John Stone emphasizes credibility, stating that "[w]hile deterrence theory covers a great deal of other ground, it clearly places credibility at the center of matters."⁸⁰ Credibility involves an aggressor's belief (or aggressor's

⁷⁶Sun Nam Hwang, "A Study on 'Problems and Alternatives for the Starting Point Attack as a Deterrence of North Korea's Local Provocation,'" *The Collection of Dissertations of Air Force Academy of the ROK* 66, no. 2 (2015): 200, <http://www.riss.kr/link?id=A101809133>.

⁷⁷Shimshoni, *Israel and Conventional Deterrence*, 11.

⁷⁸Gerson, "Conventional Deterrence in the Second Nuclear Age," 42.

⁷⁹Daryl G Press, *Calculating Credibility: How Leaders Assess Military Threats* (Ithaca, NY: Cornell University Press, 2005), 10.

⁸⁰John Stone, "Conventional Deterrence and the Challenge of Credibility," *Contemporary Security Policy* 33, no. 1 (2012): 110, <http://www.tandfonline.com/doi/abs/10.1080/13523260.2012.659591>.

perception), the willingness of both sides, and the military capabilities for supporting their willingness.

Provocation occurs when deterrence fails. As Robert Art explains, “Deterrence therefore employs force peacefully. It is the threat to resort to force that is the essence of deterrence. If the threat has to be carried out, deterrence by definition has failed.”⁸¹ Thus, the failure of deterrence occurs at the moment that a bullet leaves a gun barrel.

Provocation is the result of an aggressor’s calculation about profit and loss. Willingness usually has influence on credibility. If a defender’s willingness were stronger than an aggressor’s willingness, it is possible to keep the status quo; in other words, deterrence is achieved. The converse situation, on the other hand, yields provocation. Therefore, to gain credibility, a defender makes an aggressor believe that loss will be greater than profit by showing the defender’s willingness to respond. According to John M. Collins, “Prospects of reward or punishment serve deterrence purposes if the likelihood that they would be applied appears plausible. Credibility increases that prospect from possible to probable in the opinion of opponents, *provided* incentives are neither insufficient nor too intense.”⁸² This statement confirms that a defender can deter an aggressor’s willingness through credibility.

Conventional deterrence credibility, however, is not a simple problem. In order to achieve credibility, which is an abstract concept, a defender faces three primary challenges: (1) How to make an aggressor believe the defender’s credibility; (2) How to measure credibility; and (3) How to convey that credibility.

a. *How a Defender Can Establish Credibility*

The most significant problem facing a defender is how to make an aggressor believe the credibility of the defender. There are two situations in which a defender can establish its credibility. First, an aggressor may believe a defender’s credibility when an

⁸¹Robert Art, “To What Ends Military Power?” *International Security* 4, no. 4 (Spring 1980): 6, <https://www.jstor.org/stable/pdf/2626666.pdf>.

⁸²John M. Collins, “Principles of Deterrence,” *Air University Review* (November-December 1979): 6, <http://www.au.af.mil/au/afri/aspi/airchronicles/aureview/1979/nov-dec/jcollins.html>.

aggressor could expect a defender's strong countermeasure based on past experiences.⁸³ Second, an aggressor can believe a defender's commitment when the aggressor's potential losses will be greater than any profit after calculating the balance of capabilities and the interests at stake in the current confrontation.⁸⁴

The "past actions theory" explains that credibility can be formed by past experiences. Press mentions that a country's credibility is created based on its history of fulfilling commitments or breaking past promises.⁸⁵ He summarizes two core claims of the past action theory: "(1) a country's credibility is affected by its record for keeping or breaking past commitments; and (2) a history of breaking commitments reduces credibility, while a history of keeping commitments increases it."⁸⁶ In other words, a defender can gain credibility by a record of past retaliation against an aggressor when provocations took place. A current provocation would be affected by a defender's past action, and a future provocation will be connected with current action because today is the past of the future. In a nutshell, past behavior of a defender is linked with a defender's reputation. As a result, a defender can obtain the credibility of deterrence by its reputation, based on its past actions.

There would be, on the other hand, some instances in which the past action theory is not applicable. To be specific, an aggressor might provoke a conflict without regard to past experiences under two conditions: (1) when he has enough military power to threaten a defender and to achieve its objective; (2) or when the profits to be gained by provocation are great enough to offset an aggressor's costs and risk of provocation.⁸⁷ Moreover, if an aggressor had never been in conflict with the defender previously, the impact of past action would be lessened. In those cases, a defender could obtain

⁸³Daryl G. Press, *Calculating Credibility: How Leaders Assess Military Threats* (Ithaca, NY: Cornell University Press, 2005), 11.

⁸⁴*Ibid.*, 20.

⁸⁵*Ibid.*, 11.

⁸⁶*Ibid.*

⁸⁷Hans J. Morgenthau, *A New Foreign Policy for the United States* (New York: Praeger, 1969), 138–139.

credibility through military balance. Huntington emphasizes how military force contributes to deterrence in three ways:

First, [defenders] may deter simply by being in place and thus increasing the uncertainties and potential costs to an aggressor, even though they could not mount an effective defense.... Second, military forces can deter by raising the possibility of a successful defense and hence forcing the aggressor to risk defeat in his effort or to pay additional costs for success.... Third, military forces can deter by threatening retaliation against assets highly valued by the potential aggressor.⁸⁸

The existence of military force is important for gaining credibility, but military balance is also a main element for obtaining credibility. According to Paul K. Huth, “The immediate balance of forces can critically influence the outcome of a limited aims strategy by the potential attacker.”⁸⁹ An aggressor might not defeat a defender with a quick and low cost victory because there is military balance. To be specific, if an aggressor wanted a victory through provocation, the aggressor should repel the defender’s military forces. Defender’s military forces should hinder the quick and low cost victory of an aggressor. Therefore, military existence and military balance could lead an aggressor to give up provocation—even though an aggressor ignores a defender’s history of upholding commitments, or has no history of any conflicts with the defender.

Credibility is the most important requirement for conventional deterrence. Credibility for conventional deterrence, however, cannot stand alone. When it is supported by capability, credibility can truly operate. Credibility without capability is a mere bluff. On the other hand, capability without credibility is dynamite without a wick. It can never explode. As a result, in order to make an aggressor believe in a defender’s credibility, a defender should not only prepare military capability, but also practice retaliation against an aggressor’s provocation. Through these behaviors, a defender can obtain credibility for conventional deterrence in the present and for the future.

⁸⁸Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” 35–36.

⁸⁹Paul K. Huth, *Extended Deterrence and the Prevention of War* (New Haven: Yale University Press, 1988), 57.

b. *How to Measure Credibility*

Even though it is understandable that credibility is the most important requirement for conventional deterrence, the challenge is to apply that credibility to conventional deterrence. Credibility is intangible; it exists only in the thoughts and perceptions of the adversary who is to be deterred. Thus, it is difficult to measure directly.⁹⁰ It is also difficult to approach a solution quantitatively with a function or a formulation. The better way to gauge credibility is to observe the change in the situation and to extract implications for how to affect conventional deterrence. Therefore, this thesis borrows from the ideas of Press, the past actions theory, and the current calculus theory. Press's theories are extremely useful because they shed light on the difficult problem of measuring credibility. Moreover, through examining those theories, we can glean criteria for assessing the failure of conventional deterrence in the 2010 bombardment of Yeonpyeong.

(1) Past Action Theory

As mentioned previously, a defender can obtain its credibility for conventional deterrence based on past behaviors. If the past actions of a defender are so important, which conditions affect the credibility for conventional deterrence? Press suggests eight conditions for measuring credibility for conventional deterrence. See Table 2.

⁹⁰Press, *Calculating Credibility*, 11.

Table 2. Versions of Past Actions Theory.⁹¹

Condition	Narrow version	Broad version
Geography	Action in one part of the world affect credibility in that part of the world	Actions in one part of the world affect credibility everywhere
Timing	Actions in one crisis affect credibility for a short period of time	Actions in one crisis affect credibility long into the future
Similarity of issues	Actions in one crisis affect credibility in future crises over similar issues	Actions in one crisis affect credibility in future crises over any issues
Similarity of stakes	Actions in one crisis affect credibility in future crises involving similar stakes	Actions in one crisis affect credibility in future crises involving any level of stakes
Same countries	Actions in one crisis affect credibility in future crises that involve the same two countries	Actions in one crisis affect credibility in future crises involving any other countries
Own leaders remain	Actions in one crisis affect credibility in future crises until one's own leaders change	Actions in one crisis affect credibility in future crises even after one's leaders change
Adversaries' leaders remain	Actions in one crisis affect credibility in future crises until the leaders of one's aggressor change	Actions in one crisis affect credibility in future crises even after the leader of one's aggressor change
Volatility of reputation	Actions in one crisis affect credibility only if they create a pattern of repeated behavior (repeatedly backing down, or repeatedly keeping commitments)	Single instances of backing down or keeping commitments substantially affect credibility in future crises

The past actions theory is easy to understand. If a defender fails to keep commitments against an aggressor, the defender's credibility will decrease in the future.⁹² Press suggests eight conditions for the defender to keep its commitments. A defender can answer those conditions with "yes" or "no." If a defender can say "yes," he can establish credibility. There is, however, a precondition that a defender has already retaliated for an aggressor's provocation previously. If there has not been any retaliation against the enemy, the enemy may have the view that there will never be retaliation by a defender. Therefore, retaliation (or reputation) is the prerequisite to measure credibility according to the past actions theory.

⁹¹Source: Ibid., 19.

⁹²Ibid., 18.

(2) Current Calculus Theory

Past actions theory, however, is not sufficient to assess credibility, because a situation changes dynamically in the present. Accordingly, an aggressor might ignore past actions of a defender and practice a provocation, or an aggressor could still be deterred despite past inaction to aggression. Therefore, alternative thinking is necessary to make up for the weak points of the past actions theory. That thinking is the current calculus theory. According to Press, “Current calculus theory posits that a country’s credibility is not tied to its past behavior; when leaders assess credibility in a crisis, they focus on the balance of capabilities and interests at stake in the current confrontation.”⁹³ Although Press is correct up to a point, the difficulty assessing credibility is intangibility. The interests at stake are also hard to assess. Therefore, the portion of balance of capability that can be calculated directly is most helpful to assess credibility.

To access the balance of capability, however, does not mean to evaluate the scale of capability. The main point for measuring the balance of capability is whether an aggressor has enough capability to achieve its objective⁹⁴ or a defender has enough capability to stem aggressor’s goal. Even though the aggressor’s capability is an important factor to evaluate the balance of capability, the defender’s capability is a more significant factor to assess credibility eventually. Thus, in order to assess credibility through the balance of capability, it is necessary to evaluate the two capabilities of a defender, denial capability and punishment capability. It is possible to evaluate a defender’s credibility by assessing those capabilities. Ultimately, this kind of assessment will be useful for understanding the reasons for the failure of conventional deterrence in the 2010 bombardment of Yeonpyeong.

3. Communication

How a defender conveys his credibility to an aggressor becomes critical in conventional deterrence; that is, communication. Even though a defender may have really strong credibility, a defender could fail to deter an aggressor’s provocation when that

⁹³Ibid., 20.

⁹⁴Ibid., 21.

credibility is not communicated effectively. Then, how does a defender achieve effective communication? What is effective communication? The main issues of effective communication are the way of communication and the clarity of communication. How does a defender convey its credibility to an aggressor? How much information should be delivered to an aggressor? This sub-section discusses these issues to inform the criteria of requirements for conventional deterrence developed at the end of this chapter.

In the case of nuclear deterrence, it is not necessary to worry about the matter of communication because the power of nuclear weapons is extremely strong.⁹⁵ An aggressor already knows its destructive power. In the case of conventional deterrence, however, an aggressor may not believe a defender's communication, because an aggressor could calculate the next step after the defender's counteraction. What is worse, there are some significant challenges in the communication of conventional deterrence.

Before discussing effective communication, it is important to know the role of communication in conventional deterrence. Communication is a crucial element to convey a defender's credibility to an aggressor. Without any communication between a defender and an aggressor, an aggressor will never know about the credibility of a defender. According to Keith Grint and Steve Woolgar, "Technology does not speak for itself but has to be spoken for. Thus, our apprehension of technical capacity is the upshot of our interpreting or being persuaded that the technology will do what, for example, its producers say it will do."⁹⁶ Therefore, communication is an essential factor to convey the defender's credibility in conventional deterrence.

Going back to the matter of effective communication, how does a defender convey its credibility to an aggressor? The answer is to demonstrate capability. If a defender shows its credibility to an aggressor with only some speeches, an aggressor may believe that defender's claim is a "bluff." Thus, a defender should demonstrate its capability in order to reveal its credibility. Stone also emphasizes the importance of demonstrating capability. He says that "[s]uch a narrative would presumably involve

⁹⁵Stone, "Conventional Deterrence and the Challenge of Credibility," 116.

⁹⁶Keith Grint and Steve Woolgar, *The Machine at Work: Technology, Work and Organization* (Cambridge, UK: Polity, 1997), 32.

some robust talk, but need not be limited to words alone. It might usefully be supplemented by exemplary acts of force in the form of carefully designed [manoeuvres] and firepower demonstrations.”⁹⁷ The defender’s credibility or military power without any demonstration would easily become a scarecrow. Smart crows will immediately know that a scarecrow does not move when they attempt to peck grains several times. Therefore, effective communication should not merely deliver the message about a defender’s credibility by declaration, but also show the defender’s capability by demonstration.

The problem of effective communication is the clarity of communication. The clarity (or ambiguity) of communication is sometimes very important to successful deterrence. A defender should consider the matter of clarity when it conveys its credibility by communication. This thesis calls that situation the “communication dilemma.” There are two types of communication dilemma. One centers on the sharing of information about military capability. If a defender wants to make an aggressor believe in the credibility of the defender’s potential response, to the defender must share information about capability. Then, how much information should be shared with an aggressor? Shimshoni points out this matter: “The defender is in a real dilemma: To deter, he must *appear* to be *ex post* superior, capable of executing his deterrent threats. But to really *be* *ex post* superior, he must keep most of his capabilities secret.”⁹⁸ In other words, in conventional deterrence, if a defender state makes a minute disclosure of its capability, an aggressor may attack its weak points, which an aggressor now knows. If a defender conceals its capability, an aggressor cannot believe the defender’s promised response is credible; and the possibility of provocation will increase. The solution for this dilemma is to stand between specificity and vagueness. In plain language, a poker player never put all his cards on the table at the very beginning; he opens his cards by stages. He merely shows his strong cards to an opponent at the beginning stage. Through this process, he can complicate an opponent’s calculations of victory or defeat. In the same context, Shimshoni points out the importance of inaccuracy as follows:

⁹⁷Stone, “Conventional Deterrence and the Challenge of Credibility,” 117.

⁹⁸Shimshoni, *Israel and Conventional Deterrence*, 18.

Given the dynamic nature of conventional forces, both challenger and defender are apt constantly to change their force structures, doctrines, and tactics in response to inaccurately perceived conditions on the other side. The inaccuracy is inevitable because of deception compounded by the need for prescience. Sooner or later the challenger is likely to perceive a window of opportunity, real or not.⁹⁹

Therefore, if a defender state shows only some parts of its critical capabilities to an aggressor, the aggressor will have more difficulty calculating loss and profit.

Moreover, the other communication dilemma centers on the level of warning directed at an aggressor, that is, the “red line.” Bruno Tertrais explains the history of the red line:

One of its first contemporary appearances is the ‘Red Line Agreement’ of 1928 between partners of the Turkish Petroleum Company.... It is used for instance in diplomacy to define one’s own position internally (“our red line should be...”) in preparation for a negotiation, to state that such-or-such concession would be unacceptable, or to fix the limits of a commitment. Likewise, it is used to privately define a threshold for action, often a *casus belli*.¹⁰⁰

Through examining the history of using “the red line,” Tertrais defines the meaning of red line, which is “[t]he manipulation of intents through (mostly public) statements for deterrence purposes, referring to the deliberate crossing of a certain threshold by an adversary, and relevant counteraction if this threshold is crossed.”¹⁰¹ For the purpose of this study, Tertrais provides a good working definition because the red line means a kind of warning against an aggressor’s provocative behavior. The purpose of this warning voice is to keep the status quo, deterrence. In a manner of speaking, the red line is the introduction of communication regarding a defender’s intention to respond or the prelude to conventional deterrence. The problem, however, is how a defender utilizes the red line.

⁹⁹Ibid.

¹⁰⁰Bruno Tertrais, “Drawing Red Lines Right,” *The Washington Quarterly* 37, no. 3 (Fall 2014): 7, <https://www.ciaonet.org/attachments/26815/uploads>.

¹⁰¹Ibid., 8.

Even though the red line seems to have strong influence on successful deterrence, the red line easily fails to deter the provocation of an aggressor in various conditions. Tertrais suggests the five shortcomings of the red line as follows:

Red lines fail when circumstances or consequences are not clear; when the adversary is not convinced of one's determination; when the penalty is not greater than the potential benefit. Moreover, red lines encourage adversary actions below the threshold. Lastly, red lines will be tested, with risks of miscalculation and unwanted escalation.¹⁰²

The problems of red lines just mentioned can be linked with the difficulties of credibility. The similarities can be summarized in three points. First, the critical point of a red line is that a listener (an aggressor) is more important than a speaker (a defender) as in the case of credibility. Success or failure in drawing a red line also depends on how much an aggressor believes the declaration of a defender. The second point is that a red line also faces the risks of miscalculation and escalation because the red line is also a type of declaration, not a practice, until provocation occurs. Therefore, an aggressor will test the red line to see whether a defender's commitment is real since an aggressor cannot verify a red line without the "reality" test. Finally, an aggressor state also continuously calculates its loss and benefit.

On the other hand, the red line has a different type of particular risk related to the issue of credibility. That is, a red line can cause provocation below the threshold.¹⁰³ Especially, the clearer the red line, the more provocation may arise since an aggressor could calculate that there may not be any countermeasure by a defender under the threshold. In 1950, U.S. Secretary of State Dean Acheson, for instance, clearly drew the defensive perimeter from the Ryukyus to the Philippine Islands, leaving out the Korean Peninsula.¹⁰⁴ North Korea miscalculated that the United States would abandon South Korea. If, however, a defender does not explain the repercussions of the red line to an

¹⁰²Ibid., 8–14.

¹⁰³Ibid., 12.

¹⁰⁴Dean Acheson, "Speech on the Far East," *Teaching American History* (January 12, 1950), <http://teachingamericanhistory.org/library/document/speech-on-the-far-east/>.

aggressor, an aggressor may test the edge of the defender's responses. A defender, thus, faces another type of dilemma.

To borrow Yoel Guzansky's own words, "If the red line is too vague it is not credible; if it is too sharp, it may be more credible but the cost of not realizing it is high."¹⁰⁵ Guzansky's statement confirms the dilemma of the red line. What, then, is a wise solution for the dilemma of the red line? Tertrais slightly mentions "fifty shades of red,"¹⁰⁶ for the solution of the dilemma.

C. CONDITIONS FOR CONVENTIONAL DETERRENCE FAILURE

A defender can believe that it has done all it can to deter provocation by an aggressor when a defender fulfills the requirements for conventional deterrence. However, conventional deterrence may still fail despite the defender's effort. Why does conventional deterrence still fail? What conditions of an aggressor cause provocation? This section examines three conditions contributing to deterrence failure identified by Barry Wolf:

(1) *The weaker state was highly motivated.* The high motivation may be due in whole or part to a strong commitment to particular values, a psychopathological leader, or a "crazy state" mentality. (2) *The weaker state misperceived some facet of the situation.* Misperceptions have included instances where the weaker state perceived a vulnerability that did not exist; expected no retaliation from the strong; or believed allies would come to its aid. (3) *The stronger state was vulnerable.* Such vulnerability may occur in the context of large-scale or low-intensity conflicts.¹⁰⁷

Wolf's taxonomy of deterrence failure can be integrated into two groups by the requirements for conventional deterrence, credibility and capability. The first and the second conditions are associated with credibility, and the last one is linked with capability.

¹⁰⁵Yoel Guzansky, "Thin Red Lines: The Syrian and Iranian Contexts," *Strategic Assessment* 16, no. 2 (July 2013): 31, http://www.inss.org.il/uploadImages/systemFiles/adkan16_2ENG5_Guzansky.pdf.

¹⁰⁶Tertrais, "Drawing Red Lines Right," 15.

¹⁰⁷Barry Wolf, "When the Weak Attack the Strong: Failure of Deterrence," *Rand Corporation* (Santa Monica, CA: 1991), 5, <https://www.rand.org/content/dam/rand/pubs/notes/2005/N3261.pdf>.

1. The Motive of an Aggressor

An aggressor will attack a defender when an aggressor has a strong motive for provocation. Wolf proposes three situations when an aggressor provokes a defender based on high motivation: high motivation generally, psychopathological leadership, and crazy state culture.¹⁰⁸ However, in Wolf's rendering, psychopathological leadership and crazy state culture are associated with nuclear deterrence and an aggressor using nuclear weapons as the last resort. These motivations, however, cannot apply to conventional deterrence, because an aggressor is never facing apocalyptic consequences in low intensity conflict. Therefore, this thesis focuses on high motivation in general.

If the leader of an aggressor state were pressed by internal or external factors, he would have strong motives for provocation. Even if he knew that military losses would be greater than the profit, he might undertake provocation. According to Wolf, "The weaker state struck because conditions had become unbearable, a threat to the country's existence was perceived, or very substantial political advantage was expected to derive from the attack."¹⁰⁹ A defender may not anticipate this situation since a defender cannot calculate an aggressor's loss and profit exactly due to limited intelligence of an aggressor. For instance, in the case of North Korea, which is an extremely closed country, the ROK struggles to obtain sufficient intelligence of North Korea. Moreover, the pressures motivating an aggressor are caused by various factors. Economic crisis, domestic political conflict, and the deterioration of an international situation may threaten the regime of an aggressor, driving the leader of aggressor state to consider a drastic solution to overcome these pressures. In a crisis, provocation can serve to deflect people's attention from internal to external matters and concentrate all national efforts. Thus, internal and external pressures are high motivation for provocation.

2. Misperception of an Aggressor

The past actions theory or the current calculus theory cannot perfectly explain the reasons for the failure of conventional deterrence. An aggressor states sometimes is

¹⁰⁸Ibid., 6–8.

¹⁰⁹Ibid., 6.

swayed by its belief about the situation, not rational calculation. For this reason, provocations have occurred. Wolf identifies three conditions in which an aggressor practices provocation resulting from misperception: “(1) The Weaker Country Perceives a Vulnerability That Does Not Exist, (2) The Weak State Expects No Retaliation from the Strong State, (3) A State Counting on Allies Attacks a Substantially Stronger State or Its Ally.”¹¹⁰ The following discussion amends Wolf’s framework to apply to modern conventional deterrence, based on its different environment.

a. *The Weaker Country Perceives a Vulnerability that Does not Exist*

When an aggressor’s military power is largely overrated compared with defender’s military power, an aggressor perceives a vulnerability that is not really there.¹¹¹ There are two cases in which an aggressor may believe a false vulnerability of a defender. The first case is that an aggressor has not had any opportunity to check the defender’s capability. Thus, an aggressor state may overestimate its own capability. Specifically, North Korea may be overconfident of its military capability. It seems the strength of the Korean People’s Army (KPA) is greater than that of the ROK in a simple comparison of the number of troops.¹¹² In order to estimate military capability, however, a state should consider diverse and sophisticated elements, including alliance, technology, and fighting spirit. It is hard to know the exact strength of military capability before fighting directly. North Korea had not fought with the ROK on land such as in an artillery duel. Therefore, the North Korean military could have had the misperception of a false vulnerability.

The other case of a false vulnerability is a type of propaganda. If the leadership of an aggressor state has strong reasons for provocation, an aggressor’s leadership may persuade and encourage the military for victory. In order to stir up military passion, the leadership of an aggressor state must show its military strength and a defender’s vulnerability regardless of whether these perceptions are true.

¹¹⁰Ibid., 8–11.

¹¹¹Ibid., 8.

¹¹²Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper* (Seoul: March 31, 2011), 340.

b. The Weak State Expects No Retaliation from the Strong State

A defender may have strong credibility and capability to deter provocation; but if an aggressor believes that a defender will not retaliate against sudden attack, deterrence may still fail. Wolf categorizes this situation according to two types of cases: “(1) The Substantially Stronger State is Itself Attacked, and (2) Another Nation is Attacked and the Much Stronger State Intervenes.”¹¹³ This perspective seems to apply to North Korean provocation against the ROK-U.S. alliance, which has more powerful military capability. But this aggressor’s viewpoint could be a misperception associated with the past actions theory of credibility. If a defender or its ally did not counterattack in the past, an aggressor might believe that a defender will not retaliate this time, too; because an aggressor learns from the past actions of a defender. On the other hand, even if a defender showed the credibility of its intent to respond to an aggressor through past actions or its capability, an aggressor may still question the credibility of the defender due to various circumstances. Misperception is the egocentric driver of an aggressor for calculating provocation. Thus, even the requirements for conventional deterrence cannot prevent provocation, when an aggressor is guided by misperception.

c. A State Counting on Allies Attacks a Substantially Stronger State or Its Ally

If an aggressor thinks it can count on military support from its allies, an aggressor might misperceive the prospects of provocation. This situation is related with escalation of crisis. Conventional deterrence inevitably involves the problem of escalation of crisis. The escalation of crisis can mean expanding the scale of conventional conflict. If an aggressor believes that a defender might be worried about those escalations, an aggressor may initiate provocation. Wolf gives such an example:

A perfect historical example of a weak state counting on its own allies attacking a strong state or that state’s ally is the attack upon the Swiss town of Solothurn by the Count of Kiburg-Burgdorf in 1383. The Count, who was deeply in debt, hoped that if he captured the prosperous town, his overlord and allies would aid him against the powerful Swiss

¹¹³Wolf, “When the Weak Attack the Strong: Failure of Deterrence,” 9–10.

confederation, which could be expected to attempt to recapture the town. As it turned out, the Count's gamble failed.¹¹⁴

In the same context, North Korea could also use the card of low intensity provocation because North Korea might strongly have faith in Chinese military support based on historical lessons. However, in the dynamics of international relations, China may change its posture and act in its own interests in the future. That is the reason why an aggressor mistakenly counting on allies would be a serious misperception.

3. Vulnerable Defender

The last situation is one in which an aggressor state may attack when it finds out the weak points of a defender.¹¹⁵ This situation is connected with the defender's capability. As previously mentioned, there are two types of capability, denial capability and punishment capability. If an aggressor detected a defender's weak points, it might perceive that the defender does not have denial capability. Under these conditions, deterrence hinges on punishment capability.

D. CRITERIA FOR ASSESSING CONVENTIONAL DETERRENCE OF LIP

This thesis so far has explained what elements should be considered to establish conventional deterrence. In order to deter, a defender should retain two requirements, capability and credibility. Those two requirements, however, have various types of subclassifications, and each subclassification directly or indirectly affects the success of conventional deterrence. Therefore, in order to achieve conventional deterrence, a defender state should consider diverse elements of its capability and credibility. Moreover, a defender should also consider that an aggressor may provoke for reasons outside the defender's control, based on the aggressor's own situations. Therefore, it is necessary to deal with all considerations of conventional deterrence at once.

To consider all elements of conventional deterrence comprehensively, this chapter concludes with a table presenting conventional deterrence criteria that can be applied for

¹¹⁴Ibid., 10

¹¹⁵Ibid., 11.

analyzing LIP. The table includes all elements of conventional deterrence success or failure discussed in the preceding chapter. Although the table is based on the analysis of requirements for conventional deterrence generally, the criteria can be used to evaluate the prospect for successful deterrence of LIP.

To determine which elements may account for conventional deterrence failure, the author also applies the table to representative cases of North Korean LIP. By applying the table to the cases, then, we can find the pattern of North Korean LIP and the weak point of the ROK for conventional deterrence.

Table 3 summarizes the criteria for the analysis of requirements for conventional deterrence discussed previously:

Table 3. Conventional Deterrence Failure Analysis Matrix

Criterion		Index of LIP	
Capability	(1) Denial Capability		Sum/2
	(2) Punishment Capability		
Credibility	(3) Geography		Sum/8
	(4) Timing		
	(5) Similarity of issues		
	(6) Similarity of stakes		
	(7) Same countries		
	(8) Own leaders remain		
	(9) Adversaries' leaders remain		
	(10) Volatility of reputation		
Communication	(11) Warning with Demonstration		Sum/2
	(12) Strategic vagueness		
Aggressor's situation	(13) Motives		Sum/3
	(14) Misperception		
	(15) Vulnerable defender		
Total Sum			4.00
※ Note: The '0' index of deterrence means to keep the status quo, conventional deterrence. The '1' index of deterrence means to set the condition of LIP. Therefore, there is a higher possibility of LIP when the sum is a greater number.			

The following chapter provides a detailed case study of the North Korean bombardment of Yeonpyeong in 2010. This incident presents a recent critical case of LIP. The narrative is organized around the criteria presented in the preceding table, and provides a coding for the disposition of each criterion in this case. Specifically, an element that contributes to keeping conventional deterrence is coded “0.” An element that contributes to setting the conditions for LIP and accounting for deterrence failure is coded “1.” To provide equal weighting of the four major categories, the evaluation of each specific element is averaged within the category. The sum of those averaged figures provides a general index of LIP, ranging from “0” to “4,” with a finding of “4” signifying the highest possibility of LIP.

III. THE CASE STUDY OF THE BOMBARDMENT OF YEONPYEONG IN 2010

The preceding chapter examined which requirements determine success or failure in conventional deterrence. In 2010, the ROK-U.S. alliance was the defender who failed to deter North Korean LIP, and North Korea was an aggressor who provoked the ROK. Which requirements played important roles for the failure of conventional deterrence? In other words, why did the ROK-U.S. alliance fail to deter North Korean LIP, or why did North Korea feel free to bombard Yeonpyeong in 2010? This chapter finds the answers through applying the requirements for conventional deterrence to the bombardment of Yeonpyeong in 2010. To develop the answer, this chapter first reviews what happened in Yeonpyeong in 2010. Then the chapter applies the requirements for conventional deterrence presented in the table at the conclusion of Chapter II to the bombardment of Yeonpyeong. Through this application, it is possible to better explain why the ROK-U.S. alliance failed to deter North Korean LIP.

A. OVERVIEW

North Korea's military, the KPA, opened fire on Yeopyeong Island on November 23, 2010. This was the first shelling by North Korea on the territory of the ROK since the signing of the Korea War Armistice Agreement on July 27, 1953. The Defense White Paper of the ROK simply explained the outline of the artillery firing at Yeonpyeong Island as follows:

Around 14:34, on November 23, 2010, the North's military (Korean People's Army: KPA) fired 170 artillery shots at *Yeonpyeong* Island, South Korea. In response to this attack, the *Yeonpyeong* unit of the ROK Marine Corps immediately returned fire against the North using K-9 self-propelled artillery. Such illegitimate and inhumane provocation by the North, which was aimed at a civilian residential area as well as the ROK marine base, resulted in the deaths of two civilians and two ROK marines and many other civilians and marines being severely or slightly injured.¹¹⁶

¹¹⁶Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper* (Seoul: March 31, 2011), 335.

Figure 2. The Map of Yeonpyeong Island and Northern Limit Line (NLL).¹¹⁷



The unprecedented situation was moving direly. The KPA continued the shelling of Yeonpyeong for about one hour. The sequence of the bombardment is described in the timeline shown in Table 4.

¹¹⁷Source: Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper* (Seoul: March 31, 2011): 335, [file:///C:/Users/jlee2.ERN.016/Downloads/South+Korea+2010_eng-1%20\(1\).pdf](file:///C:/Users/jlee2.ERN.016/Downloads/South+Korea+2010_eng-1%20(1).pdf).

Table 4. Description of the Bombardment of Yeonpyeong in a Time Sequence.¹¹⁸

Time Sequence	The Details of the Incident
10:15 ~ 14:30	The Yeonpyeong unit carried out a regular maritime shooting training exercise in the ROK Maritime Firing Zone, south of the NLL.
14:34 ~ 14:46	The KPA indiscriminately fired multiple rocket launchers (MRL) located on the Gaemori coast and its coastal artillery guns on Mudo (Island), North Korea, at the ROK marine base (Yeonpyeong unit) and civilian residences. Sixty out of around 150 shots from the MRL and the coastal artillery launcher bombarded the ROK base and civilian residences on Yeonpyeong Island. The other 90 shots fell into the sea.
14:47 ~ 15:15	After issuing a warning to the North twice, the Yeonpyeong unit responded to this attack by firing 50 rounds of its K-9 self-propelled artillery at the North's coastal artillery base.
14:50	The ROK Air Force (ROKAF) launched F-15K and KF-16 aircraft in preparation both to conduct retaliatory strikes against KPA positions and engage the Korean People's Air Force (KPAF) Mig-23s should they undertake hostile actions.
15:12 ~ 15:29	The KPA carried out a second attack—this time on the Command Post of the Yeonpyeong unit and the ROK radar base—by firing 20 rounds from its MRLs and coastal artillery.
15:25 ~ 15:41	In response to the North's second attack, the Yeonpyeong unit responded by firing 30 rounds from its K-9 self-propelled artillery at the North's coastal artillery position on the Gamori coast.

In the end, two marines and two civilians of the ROK were killed, and 18 people were wounded by the shelling.¹¹⁹ Moreover, the total of 133 building, power station, and communication facilities were damaged. Wildfire occurred at ten areas.¹²⁰ On the other hand, it was hard to know that how many casualties and damage to the KPA resulted

¹¹⁸Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper* (Seoul: March 31, 2011): 335–36; and Joseph S. Bermudez Jr., 'The *Yonpyong-do* Incident, November 23, 2010,' 38 North Special Report 11–1 (January 11, 2011): 7.

¹¹⁹Mark McDonald, "'Crisis Status' in South Korea after North Shells Island," *New York Times*, November 23, 2010, http://www.nytimes.com/2010/11/24/world/asia/24korea.html?pagewanted=all&_r=0.

¹²⁰Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper* (Seoul: March 31, 2011), 336.

from the counterattack of the ROK marines. According to Joseph S. Bermudez Jr., however, “A ROK Joint Chiefs of Staff spokesman, referring to the Mu-do strike, stated that satellite images ‘... show our shells landed on a cluster of barracks in North Korea, so we presume there have been many casualties and considerable property damage.’”¹²¹

Figure 3. North Korean MRLs, M-1992 (Left) and M-1993 (Right).¹²²



Figure 4. K-9 Self-Propelled Artillery of the ROK Marines on Yeonpyeong Island.¹²³



One of the reasons for the bombardment of Yeonpyeong presented by North Korea was retaliation for the *Hoguk* exercise. According to McDonald, “The attack on Yeonpyeong came as 70,000 South Korean troops were beginning an annual nationwide

¹²¹Bermudez, “The Yonpyong-do Incident, November 23, 2010,” 7.

¹²²*Ibid.*, 5.

¹²³Ministry of National Defense of the Republic of Korea, *2010 Defense White Paper*, 336.

military drill called Safeguarding the Nation. The exercise has been sharply criticized by Pyongyang as ‘simulating an invasion of the North’ and ‘a means to provoke a war.’”¹²⁴

The *Hoguk* exercise, however, had been conducted annually since 1996.¹²⁵ Moreover, North Korea argued that the other reason for the bombardment was that “the ROK recklessly fired into our sea area.”¹²⁶ This argument was related to North Korea’s claim of the so-called “*Chosun* West Sea Military Demarcation Line” in 1999.¹²⁷ The North Korean argument was not accepted by either the ROK or the United Nations Command (UNC). According to Moo Bong Ryoo, “The UNC side stated that the NLL issue was nonnegotiable, because the demarcation line had been recognized as the de facto maritime border for 46 years by both Koreas.”¹²⁸ North Korea did not have any legal and diplomatic foundation for supporting their argument.

Therefore, the argument of North Korea was a pretext, hiding some other reasons for the bombardment. This leaves the question of why the ROK-U.S. alliance failed to deter the bombardment. In order to find out the reasons, this chapter applies the requirements for conventional deterrence to the LIP.

¹²⁴McDonald, “‘Crisis Status.’”

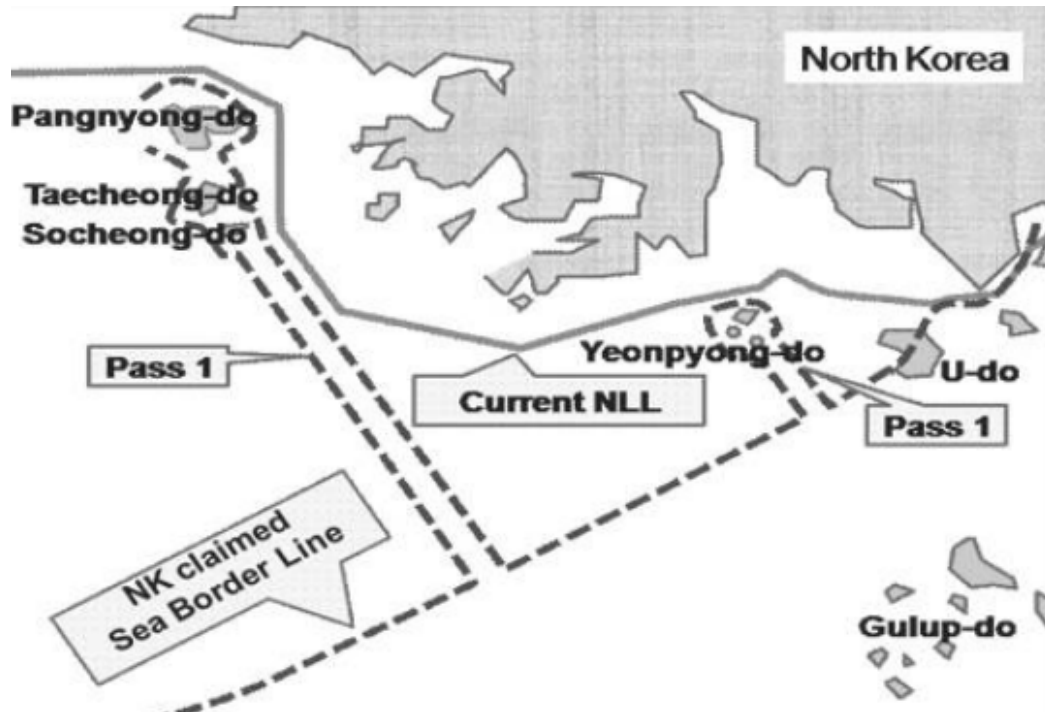
¹²⁵Bermudez, “The Yonpyong-do Incident,” 4.

¹²⁶McDonald, “‘Crisis Status.’”

¹²⁷Moo Bong Ryoo, “The Korean Armistice and the Islands,” *Strategy Research Project* (Carlisle, PA: U.S. Army War College: November 3, 2011): 11, [file:///C:/Users/jlee2.ERN.016/Downloads/ADA500904%20\(2\).pdf](file:///C:/Users/jlee2.ERN.016/Downloads/ADA500904%20(2).pdf).

¹²⁸*Ibid.*, 10.

Figure 5. Current NLL and Democratic People's Republic of Korea (DPRK) Claimed Sea Borderline.¹²⁹



B. ASSESSMENT OF THE FAILURE OF CONVENTIONAL DETERRENCE

The ROK-U.S. alliance failed to deter North Korean LIP at Yeonpyeong in 2010. Why could the ROK-U.S. alliance not prevent the subjective consequence? This section analyzes the reasons for the conventional deterrence failure in this case by applying each requirement for conventional deterrence to the bombardment of Yeonpyeong. Then, this chapter draws lessons from the result of this analysis.

1. Capability

The ROK-U.S. alliance was assessed that it had strong punishment capability but did not have denial capability at Yeonpyeong Island in 2010. This sector minutely examines the capabilities of the ROK-U.S. alliance at Yeonpyeong Island in 2010.

¹²⁹Ibid., 11.

a. Denial Capability

As previously mentioned, the ROK-U.S. alliance should have denial capability to prevent North Korean LIP. Denial capability means the ability to deny the attack of an aggressor with military balance, defensive capability, and offensive capability. The moment of demonstrating denial capability is from just beginning of the LIP to just after the LIP.

Then, what was the level of the denial capability of the ROK-U.S. alliance at the bombardment of Yeonpyeong in 2010? In this section, this thesis assesses the level of the denial capability of the ROK-U.S. alliance at the bombardment of Yeonpyeong in 2010 through distinguishing into three categories, which are military balance, defensive capability, and offensive capability.

(1) Military Balance

The ROK-U.S. alliance did not have enough military forces for military balance at Yeonpyeong Island. The most significant reason for military imbalance was that the ROK military ignored the deployment of North Korean military forces. Such a military balance cannot be established immediately. Particularly, ground forces need more time than other forces such as navy or air force.

Also, it was quite clear that the ROK-U.S. alliance did not share intelligence sufficiently and did not cooperate efficiently as regards the analysis of intelligence. Because when the ROK military ignored the intelligence about North Korean ground forces deployment, there was not any warning or advice from U.S. military. According to *Dong-A Ilbo*, “Though the North deployed forward 122-millimeter multiple rocket launchers at a cannon base in Gaemeori in Hwanghae Province two days before and on the day of the Yeonpyeong attack, the South failed to detect the situation.”¹³⁰ The KPA forward deployed the 122 mm MRL battalion to the south of the village of Kaungol on Kangnyong-bando¹³¹ as follows:

¹³⁰“Failure of Intelligence and Vigilance,” *Dong-A Ilbo*, December 3, 2010, <http://english.donga.com/List/3/all/26/266393/1>.

¹³¹Bermudez , “The Yonpyong-do Incident,” 4.

Figure 6. The Deployment of North Korean Artillery.¹³²



As a result, when North Korea fired artillery from the 122 mm MRL and 76.2 mm guns, the ROK military counterattacked with only four of six 155 mm K-9 self-propelled howitzers; because the AN/TPQ-37 Fire Finder counter-battery radar of K-9 self-propelled howitzers had been broken by North Korean shelling.¹³³ Since the ROK military ignored the intelligence of deployment of 122 mm MRL, the ROK military did

¹³²Ibid., 7.

¹³³Ibid., 6.

not prepare sufficient ground forces. Only four 155 mm K-9 self-propelled howitzers, however, were ready for combat against North Korean LIP. The KPA might have calculated that their ground forces were sufficiently bigger than the ground forces of the ROK. Thus, this military imbalance was a contributing factor for North Korean LIP.

(2) Defensive Capability

The ROK military did not possess sufficient defensive capability at Yeonpyeong Island against North Korean shelling. The Yeonpyeong Island is located 12 km (6.5 nm) south of the North Korean coast, and it is home to 1,780 civilians.¹³⁴ So, Yeonpyeong Island has been vulnerable to any type of North Korean attack such as shelling or an amphibious landing operation by the KPA. Thus, the ROK military deploys a Marine unit of approximately 1,000 troops at Yeonpyeong to protect the island against the attack by the KPA.¹³⁵ Bermudez introduces details about the Marine unit:

The unit is augmented by various intelligence components and two artillery batteries. The first artillery battery is equipped with six 105 mm towed howitzers; the second with six 155 mm K-9 self-propelled howitzers and a number of K-10 armored ammunition resupply vehicles. Over the years the island has been fortified with numerous underground bunkers, hardened artillery sites, beach defenses, POL storage facilities, three helicopter pads, C4ISR facilities, fortified fighting positions and a number of other military related facilities.¹³⁶

The ROK Marine unit seemed to be a well-prepared military unit against attack by the KPA. The KPA, however, attacked on weak points at a vulnerable time. First, the KPA delivered an attack on soft targets, civilians' facilities. Even though the Marine units were fortified with diverse methods, civilian facilities were vulnerable to shelling by the KPA. Christine Kim demonstrates the damage of Yeonpyeong Island as shown in Figure 7.

¹³⁴Ibid., 3

¹³⁵"Seoul to Bolster Marine Corps as Elite Force," *Korea Herald*, December 3, 2010, <http://www.koreaherald.com/view.php?ud=20101203000674>.

¹³⁶Bermudez, "The Yonpyong-do Incident," 3.

Figure 7. Damage on Yeonpyeong Island.¹³⁷



Moreover, even though K-9 self-propelled howitzers might have been protected by a hardened artillery site, the K-9s were exposed to the shelling of the KPA, because the K-9s were “still positioned to the southwest for the earlier live firing exercise,” claims Bermudez.¹³⁸ This damage was also related to the disregard for the intelligence about the deployment of the KPA. The ROK military could not efficiently defend against the shelling of the KPA and could not sufficiently counterattack against the shelling since the KPA attacked on weak points at a vulnerable time. If the ROK Marine artillery would

¹³⁷Source: Christine Kim, “South Thwarts even Bigger Attack,” *Korea JoongAng Daily*, November 25, 2010, <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2928852>.

¹³⁸*Ibid.*, 6.

have been intact after the shelling of the KPA and might have immediately counterattacked the original point of North Korean shelling, the ROK military could have achieved conventional deterrence.

(3) Offensive Capability

From the perspective of a defender, if the ROK military might have attacked the original point of shelling when North Korea opened shelling on Yeonpyeong Island, the ROK military would have achieved conventional deterrence by impeding the aimed shelling of the KPA. North Korea might not have achieved its original goal of the shelling due to the strong resistance of the ROK military. But, the ROK Marine artillery failed to attack the original point of shelling because of the malfunction of AN/TPQ-37 Fire Finder counter-battery radar. So, the K-9 self-propelled howitzers could attack on the pre-planned targets, which were command posts and barracks on Mu-do, with only 50 rounds. After repairing the radar, 30 rounds of K-9 self-propelled howitzers were fired at the original point of shelling.¹³⁹

In a nutshell, the ROK military could not possess denial capability for conventional deterrence since they did not have military balance, defensive capability, and offensive capability. The noticeable fact was that the lack of denial capability came from a lack of intelligence that was provided before the incident.

b. Punishment Capability

As previously mentioned, punishment for provocation is a prerequisite for the conventional deterrence in the future. Punishment capability, however, has two considerations. The considerations are the promptness of counterattack and the proportion of firepower. These considerations are related with the escalation of crisis. If a defender delays the counterattack, an aggressor will also retaliate at a later time. Therefore, punishment should be practiced as soon as possible for conventional deterrence. In this sense, air power is the most appropriate method for punishment, “[b]ecause of its independence of surface limitation and its superior speed—superior to

¹³⁹Ibid.

any other known means of transportation— the airplane is the offensive weapon par excellence,” Giulio Douhet claims.¹⁴⁰ On the other hand, air power could cause the problem of disproportionate firepower because the firepower of aerial bombardment would be greater than ground artillery. If a defender were to retaliate with stronger air power, an aggressor might retaliate with much stronger weapons, causing escalation of the crisis. This is the reason why a decision maker avoids using air power. Nevertheless air power is the most effective method for punishment.

The ROK military had sufficient punishment capability. At 14:50 hours, F-15K and KF-16 jet fighters made a sally for retaliation against the shelling of the KPA and for engaging the KPAF MiG-23s.¹⁴¹ Since the ROK military prepared F-15K and KF-16 jet fighters in 16 minutes, it is possible to assess that promptness was satisfied. On the other hand, the F-15K was loaded with an air-to-surface missile. This powerful weapon could cause controversy about the proportion of firepower. The air-to-surface missile of the F-15K, however, was a precision-guided munition (PGM). Even though the firepower of this weapon was also stronger than the shelling of the KPA, the F-15K could offer an attack focused only on the original point of the shelling of the KPA without collateral damage. Thus, it is also possible to assess that the proportion of firepower was satisfied. The leadership of the ROK hesitated to utilize air power in consideration of escalation of the crisis,¹⁴² but it is clear that the ROK military had sufficient punishment capability.

2. Credibility

If the ROK-U.S. alliance would have had better credibility for conventional deterrence against any North Korean LIP, the bombardment of Yeonpyeong might not have occurred. So, this section demonstrates the previous efforts of the ROK-U.S. alliance to establish credibility for deterring the bombardment of Yeonpyeong in 2010. But, the most difficult point related to the credibility of the ROK-U.S. alliance is how to

¹⁴⁰Giulio Douhet, *The Command of the Air* (Washington, DC: Office of Air Force History, 1983), 15.

¹⁴¹“S. Korea ‘Was Ready to Strike’ North During Yeonpyeong Attack,” *Chosun Ilbo*, December 13, 2010, http://english.chosun.com/site/data/html_dir/2010/12/13/2010121300397.html.

¹⁴²“Military under Fire for Response to N.Korean Attack,” *Chosun Ilbo*, November 25, 2010, http://english.chosun.com/site/data/html_dir/2010/11/25/2010112500536.html.

measure it. Since credibility is an abstract concept, as previously mentioned, it is hard to prove whether credibility was established or not. So, this section borrows Press's idea of past action theory, described in the previous chapter. Through a brief application of the past action theory, it will be possible to demonstrate whether the ROK-U.S. alliance had credibility to deter the bombardment of Yeonpyeong. Then, the next section discusses the issue of the communication of credibility.

a. Geography

The northwest islands (NWI) of the ROK, which are known as the UNC control island group, have been the most dangerous place between the ROK and North Korea. There were four major conflicts in the NWI before the bombardment of Yeonpyeong in 2010.¹⁴³ The conflicts included the first battle of Yeonpyeong in 1999, the second battle of Yeonpyeong in 2002, the battle of Daechong in 2009, and the sinking of ROK'S *Cheonan* in 2010.¹⁴⁴ If the ROK-U.S. alliance would have threatened North Korea from the first battle of Yeonpyeong, the later provocations might have been prevented. Since North Korea had calculated that the profits that came from provocations in the NWI were bigger than the losses, North Korea provoked again in the same region.

b. Timing

Just before the bombardment of Yeonpyeong in 2010, there was the sinking of ROKS *Cheonan* on March 26, 2010.¹⁴⁵ At that time, the government of the ROK was confused about how to deal with the incident. The ROK took a lot of time to demonstrate that the incident was a North Korean provocation. So, the ROK could not help missing the opportunity to administer military punishment, and the ROK did not have enough time to realign the military for efficient defense in the NWI. The poor posture of the

¹⁴³Kim, *Secret Files*, 6.

¹⁴⁴Fischer, "North Korean Provocative Actions," 18–24; Peter Foster, "North and South Korea Warships Exchange Fire," *Telegraph*, November 10, 2009, <http://www.telegraph.co.uk/news/worldnews/asia/southkorea/6536557/North-and-South-Korea-warships-exchange-fire.html>; "Report: South Korean Navy Ship sinks," *CNN*, March 26, 2010, <http://www.cnn.com/2010/WORLD/asiapcf/03/26/south.korea.ship.sinking/index.html>.

¹⁴⁵"North Korean Torpedo' Sank South's Navy Ship – Report," *BBC News*, May 20, 2010, <http://www.bbc.com/news/10129703>.

ROK might have diminished the ROK's conventional deterrence credibility in the eyes of North Korea. Therefore, North Korea conducted the bombardment of Yeonpyeong as a type of further provocation within a short period of time.

c. Similarity of Issues

The superficial reason for the bombardment of Yeonpyeong was the issue of the NLL. From 1973, North Korea has argued that the NLL is not an acceptable demarcation line. According to Jon M. Van Dyke, Mark J. Valencia, and Jenny Miller Garmendia, "North Korea announced that South Korean and [U.S.] vessels will be allowed to move to and from the five islands only through two designated sea routes and that any deviation from these routes would be regarded as a violation of North Korean territorial waters."¹⁴⁶ The ROK, however, has stated that "the NLL has been the practical sea demarcation line between South and North Korea for the past 49 years and was confirmed and validated by the 1992 South-North Basic Agreement."¹⁴⁷

These divergent opinions between the ROK and North Korea created the conditions for the four major conflicts in the NWI.¹⁴⁸ When North Korea made provocations in the NWI after the 1990s, Pyongyang always denied the validity of the NLL and violated the line.¹⁴⁹ The ROK-U.S. alliance, however, did not effectually resolve the issue of the NLL. This unsolved issue resulted from the posture of the United States about the NLL. Even though the United States condemned the North Korean provocations, the U.S. government did not clearly express its view about the issue of the

¹⁴⁶Jon M. Van Dyke, Mark J. Valencia, and Jenny Miller Garmendia, "The North/South Korea Boundary Dispute in the Yellow (West) Sea," *Marine Policy* 27, Issue 2 (March 2003): 145, http://ac.els-cdn.com/S0308597X0200088X/1-s2.0-S0308597X0200088X-main.pdf?_tid=fdac149e-a0ce-11e6-92b8-00000aacb362&acdnat=1478072336_5b5f327f0283ca4706c0dfed81e59f6d.

¹⁴⁷Ministry of National Defense, *The Republic of Korea Position Regarding the Northern Limit Line* (Seoul: Ministry of National Defense, August, 2002), 31, <https://assets.documentcloud.org/documents/1341897/rok-position-regarding-northern-limit-line-2002.pdf>.

¹⁴⁸"Northern Limit Line (NLL) West Sea Naval Engagements," *GlobalSecurity.org*, accessed November 2, 2016, <http://www.globalsecurity.org/military/world/war/nll.htm>.

¹⁴⁹Fischer, "North Korean Provocative Actions," 19.

NLL.¹⁵⁰ Of course, there were various reasons for the United States to remain silent about the NLL; but if the United States had a strong willingness to resolve the issue of the NLL, North Korea may not have caused a provocation in a connection with the NLL. The issue of the NLL, however, ended in smoke after each provocation; North Korea could always assert that the reason for its provocation in the NWI was the NLL.

d. *Similarity of stakes*

North Korea had provoked in the vicinity of the NLL due to the similarity of the stakes. The bombardment of Yeonpyeong was an extension of these stakes. There were two similar stakes related to the NLL, economic profits and security issues. First, the issue of economic profits was related with the blue crab. The vicinity of the NLL was famous as a fertile fishing ground. In particular, fishermen could get a good blue crab catch in the vicinity of the NLL. Moreover, North Korean merchant vessels had to select a circuitous route for entering the West Sea, forcing them to spend more time and fuel.¹⁵¹ In a nutshell, the NLL was related to the North Korean economy.

Second, security was at stake for the NLL. The reason for North Korea not to accept the validity of the NLL as a line of demarcation was that the NLL was an important defense line for the capital of the ROK, Seoul. According to Terence Roehrig, “Moving the NLL south would allow North Korean warships to patrol closer to Seoul and the Han River estuary, which leads to the South Korean capital, and Incheon. This in turn reduces warning time for a DPRK attack and brings Pyongyang’s Special Forces, one of the strengths of its military, nearer to South Korean territory.”¹⁵² Therefore, the ROK would never grant a concession to North Korea regarding the NLL. On the other hand, North Korea could pursue a strategic security-related benefit through making noise

¹⁵⁰Daniel Ten Kate and Peter S. Green, “Holding Korea Line Seen against Law Still U.S. Policy,” Bloomberg Businessweek, December 17, 2010, <https://web.archive.org/web/20101218120740/http://www.businessweek.com/news/2010-12-17/holding-korea-line-seen-against-law-still-u-s-policy.html>.

¹⁵¹Terence Roehrig, “The Northern Limit Line: The Disputed Maritime Boundary between North and South Korea,” *NCNK Issue Brief* (September 30, 2011), http://www.ncnk.org/resources/publications/NCNK_Issue_Brief_NLL_September_2011.pdf.

¹⁵²Terrence Roehrig, “Korean Dispute over the Northern Limit Line: Security, Economics, or International Law?” *Maryland Series in Contemporary Asian Studies*, no. 3 (2008): 25, <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1193&context=mscas>.

regarding the issue of the NLL. As a result, North Korea continuously made provocations in the NWI for the stakes just mentioned.

e. Same Countries

The LIPs in the NWI were concerns between the ROK and North Korea. According to Press, “Action taken in a crisis between two countries affects these states’ credibility in future crises with each other, but not in future crises involving different countries.”¹⁵³ The bombardment of Yeonpyeong in 2010 was caused by the credibility that was formed by the past conflicts between the ROK and North Korea. To be specific, the previously mentioned four major conflicts in the NWI were inter-Korea issues. North Korea might intentionally exclude the United States. For instance, there was the annual *Hoguk* 2010 exercise from November 22 to November 30.¹⁵⁴ The United States had often participated in the *Hoguk* exercise, but the United States canceled its participation in the exercise because of concerns about neighboring countries’ sensitive reactions.¹⁵⁵ Therefore, North Korea might decide to make a provocation at Yeonpyeong Island on November 23, 2010 since North Korea could fight with only the ROK.

f. Defender’s Own Leaders Remain

The same leaders remaining in power affects credibility for conventional deterrence. According to Press, “Actions taken by a country affect its credibility as long as its senior political leaders remain in office; the effect on credibility disappears once the senior leaders leave office.”¹⁵⁶ The statement of Press is relevant when conventional deterrence has been successfully maintained. On the other hand, leaders remaining in power also affects credibility negatively in the case of failed conventional deterrence. The case of the bombardment of Yeonpyeong in 2010 explains the negative effect on credibility in the case of failed conventional deterrence. Even though there were many

¹⁵³Press, *Calculating Credibility*, 19–20.

¹⁵⁴Bermudez, “The Yonpyong-do Incident,” 3.

¹⁵⁵“Deciphering North Korea’s Provocations,” STRATFOR, November 24, 2010, https://www.stratfor.com/geopolitical-diary/deciphering-north-koreas-provocations?0=ip_login_no_cache%3Dc59f3aeaa34656e5a783c40f2d044494.

¹⁵⁶Press, *Calculating Credibility*, 20.

criticisms of the Minister of National Defense after the sinking of the ROKS *Cheonan* on March 26, 2010, President Lee Myung-bak remained in office, as did the Minister of National Defense, Kim Tae-young.¹⁵⁷ Therefore, North Korea might think that there would be no strong counteraction by the ROK military under the leadership of Kim Tae-young.

g. Aggressors' Leaders Remain

Similarly, when the same aggressors' leaders remain in office it affects the defender's credibility. If aggressors' leaders were changed after a provocation, a defender should prepare extra efforts for getting new credibility. On the contrary, if the same aggressors' leaders remained after a provocation, the same type of provocation or even a more advanced provocation might occur; since the leaders of the aggressors' side can reasonably expect the same level of credibility from a defender. The regime of Kim Jong Il (KJI) directly ordered the ROK's *Cheonan* sinking and the bombardment of Yeonpyeong. Victor Cha states that KJI directly gave the command to attack *Cheonan* warship.¹⁵⁸ Moreover, according to Stephen McDonnell, "[t]he country's leader Kim Jong-il visited the artillery base which attacked the South just hours before this week's shelling started. The report said he was accompanied by his son and heir Kim Jong-un. If true, it would suggest that orders for the artillery attack came right from the top."¹⁵⁹ Therefore, North Korea remained the same decision maker, KJI, from the past provocation of the bombardment of Yeonpyeong in 2010.

In addition, there were some noticeable changes in the leadership of the KPA before the ROKS *Cheonan* sinking. Before the incident, the KJI regime executed personnel transfers in the KPA. According to Bruce Bechtol, "Only weeks after the rhetoric began in January 2009, Gen. Kim Kyok-sik, formerly chief of the General Staff,

¹⁵⁷"N. Korea: Exercise Brings War 'Closer,'" *CNN*, November 26, 2010, <http://www.cnn.com/2010/WORLD/asiapcf/11/25/koreas.crisis/>.

¹⁵⁸Victor Cha, "The Sinking of the Cheonan," *CSIS*, April 22, 2010, <https://www.csis.org/analysis/sinking-cheonan>.

¹⁵⁹Stephen McDonnell, "North Korea Attack Linked to Leadership Succession," *ABC News*, November 25, 2010, <http://www.abc.net.au/news/2010-11-26/north-korea-attack-linked-to-leadership-succession/2352506>.

was named the new commander of IV Corps of the North Korean People's Army. The IV Corps borders the NLL. Kim Kyok-sik was well known as one of Kim Jong-il's most trusted generals."¹⁶⁰ Moreover, another important general changed his assignment after Gen. Kim Kyok-sik's change of position. General O Kuk-ryol changed to an important position that was related with LIP. According to Gause, "[t]he head of the Operations Department (which was then under the authority of the Korean Worker's Party), General O Kuk-ryol, was moved to a senior position on the National Defense Commission (NDC), the chief command and control organ of North Korea's armed force."¹⁶¹ After these two generals came to the forefront, the nature of North Korean provocation became more aggressive.¹⁶²

Therefore, North Korea might have provoked the bombardment of Yeonpyeong since there was a continuation of the aggressive leadership of the KPA from the *Cheonan* sinking. The same aggressive military leadership tested the credibility of the ROK-U.S. alliance in regard to what countermeasures they would take against North Korean LIP. The leadership of the KPA might have calculated that the profit of LIP would be bigger than the losses.

h. Volatility of Reputation

A continuative pattern of behavior affects credibility.¹⁶³ The indecisive attitude of the ROK-U.S. alliance against North Korean LIPs in the NWI affected the credibility of the ROK-U.S. alliance. Even though there were special characteristics of the situation that South and North Korea have confronted, the ROK-U.S. alliance did not practice any military action of revenge after the sinking of the ROKS *Cheonan*. Of course, there was a strong condemnation and warning by the ROK-U.S. alliance against North Korean LIP

¹⁶⁰Bruce Bechtol, *The Last Days of Kim Jong-il: The North Korean Threat in a Changing Era* (Washington, DC: Potomac Books, 2013), 60.

¹⁶¹Gause, "North Korea's Provocation and Escalation Calculus," 12.

¹⁶²*Ibid.*

¹⁶³Press, *Calculating Credibility*, 20.

after the *Cheonan* sinking.¹⁶⁴ The ROK-U.S. alliance, however, did not practice military retaliation.

There were some reasons why the ROK-U.S. alliance did not retaliate against the North Korean LIP. It took 56 days to demonstrate that the *Cheonan* sinking was caused by the North Korean.¹⁶⁵ Therefore, the ROK-U.S. alliance lost the opportunity to retaliate immediately because the ROK military had complicated rules of engagement (ROE).¹⁶⁶ The ROE of the ROK military was that the retaliation would be restrained by the principle of proportion and the principle of promptness.¹⁶⁷ This ROE was related with the escalation of crisis.¹⁶⁸ If the ROK military counterattacked against North Korean LIP, the KPA could retaliate with stronger power. These aggressive retaliations would go to extremes and eventually might escalate into a full-scale war. Thus, the ROK-U.S. alliance would have hesitated to retaliate against North Korean LIP, and North Korean leadership was assured that there would not be strong retaliation after provocation. In a nutshell, the credibility of the ROK-U.S. alliance was damaged by these past actions.

3. Communication

In order to establish strong credibility, the method of communication is also important. The ROK-U.S. alliance, however, did not have an effective method of communication before the bombardment of Yeonpyeong in 2010.

As previously mentioned, there are two ways of effective communication, the demonstration of capability and the red line. First, the demonstration of capability is

¹⁶⁴So-hyun Kim, "Navy Chief Vows Revenge for Cheonan," *Korea Herald*, April 30, 2010, <http://www.koreaherald.com/view.php?ud=20100429000710>.

¹⁶⁵Ministry of National Defense of the ROK, *Investigation Result on the Sinking of ROKS "Cheonan,"* (Seoul: Ministry of National Defense of the ROK, May 20, 2010), 1, http://news.bbc.co.uk/1/1/shared/bsp/hi/pdfs/20_05_10jigreport.pdf.

¹⁶⁶Martin Fackler and Mark McDonald, "South Korea Reassesses Its Defenses after Attack," *New York Times*, November 25, 2010, <http://www.nytimes.com/2010/11/26/world/asia/26korea.html>; Hwee-Rhak Park, "'Resolute Response' and 'Prevention of Escalation' Regarding North Korean Provocations: Appropriate Application of Self-defense and Rules of Engagement," *The Journal of Strategic Studies* (March 2012): 108, <http://www.dbpia.co.kr/Journal/ArticleDetail/NODE01876858>.

¹⁶⁷Hwee-Rhak Park, "'Resolute Response' and 'Prevention of Escalation' Regarding North Korean Provocations," 105.

¹⁶⁸*Ibid.*, 110.

related with military capability and military balance. The demonstration of capability means to show both defensive and offensive capabilities to North Korea. In the same context, the forward deployment of the 122 mm MRL battery of the KPA was a signal for communication by demonstration of the capability of the KPA. The problem, however, was that the ROK-U.S. alliance did not properly respond to the signal. If the ROK-U.S. alliance showed that sufficient military forces were deployed in the NWI before the bombardment of Yeonpyeong, North Korea might not have undertaken the LIP at Yeonpyeong Island.

Moreover, the ROK marine unit did not have sufficient defensive and offensive capability. The ROK marine unit exposed the location of the K-9 self-propelled howitzers due to a live-fire exercise for *Hoguk* Exercise.¹⁶⁹ The unit of the K-9 self-propelled howitzers did not have enough time to go back to shelter, and were targeted by the shelling of the KPA.¹⁷⁰ Even though the K-9 self-propelled howitzers were the best weapons to counterattack immediately, they were exposed to the shelling of the KPA and had lost defensive capability.

In addition, KPA shelling disabled the defective anti-artillery radar (AN/TPQ-37).¹⁷¹ Thus, the ROK Marines had difficulty detecting the original point of the shelling. Their counterattack just aimed at the pre-planned targets that were “the command post and barrack on Mu-do.”¹⁷² This countermeasure could not stop North Korean bombardment, and then, there was the second barrage of the KPA after the initial barrage. Moreover, even though the ROK had an air asset to attack the original point of the North Korean shelling, the ROK did not practice the air strike. According to Bechtol, “[t]hough South Korean F-15K strike fighters were scrambled in response to the attack, they took no action because the rules of engagement at the time called for strictly an equivalent

¹⁶⁹Sang-ho Song, “North Korea Fires Artillery into Sea near Western Border,” *Korea Herald*, November 23, 2010, <http://www.koreaherald.com/view.php?ud=20101123000840>.

¹⁷⁰Bermudez, “The Yonpyong-do Incident,” 6.

¹⁷¹Bechtol, *The Last Days of Kim Jong-il*, 61.

¹⁷²Bermudez, “The Yonpyong-do Incident,” 6.

response.”¹⁷³ Therefore, the ROK did not have effective offensive capability after losing the opportunity of counterattack at the beginning of the North Korean LIP.

Furthermore, the ROK-U.S. alliance did not have the red line for conventional deterrence at that time. As previously mentioned, the red line is a kind of warning against an aggressor’s provocative behavior. Even if a LIP had occurred in the past, a defender may have declared a red line for preventing provocation in the future. A red line is different from a condemnation. A red line must explain a certain standard for the pattern of behaviors to satisfy the requirements of future conventional deterrence.

The ROK-U.S. alliance, however, did not propose a red line for conventional deterrence after North Korean LIPs of the past. According to Kim, “There is not any type of red line that was declared by the ROK ministry of national defense, Chairman of the Joint of Staff, or the Navy Chief of Staff such as statements, command letters, and instructions for protecting the NLL before 1996.”¹⁷⁴ Moreover, while the ROK government and the U.S. government announced condemnation and various economic and diplomatic sanctions against North Korea after the sinking of the ROKS *Cheonan*, the ROK government did not propose any obvious military action plans for conventional deterrence.¹⁷⁵ Condemnation or rhetorical expressions cannot be a red line.

If it does not show concrete action plans, the ROK-U.S. alliance should at least propose a red line for conventional deterrence. For instance, the Ministry of National Defense of the ROK mentioned the original point of attack for the first time after the bombardment of Yeonpyeong in 2010. Kim Kwan-Jin who was the 43rd Minister of National Defense of the ROK, said that “[t]he military of the ROK will firmly punish North Korean LIPs through attacking the original point of provocation and supporting

¹⁷³Bechtol, *The Last Days of Kim Jong-il*, 81.

¹⁷⁴Kim, *Secret Files*, 25.

¹⁷⁵Mike Mount, “U.S., South Korea to Conduct Joint Military Exercises,” CNN, May 24, 2010, <http://edition.cnn.com/2010/WORLD/asiapcf/05/24/south.korea.naval.exercises/index.html?hpt=T1>.

facilities.”¹⁷⁶ The ROK-U.S. alliance did not have credibility for conventional deterrence before the bombardment of Yeonpyeong since the alliance did not propose a red line for conventional deterrence. In a nutshell, the ROK-U.S. alliance did not communicate its credibility effectively.

4. Nevertheless, Provocation

The bombardment of *Yeonpyeong* in 2010 might have been inevitable even if the ROK-U.S. alliance had capability and credibility for conventional deterrence. This is because North Korea had strong motives for LIP and also may have misperceived the situation, while it also recognized the weak points of the ROK military. Under these conditions, there was nothing to stop North Korea from LIP. So, this section examines three conditions for conventional deterrence failure, which are proposed by Wolf.

a. Motives

Even though North Korean misperceptions and the weak point of the ROK military contributed to North Korean LIP, North Korean motives for LIP were the most important reason for LIP. In other words, North Korea might have made a provocation even if the ROK-U.S. alliance had both of capability and credibility in 2010, because the KJI regime was pressed by internal and external factors. Particularly, the era from 2009 to 2012 was a significant time for North Korea. This was the time of the hereditary succession of power from KJI to Kim Jong Un (KJU).¹⁷⁷ Therefore, the internal factors of North Korea were strong motives for LIP. This section examines the internal factors by categorizing them into two situations, the political and economic situation.

¹⁷⁶National Assembly of the ROK, *The Minutes of National Defense Committee in the Inspections of Government Office* (Seoul: The Secretariat of the National Assembly, October 19, 2012), 32, 89, <http://likms.assembly.go.kr/record/mhs-40-010.do?classCode=2&daeNum=20&commCode=HA&outConn=Y#none>.

¹⁷⁷Charles Armstrong, “One-Family Rule: North Korea’s Hereditary Authoritarianism,” *World Politics Review*, February 18, 2014, <http://www.worldpoliticsreview.com/articles/13573/one-family-rule-north-korea-s-hereditary-authoritarianism>.

(1) Political Situation

The most important concern in North Korean politics was the power dynamic among the upper classes, which included KJI, a successor, the Secretariat Central, military leaders, cabinet members, and central power agencies. The time from 2008, which was the year that KJI recovered from his cerebral infarction, to 2010, which was the year of the ROKS *Cheonan* sinking and the bombardment of Yeonpyeong, was particularly significant. In this period, North Korea had three difficulties that included strained relations with the ROK, a worsening in relations with the United States, and deterioration of the internal economic condition. To overcome these difficulties, North Korea took a hard line on domestic and international situations. Moreover, in this period, KJI made a decision that the succession system was progressing effectively.

The hereditary succession of power from KJI to KJU started after the summer of 2008. According to Jae-Cheon Lim, “KJU reportedly became the successor to his father, KJI, in late 2008 or early 2009. North Korea made official the succession at the Third Party Conference in September 2010.”¹⁷⁸ To be specific, Kyu-Sub Chung said that “from 2008, there were some terms, which inferred the succession issue, such as ‘revolution succession to the third generation’ and ‘new generation’ on the official media of North Korea.”¹⁷⁹ This meant that the hereditary succession to KJU had begun through the idolization of KJU. According to Joon-Sam Lee, “From January 2009, there was a rumor that KJI designated KJU as his successor, and “*Balgyeolum* (step),” which was a song idolizing KJI, was also diffused.”¹⁸⁰ As Tania Branigan notes, “The anthem, titled ‘Onwards Toward the Final Victory,’ is part of a propaganda drive to build up the image of the ‘great successor.’ Radio and television are airing it several times a day and

¹⁷⁸Jae-Cheon Lim, “North Korea’s Hereditary Succession: Comparing Two Key Transitions in the DPRK,” *Asian Survey* 52, no. 3 (University of California Press, May/June 2012): 550, <http://www.jstor.org/stable/10.1525/as.2012.52.3.550>.

¹⁷⁹Kyu-Sub Chung, “Cheonan Warship Sinking and Kim Jong-il Regime,” *National Defense Research* 53, no. 3, trans. by the author (Seoul: National Defense Graduate School for National Security Affairs, 2010), 28–29.

¹⁸⁰Joon-Sam Lee, “North Korea Tries to Make Kim Jong Un’s Theme Song, *Balgyeolum*,” *Yonhap News*, trans. by the author, February 27, 2012, <http://www.yonhapnews.co.kr/politics/2012/02/23/0505000000AKR20120223099200014.HTML?source=rss>.

the score has been printed in the official newspaper *Rodong Sinmun*.”¹⁸¹ Dae-Sik Oh has also described some part of the hereditary succession to KJU through the idolization of KJU. He explains:

The term of Dang Jungang (Party Centre) reappeared on *Rodong Sinmun* in 2009; the Party Centre had been called KJI who was the successor of Kim Il Sung (KIS) in the 1970s. The North Korean government gave caring money to people after the currency reform in 2009 on KJU’s instructions. And in order to raise KJU’s charisma, the North Korean government manipulated his age to 30 in 2012, because that year was KJI’s 70th birthday and the 100th anniversary of the birth of KIS.¹⁸²

Finally, North Korea officially declared the hereditary succession from KJI to KJU on September 28, 2010. Hae-In Shin said that “[t]he promotion of KJU to the rank of general in the North’s Korean People’s Army was announced in time with the opening of the country’s largest political gathering in 30 years, during which the elder Kim was largely expected to make official his hereditary succession plans.”¹⁸³ Thus, it was necessary to achieve something to complete KJU’s idolization. As a result, North Korean LIP, the bombardment of Yeonpyeong in 2010, was a way of achieving the birth of new North Korean leadership.

Moreover, KJU had a weak foundation for the legitimacy of his power. Ho-Yeol Yoo said, “KJU was only 27 years old, and he only had the justification that was he was the grandson of KIS for a hereditary succession. Because of the weak foundation of his regime, there were many critical opinions about the establishment of a hereditary succession.”¹⁸⁴ Even though new military authorities who emerged after the representative gathering in September 2010 protected KJU, the other military authorities

¹⁸¹Tania Branigan, “North Korea’s Kim Jong-Un Gets New Official Theme Song,” *Guardian*, July 6, 2012, <https://www.theguardian.com/world/2012/jul/06/north-korea-kim-jung-un-song>.

¹⁸²Dae-Sik Oh, “Understanding North Korea’s Actions through Prospect Theory: The Cheon-Ahn Battleship Assault and Yeon-Pyeong Island Bombardment,” *Seoseok Collection of Social Scientific Writing* 5, no. 2, trans. by the author, (Gwangju: Chosun University Press, 2012), 8. http://www.riss.or.kr/search/detail/DetailView.do?p_mat_type=1a0202e37d52c72d&control_no=ee68aae99f3f92f0d18150b21a227875.

¹⁸³Hae-In Shin, “North Korea Officially Starts Succession,” *Korea Herald*, September 28, 2010, <http://www.koreaherald.com/view.php?ud=20100928000875>.

¹⁸⁴Ho-Yeol Yoo, “A preface: in 2010, New Year and New Morning,” *Unification Generation* no. 69, trans. by the author (2001): 1.

and others in the upper class were opposed to a hereditary succession. Sung-Wook Nam said, “In this situation, it was inevitable for KJU to provoke against South Korea for suppressing opposition forces in the early stages.”¹⁸⁵

In a nutshell, the North Korean regime put emphasis on establishing the hereditary succession from KJI to KJU in 2010. But, KJU was different from his father, KJI; KJU had not had enough time to burnish his image for having authority as a successor. Thus, he faced obstacles gaining the trust of the class with power and with the common people. So, the North Korean regime in 2010 might believe that LIP could be the way to overcome this political situation.

(2) Economic Situation

North Korea adopted the “survival strategy of 2005 model year.” Oh has explained the meaning of the survival strategy of 2005 model year as follows:

Economic reform was driven by the Cabinet from 2000 to 2004. This, however, was incapacitated by attacking of Korean Worker’s Party. Thus, economic policy was transformed to a ‘counter-reformative opening and expanding route,’ that included a restrained market, restrained economic activities by military unit, strengthened national economic plan, expanded special economic zone for the business of foreign currency earning, and expanded influx of aid.¹⁸⁶

The cooperation of the ROK would make or break this counter-reformative opening and expanding plan. Actually, the heyday of this plan was in October 2007. There, however, was an accident in which a North Korean soldier shot and killed a South Korean tourist who wandered into a restricted zone on July 11, 2008. So, North Korea could not expect any more cooperation from the ROK due to strained South-North relations. It was a danger signal for the plan of establishing hereditary succession and the long-term strategy for constructing a strong and prosperous country.

To overcome this crisis, the North Korean government got down to business with China when Wen Jiabao, who was the Premier of the People’s Republic of China, visited

¹⁸⁵Sung-Wook Nam, “In 2011, I Wish to Ride the Express to Korean Reunification,” *Unification Generation* no. 68, trans. by the author (2011): 4.

¹⁸⁶Oh, “Understanding North Korea’s Actions,” 9.

Pyeongyang in October 2009. According to Oh, “The North Korean government requested massive aid from the Chinese government, and he wanted China rather than the ROK to become a partner for a special economic zone for the business of foreign currency investment.”¹⁸⁷ Moreover, the North Korean government tightened up an already restrained market and restrained economic activities by military units. Finally, the North Korean government pushed ahead with currency reform, which was an extreme policy, on November 30, 2009. According to Scott Snyder, “North Korea’s objective in pursuing the revaluation, therefore, was aimed at curbing the markets and reinstituting state control over the markets and over public reliance on the state.”¹⁸⁸ It, however, failed to return to the planned economic system. Snyder has also explained the reason for that failure: “At the technical level, initial implementation of the currency revaluation was undermined by the inability of the state to have sufficient goods on hand to restore the public distribution system as a replacement to the market.”¹⁸⁹ As a result, the currency reform effort caused a sharp price rise, a rise in the exchange rate, and hyperinflation. The following is a table for the result of currency reform. Prices are expressed in North Korean won. According to Figure 8, even though North Korea announced that it would exchange new currency for old currency at the rate of 100:1, prices and exchange rates increased sharply after just two years.

¹⁸⁷Ibid.

¹⁸⁸Scott Snyder, “North Korea Currency Reform: What Happened and What Will Happen To Its Economy?” *The Asia Foundation* (2010), 2, <http://www.asiafoundation.org/resources/pdfs/SnyderDPRKCurren.pdf>.

¹⁸⁹Ibid.

Figure 8. North Korean Price Fluctuation by the Currency Reform Program in 2009.¹⁹⁰

Period	1 USD Exchange Rate			Rice Price		
	Pyongyang	Sinuiju	Hyesan	Pyongyang	Sinuiju	Hyesan
October, 2009 Before the Currency reform	3845	3840	3845	2200	2200	2300
November, 2009 Currency reform	134	130	133	55	53	60
November, 2010 After the Currency reform	1750	1800	1800	1250	1300	1350
November, 2011 After two years.	4500	4550	4600	3850	3900	4000

These economic policies were initiated to consolidate KJU's power by attempting to return to a planned economy. However, it ended in failure. This failure could fully amplify people's discontent about KJI's regime and the hereditary succession system to KJU.

In this difficult situation, the government of the ROK made a decision to discontinue almost all trade between South and North except the Gaeseong Industrial Complex, because the government of the ROK concluded that *Cheonan* warship was sunk by a North Korean torpedo fired by a midget submarine. With the failed currency reform policy, the decision of the ROK would have a ripple effect on the North Korean regime. Gang-Taek Lim showed empirical evidence that "North Korean foreign currency income would be decreased \$252,620,000 by stopping trade between the South and North. This evidence included presumed toll processing, income from carriage of goods, and ascending expense by prohibiting passage through Jeju Strait."¹⁹¹

Moreover, the international society reduced humanitarian aid to North Korea because North Korea intensified nuclear armament and provoked continually with nuclear and missile activities. Bo-Ra Jung reports that the "international society provided

¹⁹⁰Market Trends, *Daily NK*, accessed November 12, 2016, <http://www.dailynk.com/english/market.php>.

¹⁹¹Gang-Taek Lim, "A Ripple Effect on North Korean Economy by Stopping Trade between South and North," *Korea Institute for National Unification Online Series* 10–17, trans. the author, (Seoul: KINU, May 24, 2010), 2, <http://repo.kinu.or.kr/bitstream/2015.oak/1641/1/0001447348.pdf>.

support in the amount of \$20,600,000 to North Korea as humanitarian aid in 2010, but that was at a 35% level compared with \$58,750,000 in 2009.”¹⁹²

To resolve the economic problems caused by strained South-North relations and the sanctions of the international community, KJI visited China twice in May and August 2010. The main purposes of his visiting were to acquire massive aid to replace that lost from the ROK and to support the North Korean counter-reformative economy through investment in a special economic zone for the business of foreign currency investment. In fact, various trade agreements and memorandums of understanding, which spurred the development of the Rason Special Economic Zone, the development of Hwanggumpyong Island, and the joint development of underground resources, were concluded between China and North Korea. North Korea, however, has struggled in business ventures with China. Hyeong-Joong Park asserts that “[i]n spite of KJI visiting China twice, North Korean businesses with China did not look promising because China passed careful judgment about the capriciousness of North Korea and hidden dangers in the business with North Korea.”¹⁹³

Eventually, North Korea wanted to resolve the problem of regime instability and to achieve hereditary succession of KJU from KJI through the survival strategy of 2005 model year, which was the same as the counter-reformative opening and expanding plan, but North Korea’s regime was in an even deeper crisis due to the aforementioned factors: strained South-North relations, the failure of currency reform, and the slow progress of business with China. In short, North Korea had difficulty to inflow funds from outside parties, which were the ROK, China, and international community. The reasons for North Korean economic difficulties were the stopping of trade between South and North by North Korea’s sinking of the ROKS *Cheonan*, the decrease of international aid to North Korea, and China’s careful stand about supporting North Korea. Therefore, North Korea had to find another way to resolve these difficult situations. That solution was a LIP.

¹⁹²Bo-Ra Jung, “A Rapid Decrease of Humanitarian Aid to North Korea,” *Radio Free Asia*, December 27, 2010, trans. the author, http://www.rfa.org/korean/in_focus/nk_aid-12272010165214.html.

¹⁹³Hyeong-Joong Park, “Kim Jong Il’s Visit to China and the Crisis of Survival Strategy of ‘2005 Model Year,’” *Korea Institute for National Unification Online Series* 11–18, trans. the author, (Seoul: KINU, June 1, 2011), 3, <http://www.kinu.or.kr/2011/0531/co11-18.pdf>.

b. Misperception

North Korea might have made the decision to execute LIP out of a misperception. Even though North Korea is generally inferior in military power to the ROK,¹⁹⁴ the North Korean regime has argued that its military can overcome that inferiority by sheer willpower.¹⁹⁵ This argument was effective enough to persuade the KPA because the ROK and North Korea have not fought directly with military forces on land.¹⁹⁶ North Korea might think that the ROK military would not retaliate immediately by airpower due to the stipulations on proportion of firepower written in the Armistice Agreement, and the ROK would hesitate to retaliate against North Korean shelling due to the threat of nuclear weapons and the escalation of crisis.¹⁹⁷

North Korea might also have calculated that the United States would not engage in any retaliation because they made certain that the United States initiates military power with care. Therefore, North Korean leaders might have believed that they could take the advantageous position in later negotiation after the surprise attack.

c. Vulnerable Defender

The vulnerability of the ROK military has been mentioned several times. Once North Korea detected the weak point of the ROK military, the bombardment of Yeonpyeong in 2010 may have been inevitable. If North Korea had discovered the weak point of ROK military at another location, the name of the LIP incident might have been changed.

¹⁹⁴“Military Power Comparison Results for North Korea vs. South Korea,” *Global Firepower*, last updated January 21, 2016, <http://www.globalfirepower.com/countries-comparison-detail.asp?form=form&country1=north-korea&country2=south-korea&Submit=COMPARE>.

¹⁹⁵Suman Varandani, “Kim Jong Un Ready For War? North Korea Leader Inspects Military Readiness Amid Wife’s Disappearance Reports,” *International Business Times*, November 10, 2016, <http://www.ibtimes.com/kim-jong-un-ready-war-north-korea-leader-inspects-military-readiness-amid-wifes-2444478>.

¹⁹⁶“After North Korean Strike, South Korean Leader Threatens ‘Retaliation,’” *CNN*, November 24, 2010, <http://www.cnn.com/2010/WORLD/asiapcf/11/23/nkorea.skorea.military.fire/>.

¹⁹⁷Bruce W. Bennett, “Uncertainties in the North Korean Nuclear Threat,” *National Defense Research Institute* (Santa Monica, CA: RAND, 2010), viii, http://www.rand.org/content/dam/rand/pubs/documented_briefings/2010/RAND_DB589.pdf.

This vulnerability of the ROK military is related with the logic of conventional deterrence. Particularly, conventional aggression usually pursues “relatively quick, inexpensive victories.”¹⁹⁸ If the target is sturdier than what an aggressor expected, it will take more time and cost for the victory. Therefore, an aggressor seeks to detect the weak point of a defender as a prerequisite for LIP. In the same context, North Korea selected Yeonpyeong Island as the target of shelling because the island was the weak point of the ROK military, and North Korean leaders might have believed that they could achieve a quick victory.

C. OVERALL ANALYSIS

Provocation means a defender fails to have the requirements for conventional deterrence. In other words, the reasons for failure are the absence of requirements for success. Many events that happened at Yeonpyeong Island in 2010 conform to the elements of conventional deterrence discussed in Chapter II. Table 5 summarizes the preceding analysis of the Yeonpyeong Island LIP by utilizing the conventional deterrence matrix and coding method presented at the end of Chapter II.

¹⁹⁸Gerson, “Conventional Deterrence in the Second Nuclear Age,” 37.

Table 5. Application of Conventional Deterrence Requirements to the Bombardment of Yeonpyeong in 2010.

Criterion		Index of LIP	
Capability	(1) Denial Capability	1	0.5
	(2) Punishment Capability	0	
Credibility	(3) Geography	1	1
	(4) Timing	1	
	(5) Similarity of issues	1	
	(6) Similarity of stakes	1	
	(7) Same countries	1	
	(8) Own leaders remain	1	
	(9) Adversaries' leaders remain	1	
	(10) Volatility of reputation	1	
Communication	(11) Warning with Demonstration	1	1
	(12) Strategic vagueness	1	
Aggressor's situation	(13) Motives	1	1
	(14) Misperception	1	
	(15) Vulnerable defender	1	
Total Sum			3.5

The result of the application is noteworthy. Almost all the criteria were indicative of deterrence failure, and coded “1,” with the total sum of “3.5.” The result indicates that Yeonpyeong Island had very high possibility for LIP before the shelling by the KPA. Although the ROK-U.S. alliance should have considered various elements for conventional deterrence, the ROK-U.S. alliance did not take into account elements for conventional deterrence for the most part.

Why, then, was the ROK-U.S. alliance negligent in considering the elements for conventional deterrence? It is possible to find out the reasons for carelessness in the table. The punishment capability is the only element that contributes to keeping conventional deterrence and is coded “0.” This phenomenon means the ROK-U.S. alliance might have been complacent about its military power. The ROK leaders might have believed that

they had sufficient conventional power compared with North Korea, and the ROK also expected the United States would ensure the extended deterrence under the U.S. nuclear umbrella.¹⁹⁹ Even though the general military power of the ROK-U.S. alliance was bigger than North Korea's, the ROK-U.S. alliance might have overlooked detailed parts of conventional deterrence. That was a type of vanity. The result of vanity was that almost all criteria were coded "1," which points to a very high possibility of LIP, as was the case when the KPA fired artillery at Yeonpyeong Island. As a result, the ROK-U.S. alliance failed to deter North Korean LIP.

¹⁹⁹Richard C. Bush, "The U.S. Policy of Extended Deterrence in East Asia: History, Current Views, and Implications," *Foreign Policy* (Washington, DC: Brookings, February 2011): 8, https://www.brookings.edu/wp-content/uploads/2016/06/02_arms_control_bush.pdf.

IV. CONCLUSION

A. LESSONS

The bombardment of Yeonpyeong in 2010 was a pivotal incident for the national security of the ROK. Even though there had been numerous North Korean provocations, it was the first direct attack of the KPA on the territory of the ROK by artillery since the end of the Korean War. So, it provides the opportunity to consider conventional deterrence for the first time as a case of the failure of conventional deterrence. Since people can develop through failures, the ROK should extract some lessons from the bombardment of *Yeonpyeong* in 2010.

1. Credibility

This thesis argues that credibility is the most important requirement for conventional deterrence. If a defender state has established its capacity, capability, and willingness to retaliate, it has credibility for conventional deterrence, and an aggressor may hesitate to execute LIP. At least, an aggressor state is likely to calculate its potential losses and profits from any provocation with more sophistication. The ROK-U.S. alliance, however, did not have sufficient credibility to deter North Korean LIP.

First of all, the ROK lost credibility for conventional deterrence through its past actions. Credibility comes greatly from past actions. In other words, credibility can be called reputation. Conventional deterrence is the dynamic relationship between a defender's credibility and an aggressor's provocation. An aggressor continuously tests a defender's credibility and may be on the alert for an opportunity to initiate a provocation. If a defender does not take countermeasures properly against an aggressor's LIP, an aggressor may make even stronger provocations in the future. In the same context, since the ROK-U.S. alliance did not show its intention to retaliate to North Korea in the past, North Korea eventually shelled Yeonpyeong Island. If the ROK-U.S. alliance had established credibility through strong military punishment, the bombardment of Yeonpyeong might have been deterred by the credibility of the ROK-U.S. alliance.

Second, credibility can be formed when it is communicated effectively. Credibility does not come from a slogan, but from the visible demonstration of military power and practice. Credibility can be imprinted in the aggressor's awareness when a defender puts its commitment into practice. The ROK-U.S. alliance, however, did not demonstrate military power by practicing its commitment. On the other hand, to give a verbal warning can cause another problem. As previously mentioned, red lines encourage an aggressor's provocative behavior below the threshold. If a defender announces that there is the critical point that will trigger conventional deterrence, an aggressor may practice provocative behaviors below that point if it considers that LIP incurs tolerable losses.

But, surprisingly, the ROK-U.S. alliance did not have any red lines for conventional deterrence in the NWI until after the bombardment of Yeonpyeong in 2010. Of course, in response, there was condemnation, sanctions, and a word of warning by the governments of the ROK and the United States. Those responses consisted of general arguments or non-military action. Even though there is a dilemma of red lines, the ROK-U.S. alliance might have demonstrated a feasible action plan, not an abstract principle or condemnation. While the sinking of the ROKS *Cheonan* occurred in the same year, the ROK did not mention any type of red lines after that incident either. In a nutshell, the ROK-U.S. alliance did not have a sufficient method to communicate its capability, capacity, or willingness for conventional deterrence of these kinds of provocations.

2. Capability

Capability is also a significant requirement for conventional deterrence. Many observers believe that the ROK military failed to deter North Korean LIP because the ROK did not have "sufficient capability" at Yeonpyeong Island. In other words, provocation occurred because the military balance was broken. A defender can achieve conventional deterrence by military balance. As discussed in the prior chapter, however, military balance around Yeonpyeong Island was broken. The KPA forward deployed numerous 122 mm MRLs and "76.2 mm coastal defense batteries at Kaemori and on Mu-

do,”²⁰⁰ but the ROK Marines prepared only six K-9 self-propelled howitzers for the combat.

The important point, however, is why the imbalance of artillery occurred between the ROK Marines and the KPA. The answer is the ROK military ignored the warning by ROK intelligence.²⁰¹ Even though the ROK military already had the information of the movement of a KPA 122mm MRL battalion south, the ROK military did not practice any contingency plan. This disregard for intelligence may come from the inherent advantage of being an aggressor. An aggressor can select the time and place of a surprise attack. On the other hand, a defender has to consider all ways for preventing damage from any surprise attack of an aggressor. It is hard to know the exact time and location of a provocation. So, this disadvantage of a defender may cause the disregard of intelligence by a defender because there could be many repeated fallacies of intelligence, such as the Boy Who Cried Wolf. As a result, the military balance was broken at Yeonpyeong Island, and the bombardment occurred.

In order to overcome the disadvantage of a defender, a defender has to consider punishment capability. This concept is eventually related with credibility for conventional deterrence. Even though a defender cannot choose the time and location of a provocation, a defender can prevent a future provocation through strong punishment. If the ROK military had executed punishment against North Korean LIP in the past, it might have ultimately prevented the bombardment from occurring. The implementation of punishment capability, however, has two significant considerations, the rules of engagement and the escalation of crisis.

When the KPA opened artillery fire, the ROK Air Force launched F-15K and KF-16 for executing retaliation against and counteracting North Korean air power.²⁰² The pilot of the ROK air force, however, did not push the bomb button because of sophisticated rules of engagement.²⁰³ Even though the ROK military had punishment

²⁰⁰Bermudez, “The Yonpyong-do Incident,” 6.

²⁰¹Ibid., 4.

²⁰²Ibid., 7.

²⁰³Bechtol, *The Last Days of Kim Jong-il*, 84.

capability, they hesitated to use that capability because they were concerned about civilian casualties and escalating the crisis.²⁰⁴

The ROK leadership recognized that the hesitation to employ punishment capability would cause a damaged reputation. So, the ROK leaders changed their posture about the rules of engagement after the bombardment of Yeonpyeong. According to Bechtol, “Rules of engagement were adjusted to shift from a paradigm designed to prevent an escalation to a focus on effectively repulsing attacks.”²⁰⁵ In the same context, Kim Kwan-Jin, who was appointed the 43rd Ministry of National Defense of the ROK after the bombardment of Yeonpyeong, strongly called for immediate punishment.²⁰⁶ Kim stated, “Don’t ask whether to shoot or not. Shoot first and report later.”²⁰⁷

Furthermore, the bombardment of Yeonpyeong illustrates that the escalation of crisis is an inevitable issue related to conventional deterrence. All requirements for conventional deterrence must eventually be weighed against escalating the crisis. A defender’s leader cannot help considering the escalation of crisis in a crucial moment of conventional deterrence: to decide the intensity of punishment, to retaliate against LIP to preserve reputation, to propose red lines for effective communication of conventional deterrence, and so on. Clearly, a small incident may cause a major result, as in the “butterfly effect.” Moreover, as North Korea is an aggressor that has nuclear weapons, escalation would threaten ultimately use of nuclear weapons. Therefore, the ROK should prepare for an escalated crisis through efficient utilization of the ROK-U.S. alliance.

3. The ROK-U.S. Alliance

The ROK-U.S. alliance should be an agency of response to North Korean LIP. Conventional deterrence may escalate to total war or nuclear crisis. Then, the ROK, which does not have nuclear weapons, cannot help requesting U.S. support through the

²⁰⁴Ibid., 83.

²⁰⁵Ibid.

²⁰⁶Jon Rabirot and Yoo Kyong Chang, “South Korea Readying Forces to Respond to Future Attacks from North,” *Stars and Stripes*, July 5, 2011, <http://www.stripes.com/archive/archived-special-reports/crisis-in-korea/south-korea-readying-forces-to-respond-to-future-attacks-from-north-1.148368>.

²⁰⁷Ibid.

extended deterrence relationship. Among the alternative solutions for the escalation of crisis, the ROK-U.S. alliance is the most realistic solution for conventional deterrence.

North Korea has also recognized the importance of the ROK-U.S. alliance for conventional deterrence because North Korea did not provoke the United States after the Panmunjom axe murder incident. North Korea has only made provocations against the ROK.²⁰⁸ North Korean LIP aimed at the ROK suggests that North Korea also knows the escalation of crisis is inevitable. Therefore, North Korea probably wants to manage LIP for quick victory. If so, North Korea has recognized that the ROK-U.S. alliance will be an agency of conventional deterrence, and North Korea be cautious about provocation.

4. The Motives for North Korean LIP

The motives for provocation are as important as the requirements for conventional deterrence. Even though the ROK-U.S. alliance will prepare to prevent provocation with capability and credibility, North Korean LIP may occur anyway when North Korea has strong motives for provocation.

Yet, it is unnecessary to accept that LIP is unavoidable. Even if LIP were inevitable, a defender can minimize the shock of LIP through preparation of the requirements for conventional deterrence. Therefore, the first step in these preparations is to keep watch on an aggressor's changes, including political transformation and economic changes. Then, a defender may detect the internal motives for LIP. Moreover, the requirements for conventional deterrence will disrupt an aggressor's successful execution of LIP. Under the aggressor's strong motives for LIP, the requirements for conventional deterrence may not stop the LIP of an aggressor. Denial capability, however, can minimize the damage from LIP, and punishment capability would be important to prevent any further LIP.

B. PRESCRIPTION

This thesis suggests some prescriptions for preventing future North Korean LIP based on the lessons learned. Even though the prescriptions cannot resolve all North

²⁰⁸Fischer, "North Korean Provocative Actions," 4–33.

Korean LIP perfectly, they will be helpful to prohibit North Korean LIP and to bolster the reputation of the ROK-U.S. alliance for preventing North Korean LIP.

1. Credibility: Counter-Provocation Plan in 2013

This thesis argues that credible conventional deterrence is the most effective method to prevent North Korean LIP. Therefore, the ROK-U.S. alliance should try to obtain credibility for having effective conventional deterrence and a willingness to use it. While there are various ways to gain this credibility, this thesis suggests exploiting the red line for conventional deterrence. As previously mentioned, the ROK-U.S. alliance did not propose any red line after North Korean LIPs; the allies merely condemned North Korean provocative behaviors and practiced economic sanctions. These repeated situations would have provided the conditions for North Korean LIP since the ROK-U.S. alliance hesitated to use military force out of concern that such action would escalate the crisis. The ROK-U.S. alliance cannot obtain credibility for conventional deterrence this way. The alliance should show its strong credibility through proposing a red line to North Korea.

In the same context, the counter provocation plan in 2013 was a very meaningful attempt to show the credibility of the ROK-U.S. alliance. The concept of a counter provocation plan (CPP) was mentioned for the first time at the 42nd ROK-U.S. Security Consultative Meeting (SCM).²⁰⁹ The ROK-U.S. alliance had agreed to the comprehensive security of the ROK and mentioned the issue of total war against North Korea in the previous SCM.²¹⁰ The ROK-U.S. alliance, however, gave shape to the concept of a counter provocation plan and announced the CPP in the 45th SCM in 2013. According to the minutes of the 45th SCM, “The Minister and the Secretary praised the two militaries for completing the ‘ROK-U.S. Counter-Provocation Plan’ in March 2013,

²⁰⁹Ministry of National Defense of the Republic of Korea, *Joint Communique The 42nd ROK-U.S. Security Consultative Meeting* (Seoul: October 8, 2010), http://www.mnd.go.kr/user/boardList.action?command=view&page=1&boardId=I_43915&boardSeq=o_1130000000562&titleId=null&siteId=mnd&id=mnd_080000000000.

²¹⁰Ministry of National Defense of the Republic of Korea, *Joint Communique The 41st ROK-U.S. Security Consultative Meeting* (Seoul: October 22, 2009), http://www.mnd.go.kr/user/boardList.action?command=view&siteId=mnd&boardId=I_43915&page=1&boardSeq=o_1130000000478&search=&column=&categoryId=&categoryDepth=&id=mnd_080000000000&parent=.

which enables the two countries to respond jointly and effectively to North Korean provocations, and reaffirmed that the plan would be crucial in enabling the Alliance to respond firmly to any North Korean provocation.”²¹¹ The ROK-U.S. alliance thereby announced its commitment to act together substantively to counter North Korean LIP.

The details of the CPP were not revealed to the public and North Korea. This concealment of the CPP is a wise policy because the CPP is a way of establishing red lines. The ROK military just mentioned the existence of the CPP when North Korea shelled the southern of Military Demarcation Line (MDL) in 2015, and there was not any further provocation after the first shelling. According to CNN, South Korean Defense Minister Han Min-koo stated, “‘If North Korea continues on provoking, our military—as we have already warned—will respond sternly, and end the evil provocations of North Korea,’ ... adding the country is working closely with the United States.”²¹² Moreover, the spokesman for the Ministry of National Defense of the ROK said that the CPP has been operating since just after the North Korean shelling.²¹³

This encounter makes it possible to observe that the ROK military warned North Korea with a red line. In order to display the power of the red line, the red line should be implied rather than specified. This quality is called “the fifty shades of red.” Obviously, there is a plan to retaliate against North Korean LIP, but the details of the plan are purposely vague. North Korea can know there is a red line, but cannot know what specific LIP might cross that line. Therefore, North Korea cannot help calculating intricately the result of provocation before or during the execution of LIP. As a result, the ROK-U.S. alliance could have credibility for conventional deterrence.

The CPP, however, has a limitation. Even though the CPP is one of the effective red lines, the CPP will be tested continuously by North Korea. If there were not any

²¹¹Ministry of National Defense of the Republic of Korea, *Joint Communique The 45th ROK-U.S. Security Consultative Meeting* (Seoul: October 2, 2013), http://www.mnd.go.kr/user/boardList.action?command=view&boardId=I_43915&boardSeq=I_581318&id=mnd_080000000000.

²¹²Jethro Mullen, Kathy Novak, and Greg Botelho, “North Korea Issues Military Threats as Tensions with South Korea Rise,” *CNN*, August 21, 2015, <http://www.cnn.com/2015/08/21/asia/koreas-tensions/>.

²¹³Young-jae Lee, “ROK-US Alliance Military System Is Operating after North Korean Shelling,” *Yonhap News Agency*, August 21, 2015, <http://www.yonhapnews.co.kr/bulletin/2015/08/21/0200000000AKR20150821040200043.HTML>.

substantial practice for verifying the CPP, North Korea would not believe the efficacy of the CPP. Eventually, there should be a punishment against any North Korean LIP. The punishment will extend the efficacy of the CPP and will be helpful to increase the credibility of conventional deterrence. In the same context, the counteraction of the ROK against North Korean shelling in 2015 was the proper confrontation to verify the CPP and maintain credibility for conventional deterrence.²¹⁴

2. Capability

To deter North Korean LIP, the ROK-U.S. alliance must have both denial capability and punishment capability. Even though the alliance already had some capabilities for conventional deterrence, the capabilities should be enhanced. This section suggests the ways of reinforcing capabilities for conventional deterrence against North Korean LIP.

a. Denial Capability: Military Balance

The strongest way to prevent North Korean LIP is to have denial capability. This denial capability could be established by having military balance. The problem, however, is that it is hard to have military balance correspondingly due to the mobility of military forces. The ROK-U.S. alliance should deploy military forces against the movement of the KPA. One of the reasons for the failure of conventional deterrence was ignoring the deployment of the KPA in preparation for the bombardment of Yeonpyeong in 2010. Therefore, the key issue of military balance will be the power of intelligence. The ROK-U.S. alliance has to share intelligence about the deployment of the KPA and respond properly with a similar level of military deployment.

Even though the ROK-U.S. alliance would deploy military forces correspondingly against the deployment of the KPA, military balance will still be hard to establish perfectly, because North Korea holds the key of LIP—North Korea can select the place and time to provoke. Thus, the LIP depends upon the determination of North Korea. As a

²¹⁴Mark E. Manyin, Emma Chanlett-Avery, Mary Beth D. Nikitin, Ian E. Rinehart, and Brock R. Williams, *U.S.-South Korea Relations* (CRS Report No.R41481) Washington, DC: Congressional Research Service, June 11, 2015, 8, <http://www.icasinc.org/2015/2015l/2015lcrs.pdf>.

result, credibility for conventional deterrence, which is intended to affect North Korean determination, is the key issue for deterring North Korean LIP. Military balance will be a part of actualizing credibility for conventional deterrence. This process is naturally connected with punishment capability.

b. Punishment Capability: Reinforcement of Conventional Weapon System

To gain credibility for conventional deterrence, a defender must have punishment capability. The ROK-U.S. alliance cannot establish credibility and reputation for conventional deterrence without this capability. While punishment capability is a key issue for conventional deterrence, carrying out punishment is often hindered by two concerns: the rules of engagement and the method of military retaliation.

(1) ROE

Every issue of punishment is related with the escalation of crisis. One of the reasons for the failure of conventional deterrence was that the ROK-U.S. alliance was trapped by the maze of potential escalation of crisis. The majority of leaders had serious concerns about escalating the crisis before they decided whether to carry out punishment. This hesitation caused repeated North Korean LIP and wounded the alliance's reputation for conventional deterrence. Therefore, the ROK-U.S. alliance should establish simple ROE for preventing hesitation over retaliation, and the alliance should announce the ROE clearly to North Korea. Moreover, it is not necessary to include other considerations in the ROE. The key point of the ROE is promptness and the principle of proportion. As a result, establishing simple ROE and warning in advance about ROE will remove the danger of escalation of crisis.

(2) Precision-Guided Munitions (PGM)

The issues of ROE, which are promptness and the principle of proportion, are very important for conventional deterrence. The principle of an eye for an eye is the best guide for punishment against North Korean LIP. The ROK military, however, has usually missed the opportunity to retaliate against North Korean LIP because North Korea selected forms of LIP that made it hard to retaliate with the principle of proportion.

Therefore, the ROK-U.S. alliance should prepare several proposed methods of retaliation for overcoming established ways of military punishment.

In the same context, the announcement by Kim Kwan-Jin, who was the 43rd Minister of National Defense, was very significant. Kim declared that the ROK will counterattack the original point of North Korean LIP.²¹⁵ His declaration was an advanced method of retaliation compared with existing ways, and the ROK military could obtain more credibility for conventional deterrence through his announcement.

To achieve Kim's declaration, the ROK must develop the PGM of the air force. The PGM can attack, with surgical precision, only targeted North Korean facilities, minimizing collateral damage. Therefore, the PGM can prevent the escalation of crisis. Even though North Korea would argue that using PGM is excessive and violates the principle of proportion, using PGM would be the most restrained way of retaliation. The PGM will aim at the original point of LIP. Moreover, the ROK military will have already warned North Korea to expect the use PGM in response to LIP. Therefore, the ROK military can establish strong punishment capability with the PGM and can obtain credibility for conventional deterrence.

3. ROK-U.S. Alliance

Even while the ROK military establishes credibility and capabilities for conventional deterrence in various ways, the escalation of crisis is still a significant issue for conventional deterrence. This issue stems from the difficulty of ensuring that KJU's regime is integrally stable, and verifying North Korea's claims to have nuclear capability.²¹⁶ Therefore, North Korean LIP can escalate to a high-intensity provocation or total war.

In this situation, the ROK cannot help depending on the ROK-U.S. alliance for its national security, because the ROK does not have nuclear weapons. A conventional

²¹⁵"South Korea's Defense Minister Vows Airstrikes if North Korea Attacks," *CNN*, December 3, 2010, <http://www.cnn.com/2010/WORLD/asiapcf/12/03/south.korea.threat/>.

²¹⁶Kyle Mizokami, "Welcome to North Korean Nuclear Weapons 101," *The National Interest*, September 26, 2015, <http://nationalinterest.org/feature/welcome-north-korean-nuclear-weapons-101-13940>.

provocation may change into total war that includes using nuclear weapons. The wisest option that the ROK can select would be the cohesion of the ROK-U.S. alliance. There are two reasons why the alliance is the smart option.

First, the ROK's national security can be ensured under U.S. extended deterrence. According to *Yonhap* News Agency, "South Korea and the U.S. agreed on Monday that they will not tolerate any aggression or military provocation by North Korea, reaffirming the U.S. commitment to provide 'extended deterrence' against the communist country's growing nuclear threats."²¹⁷ Through extended deterrence, the ROK can offset the threat of North Korean nuclear weapons and any type of provocation.

Second, the ROK can obtain advanced intelligence capability with U.S. support. Providing this capability is part of the agreement of the ROK-U.S. alliance.²¹⁸ In order to counterattack the original point of LIP, the ROK should secure the exact location of the target. The ROK, however, does not have enough intelligence capability yet. Therefore, if the ROK could share the U.S. advanced intelligence capability, the ROK can develop its punishment capability and establish credibility for conventional deterrence.

C. FUTURE RESEARCH

This thesis applies the requirements for conventional deterrence to the bombardment of Yeonpyeong in 2010. Such a single case study is helpful to examine an incident deeply, but in itself such a study is limited. Therefore, a future researcher can examine other North Korean LIP across the whole period from after the end of the Korean War, using the criteria found in this thesis.

For instance, a future researcher can choose to examine some of these major cases of North Korean LIP: (1) the axe murder in the Panmunjom, (2) the sinking of *Cheonan* warship in 2010, and (3) North Korean shelling in 2015. Then, using the requirements

²¹⁷"Any N. Korean Aggression, Provocation Won't be Tolerated: Han, Carter," *Yonhap News Agency*, November 1, 2015, <http://english.yonhapnews.co.kr/search1/2603000000.html?cid=AEN20151102005900315>.

²¹⁸The White House, Office of the Press Secretary, *Joint Fact Sheet: The United States-Republic of Korea Alliance: A Global Partnership*, (Washington, DC: April 25, 2014), <https://www.whitehouse.gov/the-press-office/2014/04/25/joint-fact-sheet-united-states-republic-korea-alliance-global-partnership>.

matrix found in Table 3, it is possible to input an index for each case. For lack of space, this thesis did not deal with detailed specifics of each case. But as an approximation, the result of application of the requirements matrix to the three cases might result in the coding summarized in Table 6.

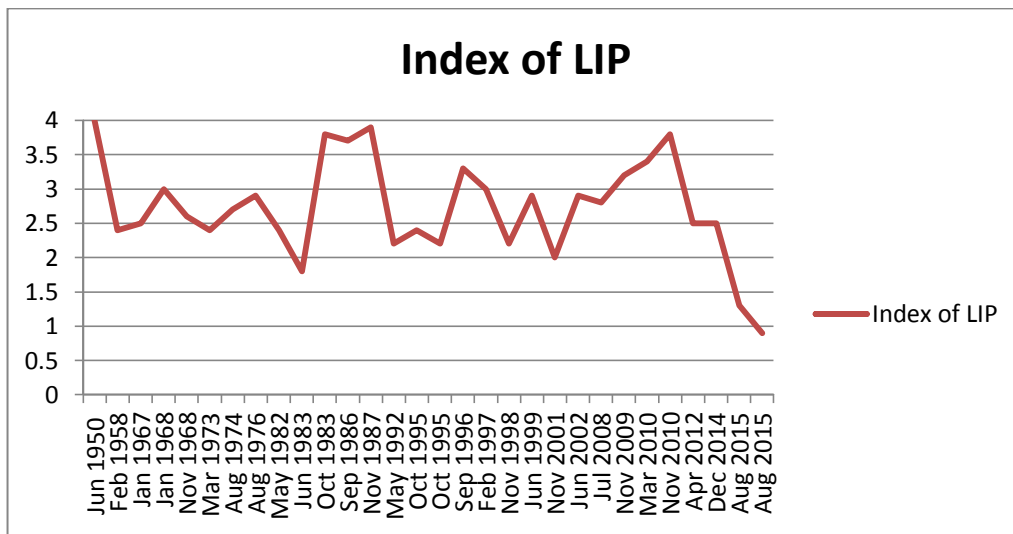
Table 6. The Application of the Conventional Deterrents Matrix to Specific Cases for Future Research.

Criterion		Index of LIP					
		Case 1		Case 2		Case 3	
Capability	(1)	1	0.5	1	0.5	0	0
	(2)	0		0		0	
Credibility	(3)	1	1	1	0.875	1	0.625
	(4)	1		0		1	
	(5)	1		1		0	
	(6)	1		1		0	
	(7)	1		1		1	
	(8)	1		1		0	
	(9)	1		1		1	
	(10)	1		1		1	
Communication	(11)	0	0.5	1	1	0	0
	(12)	1		1		0	
Aggressor's situation	(13)	1	1	1	1	0	0.33
	(14)	1		1		1	
	(15)	1		1		0	
Sum		3		3.375		0.955	
※ Note: Case 1 is the axe murder in the Panmunjom. Case 2 is the sinking of <i>Cheonan</i> warship in 2010. Case 3 is North Korean shelling in 2015.							

Applying the analysis to multiple cases, it would be possible to find meaningful patterns in the indices summarized in this table. For example, the summary figures indicate that the intensity of North Korean LIP was stronger in cases having the higher index number. On the other hand, where the sum of index was smaller, the intensity of LIP was weaker. In other words, if the ROK-U.S. alliance would have had requirements for conventional deterrence in each case, the intensity of North Korean LIP may have been weaker.

If a future researcher completes the input to the index for all North Korean LIP, a future researcher can draw a graph that shows the pattern of North Korean LIP, which might show results such as in the one that follows in Table 7.

Table 7. The Pattern of North Korean LIP.



Even though there are diverse theories explaining the reasons for North Korean LIP, this graph shows the interesting result of analysis. Each highest apex is matched up with the early stage of the regime of Kim's family. Therefore, it could be possible to demonstrate a correlation of North Korean regime transition and North Korean LIP by a quantitative method. This thesis only suggests a method of analysis and leaves the task of using this method to demonstrate the reasons behind North Korean LIP for a future researcher.

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APPENDIX. THE MAP OF KOREAN PENINSULA

Map adapted from University of Texas Libraries, “The Map of the Korean Peninsula,” *University of Texas*, accessed October 10, 2016, <https://www.lib.utexas.edu/maps/korea.html>. The map was modified because there is no map of Korean peninsula that depicts the East Sea and Dok-do, including Yeonpyeong Island.



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LIST OF REFERENCES

- Acheson, Dean. "Speech on the Far East." *Teaching American History*. January 12, 1950. <http://teachingamericanhistory.org/library/document/speech-on-the-far-east/>.
- American Society of International Law. "United States of America-Republic of Korea Treaty." *The American Journal of International Law* 48, no. 3 (1954): 147–52. <https://www.jstor.org/stable/pdf/2213963.pdf>.
- Armstrong, Charles. "One-Family Rule: North Korea's Hereditary Authoritarianism." *World Politics Review*. February 18, 2014. <http://www.worldpoliticsreview.com/articles/13573/one-family-rule-north-korea-s-hereditary-authoritarianism>.
- Art, Robert. "To What Ends Military Power?" *International Security* 4, no. 4 (Spring 1980): 3–35. <https://www.jstor.org/stable/pdf/2626666.pdf>.
- Allan, Charles T. "Extended Conventional Deterrence: In from the Cold and Out of the Nuclear Fire?" *The Washington Quarterly* 17, no. 3 (January 5, 2010): 203–233. <http://dx.doi.org/10.1080/01636609409443417>.
- Bandow, Doug. "The U.S.-South Korea Alliance Outdated, Unnecessary, and Dangerous." *CATO INSTITUTE* (Cato Institute, 2010): 1–9. <https://www.cato.org/publications/foreign-policy-briefing/ussouth-korea-alliance-outdated-unnecessary-dangerous>.
- BBC News. "'North Korean Torpedo Sank South's Navy Ship – Report.'" May 20, 2010. <http://www.bbc.com/news/10129703>.
- Bechtol, Bruce. *The Last Days of Kim Jong-il: The North Korean Threat in a Changing Era*. Washington, DC: Potomac Books, 2013.
- Bennett, Bruce W. "Uncertainties in the North Korean Nuclear Threat." *National Defense Research Institute*. Santa Monica, CA: Rand, 2010. http://www.rand.org/content/dam/rand/pubs/documented_briefings/2010/RAND_DB589.pdf.
- Bermudez, Joseph S. "The Yonpyong-do Incident, November 23, 2010." *38 North Special Report* 11–1 (January 11, 2011). http://38north.org/wp-content/uploads/2011/01/38North_SR11-1_Bermudez_Yeonpyeong-do.pdf.
- Branigan, Tania. "North Korea's Kim Jong-Un Gets New Official Theme Song." *Guardian*. July 6, 2012. <https://www.theguardian.com/world/2012/jul/06/north-korea-kim-jung-un-song>.
- Byman, Daniel L., and Matthew C. Waxman. "Kosovo and the Great Air Power Debate." *International Security* 24, no. 4 (Spring 2000).

- Cha, Victor. "The Sinking of the Cheonan." *CSIS*. April 22, 2010.
- Chosun Ilbo*. "Military under Fire for Response to N. Korean Attack." November 25, 2010. http://english.chosun.com/site/data/html_dir/2010/11/25/2010112500536.html.
- . "S. Korea 'Was Ready to Strike' North during Yeonpyeong Attack." December 13, 2010. http://english.chosun.com/site/data/html_dir/2010/12/13/2010121300397.html.
- Chung, Kyu-Sub. "Cheonan Warship Sinking and Kim Jong-il Regime." *National Defense Research* 53, no. 3. Translated by the author. Seoul: National Defense Graduate School for National Security Affairs, 2010. <https://www.csis.org/analysis/sinking-cheonan>.
- Clausewitz, Carl von. *On War*, Edited and translated by Michael Eliot Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.
- CNN. "After North Korean Strike, South Korean Leader Threatens 'Retaliation.'" November 24, 2010. <http://www.cnn.com/2010/WORLD/asiapcf/11/23/nkorea.skorea.military.fire/>.
- . "N. Korea: Exercise Brings War 'Closer.'" November 26, 2010. <http://www.cnn.com/2010/WORLD/asiapcf/11/25/koreas.crisis/>.
- . "Report: South Korean Navy Ship Sinks." March 26, 2010. <http://www.cnn.com/2010/WORLD/asiapcf/03/26/south.korea.ship.sinking/index.html>.
- . "South Korea's Defense Minister Vows Airstrikes if North Korea Attacks." December 3, 2010. <http://www.cnn.com/2010/WORLD/asiapcf/12/03/south.korea.threat/>.
- Collins, John M. "Principles of Deterrence." *Air University Review* (November–December 1979). <http://www.au.af.mil/au/afri/aspj/airchronicles/aureview/1979/nov-dec/jcollins.html>.
- Demus, Alyssa. "Conventional Versus Nuclear: Assessing Comparative Deterrent Utilities." *Army Capabilities Integration Center*, 8. Accessed October 8, 2016. http://www.arcic.army.mil/app_Documents/SLTF/Conventional%20Versus%20Nuclear%20Assessing%20Comparative%20Deterrent%20Utilities.pdf.
- Dong-A Ilbo*. "Failure of Intelligence and Vigilance." December 3, 2010. <http://english.donga.com/List/3/all/26/266393/1>.

- Douhet, Giulio. *The Command of the Air*. Washington, DC: Office of Air Force History, 1983.
- Dyke, Jon M., Van Mark J. Valencia, and Jenny Miller Garmendia. "The North/South Korea Boundary Dispute in the Yellow (West) Sea." *Marine Policy* 27, Issue 2 (March 2003). 143–158. http://ac.els-cdn.com/S0308597X0200088X/1-s2.0-S0308597X0200088X-main.pdf?_tid=fdac149e-a0ce-11e6-92b8-00000aacb362&acdnat=1478072336_5b5f327f0283ca4706c0dfed81e59f6d.
- Fackler, Martin, and Mark McDonald. "South Korea Reassesses Its Defenses after Attack." *New York Times*, November 25, 2010. <http://www.nytimes.com/2010/11/26/world/asia/26korea.html>.
- Fischer, Hannah. *North Korean Provocative Actions, 1950–2007* (CRS Report No. RL30004). Washington, DC: Congressional Research Service, 2007. <https://www.fas.org/sgp/crs/row/RL30004.pdf>.
- Foster, Peter. "North and South Korea Warships Exchange Fire." *Telegraph*. November 10, 2009. <http://www.telegraph.co.uk/news/worldnews/asia/southkorea/6536557/North-and-South-Korea-warships-exchange-fire.html>.
- Gause, Ken E. "North Korea's Provocation and Escalation Calculus: Dealing with the Kim Jong-un Regime." *Center for Naval Analyses*, August 2015. https://www.cna.org/cna_files/pdf/COP-2015-U-011060.pdf.
- George, Alexander L., and Richard Smoke. *Deterrence in American Foreign Policy: Theory and Practice*. New York: Columbia University Press, 1974.
- Gerson, Michael S. "Conventional Deterrence in the Second Nuclear Age." *Parameters: U.S. Army War College* 39, no. 3 (Fall 2009).
- Global Firepower*. "Military Power Comparison Results for North Korea vs. South Korea." Last updated January 21, 2016. <http://www.globalfirepower.com/countries-comparison-detail.asp?form=form&country1=north-korea&country2=south-korea&Submit=COMPARE>.
- GlobalSecurity.org*. "Northern Limit Line (NLL) West Sea Naval Engagements." Accessed November 2, 2016. <http://www.globalsecurity.org/military/world/war/nll.htm>.
- . "OPCON Transfer." <http://www.globalsecurity.org/military/agency/dod/usfk-opcon.htm>.
- Grint, Keith, and Steve Woolgar. *The Machine at Work: Technology, Work and Organization*. Cambridge: Polity, 1997.

- Guzansky, Yoel. "Thin Red Lines: The Syrian and Iranian Contexts." *Strategic Assessment* 16, no. 2 (July 2013). 23–33. http://www.inss.org.il/uploadImages/systemFiles/adkan16_2ENG5_Guzansky.pdf.
- Han, Yong-Sup, and Sang Hyuk Jeong. "Political, Economical, Military Analysis of the Wartime Operational Control Authority Transfer Issue: Theory, Evaluation, Countermeasures." *Journal of International Politics* 20, no. 1. Seoul: Ilmin International Relations Institute. (April 2015): 5–36. <http://dx.doi.org/10.18031/jip.2015.04.20.1.5>
- Huntington, Samuel P. "Conventional Deterrence and Conventional Retaliation in Europe." *International Security* 8, no. 3 (Winter 1983–1984): 32–56. <http://www.jstor.org/stable/2538699>.
- Huth, Paul K. *Extended Deterrence and the Prevention of War*. New Haven: Yale University Press, 1988.
- Hwang, Sun Nam. "A Study on Problems and Alternatives for the Starting Point Attack as a Deterrence of North Korea's Local Provocation." *The Collection of Dissertations of Air Force Academy of the ROK* 66, no. 2 (2015). <http://www.riss.kr/link?id=A101809133>.
- Jervis, Robert. "Arms Control, Stability, and Cause of War." *Political Science Quarterly* 108, no. 2 (Summer 1993): 239–253. <http://www.jstor.org/stable/2152010>.
- . "Rational Deterrence: Theory and Evidence." *World Politics* 41 (January 1989): 183–207. doi: 10.2307/2010407.
- . "What Do We Want to Deter and How Do We Deter It?" In *Turning Point: The Gulf War and U.S. Military Strategy*, edited by L. Benjamin Ederington and Michael J. Mazarr, 117–136. Boulder: Westview Press, 1994.
- Jung, Bo-Ra. "A Rapid Decrease of Humanitarian Aid to North Korea." *Radio Free Asia*. December 27, 2010. Translated by the author. http://www.rfa.org/korean/in_focus/nk_aid-12272010165214.html.
- Jung, Jaewook. "NK's Military Provocation and Embodiment of Proactive Deterrence." *The Korean Journal of International Studies* 52, no. 1 (2012): 137–159. <http://www.dbpia.co.kr/Article/NODE01817184>.
- . "North Korean Military Provocation and Strategic Tasks." *The Korean Association of International Studies* (August 2011): 187–208. <http://www.dbpia.co.kr/Article/NODE01682052>.
- Kahn, Herman. *On Thermonuclear War*. New Brunswick, NJ: Transaction Publishers, 1960.

- Kate, Daniel Ten, and Peter S. Green. "Holding Korea Line Seen against Law Still U.S. Policy." *Bloomberg Businessweek*. December 17, 2010. <https://web.archive.org/web/20101218120740/http://www.businessweek.com/news/2010-12-17/holding-korea-line-seen-against-law-still-u-s-policy.html>.
- Keilers, John G. "Nixon Doctrine and Vietnamization." *WWW.ARMY.MIL*. https://www.army.mil/article/3867/Nixon_Doctrine_and_Vietnamization.
- Kim, Christine. "South Thwarts even Bigger Attack." *Korea JoongAng Daily*, November 25, 2010. <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2928852>.
- Kim, Jae Yeop, and Jong Ha Kim. "Enhancing Korea's Conventional Deterrence Strategy." *New Asia* 68, no. 3 (Fall 2011): 115–144. http://nari.re.kr/bbs/board.php?bo_table=newasia_1&wr_id=668&page=9.
- Kim, Jongdae. *Secret Files: The War in the Yellow Sea*. Seoul: Medich Media, 2013.
- Kim, So-hyun. "Navy Chief Vows Revenge for Cheonan." *Korea Herald*. April 30, 2010. <http://www.koreaherald.com/view.php?ud=20100429000710>.
- Korea Herald*. "Seoul to Bolster Marine Corps as Elite Force." December 3, 2010. <http://www.koreaherald.com/view.php?ud=20101203000674>.
- Lee, Joon-Sam. "North Korea Tries to Make Kim Jong Un's Theme Song, *Balgyeolum*." *Yonhap News*. Translated by the author. February 27, 2012. <http://www.yonhapnews.co.kr/politics/2012/02/23/0505000000AKR20120223099200014.HTML?source=rss>.
- Lee, Young-jae. "ROK-US Alliance Military System Is Operating after North Korean Shelling." *Yonhap News Agency*. August 21, 2015. <http://www.yonhapnews.co.kr/bulletin/2015/08/21/0200000000AKR20150821040200043.HTML>.
- Lichtenstein, Wendy L. "Conventional Military Deterrence—Its Rise to Dominance and Its Future." *Strategy Research Project*. Carlisle, PA: U.S. Army War College, 2002.
- Lim, Gang-Taek. "A Ripple Effect on North Korean Economy by Stopping Trade between South and North." *Korea Institute for National Unification Online Series* 10–17. Translated by the author. Seoul: KINU, May 24, 2010. <http://repo.kinu.or.kr/bitstream/2015.oak/1641/1/0001447348.pdf>.
- Lim, Jae-Cheon. "North Korea's Hereditary Succession: Comparing Two Key Transitions in the DPRK." *Asian Survey* 52, no. 3 (University of California Press, May/June 2012): 550–570. <http://www.jstor.org/stable/10.1525/as.2012.52.3.550>.

- Long, Austin G. *Deterrence: From Cold War to Long War: Lessons from Six Decades of Rand Deterrence Research*. Santa Monica, CA: Rand Corp., 2008.
http://www.rand.org/content/dam/rand/pubs/monographs/2008/RAND_MG636.pdf.
- Luttwak, Edward. *Strategy: The Logic of War and Peace*. Cambridge, MA: Belknap Press of Harvard University Press, 2002.
- Manyin, Mark E., Emma Chanlett-Avery, Mary Beth D. Nikitin, Ian E. Rinehart, and Brock R. Williams. *U.S.-South Korea Relations*. (CRS Report No.R41481) Washington, DC: Congressional Research Service, June 11, 2015.
<http://www.icasinc.org/2015/2015l/2015lcrs.pdf>.
- Market Trends. *Daily NK*. Accessed November 12, 2016. <http://www.dailynk.com/english/market.php>.
- McDevitt, Michael. "Deterring North Korean Provocations." *Brookings East Asia Commentary* no. 46. Washington, DC: Brookings, February 2011.
<http://www.brookings.edu/research/papers/2011/02/north-korea-mcdevitt>.
- McDonald, Mark. "'Crisis Status' in South Korea after North Shells Island." *New York Times*, November 23, 2010. <http://www.nytimes.com/2010/11/24/world/asia/24korea.html?src=mv>.
- McDonnell, Stephen. "North Korea Attack Linked to Leadership Succession." *ABC News*. November 25, 2010. <http://www.abc.net.au/news/2010-11-26/north-korea-attack-linked-to-leadership-succession/2352506>.
- Mearsheimer, John J. *Conventional Deterrence*. Ithaca: Cornell University Press, 1983.
- Ministry of National Defense of the Republic of Korea. *2010 Defense White Paper*. Seoul: Ministry of National Defense of the Republic of Korea, March 31, 2011.
- . *Investigation Result on the Sinking of ROKS "Cheonan"*. Seoul: Ministry of National Defense of the ROK, May 20, 2010. http://news.bbc.co.uk/nol/shared/bsp/hi/pdfs/20_05_10jigreport.pdf.
- . *Joint Communique The 41st ROK-U.S. Security Consultative Meeting*. Seoul: October 22, 2009. http://www.mnd.go.kr/user/boardList.action?command=view&siteId=mnd&boardId=I_43915&page=1&boardSeq=o_1130000000478&search=&column=&categoryId=&categoryDepth=&id=mnd_080000000000&parent=.
- . *Joint Communique The 42nd ROK-U.S. Security Consultative Meeting*. Seoul: October 8, 2010. http://www.mnd.go.kr/user/boardList.action?command=view&page=1&boardId=I_43915&boardSeq=o_1130000000562&titleId=null&siteId=mnd&id=mnd_080000000000.

- . *Joint Communique The 45th ROK-U.S. Security Consultative Meeting*. Seoul: October 2, 2013. http://www.mnd.go.kr/user/boardList.action?command=view&boardId=I_43915&boardSeq=I_581318&id=mnd_080000000000.
- . *The Republic of Korea Position Regarding the Northern Limit Line*. Seoul: Ministry of National Defense, August 2002. <https://assets.documentcloud.org/documents/1341897/rok-position-regarding-northern-limit-line-2002.pdf>.
- Mizokami, Kyle. “Welcome to North Korean Nuclear Weapons 101.” *National Interest*. September 26, 2015. <http://nationalinterest.org/feature/welcome-north-korean-nuclear-weapons-101-13940>.
- Monroe, Bryan. “5 Things We Still Don’t Know about North Korea’s Nukes.” *CNN Politics*, April 12, 2013. <http://www.cnn.com/2013/04/12/politics/5-things-north-korea-nukes>.
- Morgan, Patrick M. *Deterrence Now*. Cambridge, UK; New York: Cambridge University Press, 2003.
- Morgenthau, Hans J. *A New Foreign Policy for the United States*. New York: Praeger, 1969.
- Mount, Mike. “U.S., South Korea to Conduct Joint Military Exercises.” *CNN*. May 24, 2010. <http://edition.cnn.com/2010/WORLD/asiapcf/05/24/south.korea.naval.exercises/index.html?hpt=T1>.
- Mullen, Jethro, Kathy Novak, and Greg Botelho. “North Korea Issues Military Threats as Tensions with South Korea Rise.” *CNN*, August 21, 2015. <http://www.cnn.com/2015/08/21/asia/koreas-tensions/>.
- Nam, Sung-Wook. “In 2011, I Wish to Ride the Express to Korean Reunification.” *Unification Generation*, no. 68. Translated by the author. (2011).
- National Assembly of the ROK. *The Minutes of National Defense Committee in the Inspections of Government Office*. Seoul: The Secretariat of the National Assembly, October 19, 2012. <http://likms.assembly.go.kr/record/mhs-40-010.do?classCode=2&daeNum=20&commCode=HA&outConn=Y#none>.
- Oh, Dae-Sik. “Understanding North Korea’s Actions through Prospect Theory: The Cheon-Ahn Battleship Assault and Yeon-Pyeong Island Bombardment.” *Seoseok Collection of Social Scientific Writing* 5, no. 2. Translated by the author. Gwangju: Chosun University Press, 2012. http://www.riss.or.kr/search/detail/DetailView.do?p_mat_type=1a0202e37d52c72d&control_no=ee68aae99f3f92f0d18150b21a227875.

- Olson, Wyatt. "Retired USFK Head: North Korea Collapse May Happen Sooner." *Military.com*, May 25, 2016. <http://www.military.com/daily-news/2016/05/25/retired-usfk-head-north-korea-collapse-may-happen-sooner.html>.
- Park, Hyeong-Joong. "Kim Jong Il's Visit to China and the Crisis of Survival Strategy of '2005 Model Year.'" *Korea Institute for National Unification Online Series* 11–18, Translated by the author. Seoul: KINU, June 1, 2011. <http://www.kinu.or.kr/2011/0531/co11-18.pdf>.
- Park, Hwee-Rhak. "'Resolute Response' and 'Prevention of Escalation' Regarding North Korean Provocations: Appropriate Application of Self-defense and Rules of Engagement." *The Journal of Strategic Studies*. Korea Research Institute For Strategy, May 2012.
- Paul, T. V. *Asymmetric Conflict: War Initiation by Weaker Powers*. Cambridge, UK: Cambridge University Press, 1994.
- Press, Daryl G. *Calculating Credibility: How Leaders Assess Military Threats*. Ithaca, NY: Cornell University Press, 2005.
- Rabiroff, Jon, and Yoo Kyong Chang. "South Korea Readying Forces to Respond to Future Attacks from North." *Stars and Stripes*. July 5, 2011. <http://www.stripes.com/archive/archived-special-reports/crisis-in-korea/south-korea-readying-forces-to-respond-to-future-attacks-from-north-1.148368>.
- Rhodes, Edward. "Conventional Deterrence." *Comparative Strategy* 19, no. 3 (2000).
- Roehrig, Terence. "The Northern Limit Line: The Disputed Maritime Boundary Between North and South Korea." *NCNK Issue Brief*, September 30, 2011. http://www.ncnk.org/resources/publications/NCNK_Issue_Brief_NLL_September_2011.pdf.
- Ryoo, Moo Bong. "The Korean Armistice and the Islands." *Strategy Research Project*. Carlisle, PA: U.S. Army War College, November 3, 2011. [file:///C:/Users/jlee2.ERN.016/Downloads/ADA500904%20\(2\).pdf](file:///C:/Users/jlee2.ERN.016/Downloads/ADA500904%20(2).pdf).
- Schelling, Thomas. *Arms and Influence*. New Haven: Yale University Press, 1966.
- . *The Strategy of Conflict*. Cambridge, MA: Harvard University Press, 1960.
- Shimshoni, Jonathan. *Israel and Conventional Deterrence: Border Warfare from 1953 to 1970*. Ithaca, NY: Cornell University Press, 1988.
- Shin, Hae-In. "North Korea Officially Starts Succession." *Korea Herald*, September 28, 2010. <http://www.koreahearl.com/view.php?ud=20100928000875>.

- Snyder, Glenn H. "Alliance Theory: A Neorealist First Cut." *Journal of International Affairs* 44, no. 1 (1990): 103–123. https://www.jstor.org/stable/24357226?seq=1#page_scan_tab_contents.
- . *Deterrence and Defense: Toward A Theory of National Security*. Princeton, NJ: Princeton University Press, 1961.
- Snyder, Scott. "North Korea Currency Reform: What Happened and What Will Happen To Its Economy?" *The Asia Foundation*, 2010. <http://www.asiafoundation.org/resources/pdfs/SnyderDPRKCurrency.pdf>.
- Song, Sang-ho. "North Korea Fires Artillery into Sea near Western Border." *Korea Herald*, November 23, 2010. <http://www.koreaherald.com/view.php?ud=20101123000840>.
- Stone, John. "Conventional Deterrence and the Challenge of Credibility." *Contemporary Security Policy* 33, no. 1 (2012): 108–123. <http://www.tandfonline.com/doi/abs/10.1080/13523260.2012.659591>.
- STRATFOR. "Deciphering North Korea's Provocations." November 24, 2010. https://www.stratfor.com/geopolitical-diary/deciphering-north-koreas-provocations?0=ip_login_no_cache%3Dc59f3aeaa34656e5a783c40f2d044494.
- Sun, Tzu. *The Art of War*. Translated by Lionel Giles. Boston, MA; London: Shambhala Publications, 2011.
- Tertrais, Bruno. "Drawing Red Lines Right." *The Washington Quarterly* 37, no. 3 (Fall 2014): 7–24. <https://www.ciaonet.org/attachments/26815/uploads>.
- Tomes, Robert R. "Nuclear Strategy, Deterrence, Compellence, and Risk(y?) Management: Thomas Schelling Meets Joint Vision 2010." *Military Operations Research Symposium*. Quantico, VA: June 1997.
- United States Department of the Army. *Field Manual 100–20: Military Operations in Low Intensity Conflict*. December 5, 1990. http://www.globalsecurity.org/military/library/policy/army/fm/100-20/10020ch1.htm#s_9.
- United States Department of Defense, *Dictionary of Military and Associated Terms*. Washington, DC, 2012.
- University of Texas Libraries. "The Map of Korean Peninsula." *University of Texas*. Accessed October 10, 2016. <https://www.lib.utexas.edu/maps/korea.html>.
- Varandani, Suman. "Kim Jong Un Ready For War? North Korea Leader Inspects Military Readiness amid Wife's Disappearance Reports." *International Business Times*. November 10, 2016. <http://www.ibtimes.com/kim-jong-un-ready-war-north-korea-leader-inspects-military-readiness-amid-wifes-2444478>.

- Walt, Stephen M. *The Origins of Alliance*. Ithaca, NY: Cornell University Press, 1987.
- The White House. Office of the Press Secretary. *Joint Fact Sheet: The United States-Republic of Korea Alliance: A Global Partnership*. Washington, DC: April 25, 2014. <https://www.whitehouse.gov/the-press-office/2014/04/25/joint-fact-sheet-united-states-republic-korea-alliance-global-partnership>.
- William, Phil. "Thomas Schelling." In *Makers of Nuclear Strategy*. Edited by John Baylis and John Garnett. New York: St. Martin's Press, 1991.
- Wolf, Barry. "When the Weak Attack the Strong: Failure of Deterrence." *Rand Corporation*. Santa Monica, CA: 1991. <https://www.rand.org/content/dam/rand/pubs/notes/2005/N3261.pdf>.
- Yonhap News Agency*. "Any N. Korean Aggression, Provocation Won't be Tolerated: Han, Carter." November 1, 2015. <http://english.yonhapnews.co.kr/search1/2603000000.html?cid=AEN20151102005900315>.
- Yoo, Ho-Yeol. "A preface: in 2010, New Year and New Morning." *Unification Generation* no. 69. Translated by the author. (2001).

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