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A Case Study of AI DEFENSE Applications in Major Northeast Asian States and Strategies for Building a ROK's AI-based National Defense System

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Abstract

Purpose: The sequential combination of AI algorithms, or problem-solving commands, can increase aware-ness of battlefield situations. This article intends to analyze the efficiency of AI and to discuss the implications of Northeast Asian neighboring countries' application of AI in military affairs. It also explores the ROK's strate-gies for an AI-based defense system.

Method: For better analysis, as a part of case studies, this article reviews the U.S, China, Japan, and Russia's AI application to the national defense, and tries to draw out implications to the ROK's construction of an AI-based defense system. "The military utilization areas of AI are surveillance and reconnaissance(ISR), military, cyber operations, information operations, command and control, semi-autonomous and autonomous vehicles, and autonomous weapons systems"

Results: IF we draw out suggestions from neighboring countries are as follows, first, mid-to-long-term AI power acquisition plans should be prepared. Second, AI-based intelligent surveillance, command control, infor-mation, firepower, maneuvering, and protection capabilities must be reinforced. Third, we need to expand our ability to support operations based on AI. Fourth, the development of large-capacity tactical network technolo-gy is necessary for the effective operation of the AI combat system.

Conclusion: This article concluded that the ROK's AI autonomous combat system capability should be streng-thened to achieve battlefield superiority.

Bracing for the threat from neighboring powers in the changing security environment of Northeast Asia, the ROK should also use AI as a driving force for future military innovation cherishing AI ethics. It needs to improve the ability to utilize AI by strengthening the competitiveness of technology through the cooperation of the pri-vate-government-military circles cooperation.

[Keywords] *AI Application, National Defense, Northeast Asian Countries, Development, AI-based Defence*

1. Introduction

As China accelerates its use of AI(AI) technology militarily, neighboring countries in Northeast Asia have also begun to acquire weapons to secure deterrence against the Chinese military, sparking an arms race for offensive and defensive weapons in Northeast Asia. China's AI military capabilities have been developing rapidly since President Xi Jinping declared "military intelligence" at the 19th Congress of the Communist Party of China in 2017.

The importance of AI is growing because future warfare is a war in which land, sea, air, cyber, and space wars are held at the same time[1]. Due to the sharp drop in military resources and life-respecting ideology, the core combat system in the future battlefield will be an unmanned system equipped with AI. AI means the simulation of human intelligence in machines that are programmed to think, act, and learning like humans.

In 1973, John McCarthy defines the term 'Artificial Intelligence'(AI): AI is a science; it is the study of problem-solving and goal achieving processes in complex situations[1].

While AI opens up new opportunities for the military, it is also fraught with danger. Emerging AI technologies allow the combination of existing military resources in new ways that increase their efficiency on the battlefield. However, the speed of technological change triggers the arms race. Military artificial intelligence could undermine the foundation of strategic stability by employing the most cutting-edge technologies and systems which can provide military dominance. Interconnection of Space and Surveillance System(STSS with the Command and Control, Battle Management, and Communications(C2BMC) using AI-based programs open new pages for interception of ballistic missiles[2][3].

The sequential combination of AI algorithms, problem-solving commands, can increase awareness of battlefield situations. With the help of the AI Chief of Staff, it is possible to maximize the efficiency of the command control system and expedite the achievement of victory record and damage analysis using big data to prompt the decision-making of the commander to achieve the ultimate goal of victory before the war[4]. With the use of deep learning-based algorithms, the recognition rate realized by AI improved to 97.7% in 2017[5]. Deep learning refers to a technology used to classify or cluster objects or data. Just as the human brain distinguishes objects, it is a kind of machine learning that trains computers to learn things with artificial neural network algorithms[6][7].

AI is applied to various fields such as autonomous combat through deep learning, speech recognition, climate change prediction, and health care. In future warfare, AI staff and combat robots will emerge, which will enable rapid decision-making on the battlefield, and combat robots will carry out battles to minimize casualties, gaining an advantage on the battlefield. AI learns to cope with increasingly complex tasks by accumulating experience and absorbing new technologies.

The core technology of AI is not just a machine that replaces humans, but a technology that recognizes and judges itself like humans. AI goes through the process of perception-cognitive-determination-action like human beings. The military system combined with AI, some or all parts depending on the purpose of operation of the system in the process of perception-cognitive-determination-action.

As these net functions of AI are incorporated into the defense sector, Northeast Asian countries are accelerating and competing with the active attempts to apply AI technology extensively in the defense sector. If it lags behind neighboring countries in military innovation using AI, it can pose a major threat to national security. The ROK should prepare for possible conflicts with Northeast Asian neighbors. This article intends to analyze the efficiency of AI and to discuss the implications of Northeast Asia neighboring countries' application of AI in military affairs[8]. It also explores the ROK's strategies for building an AI-based defense system.

To this end, Chapter 2, discuss the need for AI in the future. Chapter 3, examines the use of AI in military affairs in the US, China, Japan, and Russia, the neighboring countries of the Korean Peninsula. Chapter 4 presents the direction of the ROK's building of AI's based defense system. And Chapter 5, presents policy options for the AI-based defense system for Future Warfare.

2. Military Use of AI in Future Warfare

AI was first used in 1956 when several scholars gathered at the Dartmouth Conference to share their opinions on "thinking machines." AI(AI) is a combination of 'artificial' and 'intelligence', which means the total ability to solve artificial problems. In other words, it is part of computer science and information technology that allows computers to perform thinking, learning, and self-development that can be done by human intelligence. AI can be divided into four stages <Table 1>.

Table 1. AI level[9].

Level 1	Simple automatic control programs such as vacuum cleaners and washing machines
Level 2	Chess game, responsive to questions, judgment/inference based on knowledge
Level 3	Knowledge, rules, and machine learning using sample data in the big data era
Level 4	Deep learning technology that shows results with multi-species neural network technology and even "feature expression learning"

Level 1 is a simple control program, Level 2 is a classical AI, and Level 3 is an AI that automatically judges based search engines or big data by accepting machine learning. Level 4 is an AI that accepts deep learning and learns the input value itself used to represent data when machine learning is performed. A deep learning technique is based on artificial neural networks geared to efficiently support learning[10].

Currently, more than 40 major countries, including the US, are attempting to develop unmanned weapons using AI in preparation for the era of 'robot war'. Traditionally, the three elements of war are soldiers, weapons, and battlefields, but in the era of AI-equipped robot wars, these three elements disappear at once. Computer experts, not soldiers, and computer internet can destroy infrastructure in certain cities and paralyze financial markets and power systems. Robots equipped with AI are used for electronic communication network disturbances and missile target guidance. Major countries including the United States are expected to deploy unmanned weapons without human control in the next 10 to 20 years[11][12].

Elon Musk warned that AI is more dangerous than atomic bombs and could provide a cause that triggered World War III. He compared AI to 'evil' and Apple co-founder Stephen Gary Wozniak called for an international agreement banning military use, saying that "AI weapons can become a 'third war revolution' following chemical and nuclear weapons[13]."

The United States is developing "space weapons"(satellite-mounted weapons) that attack enemies with weapons on military satellites in space warfare. Elon Musk is concerned that killer robots could raise ethical questions and humans could install robots on the human body to survive[14]. The United States has set many records by using drones to assassinate terrorists as a pioneer in military AI drones[15]. Effective Global AI Governance can help to tackle the problems caused by AI[16]. Currently, robotic weapons can be divided into three stages. The first step is unmanned tanks or traps remotely controlled by humans. As the second step, an automation system like a missile defense network, but is managed and supervised by humans. In the third step, autonomous learning without human intervention once enters the operation. Currently, the actual use of unmanned weapons powered only by AI without human intervention is subject to legal controversy in the international community.

AI technology, which has penetrated our daily lives with the enhancement of IoT connectivity, is bringing fundamental changes even to the war[17]. UAVs such as "Global Hawk" and "Predator" are being used for reconnaissance, bombing, and the assassination of an enemy's important person[18]. AI is converging with robotics to play an important role in motor control, navigation, and tactical decision-making <Table 2>.

Machine learning and autonomy. It opens up the possibility of using nuclear weapons to accomplish tactical tasks[19]. Swarms of unmanned vehicles could open a new page in the history of non-contact warfare without the battlefield presence of human combatants. The inexpensive escort drones reduce risks to pilots and aircraft carriers. Military AI in outer space Trigger development of new defense systems to protect against unknown threats, primarily against spacecraft capable of disabling satellites.

Table 2. The effectiveness of AI in future warfare[20].

Machine learning and autonomy	It opens up the possibility of using nuclear weapons to accomplish tactical tasks
Swarms of unmanned vehicles	It could open a new page in the history of noncontact warfare without the battlefield presence of human combatants
The inexpensive escort drones	It reduces risks to pilots and aircraft carriers
Unmanned fighter	The permanent removal of pilots from cockpits
Military AI in outer space	Trigger development of new defense systems to protect against unknown threats, primarily against spacecraft capable of disabling satellites

The military utilization of AI is gradually increasing as missiles equipped with AI fly autonomously toward the target even far from the data link. The military utilization areas of AI are just like surveillance and reconnaissance(ISR), military, cyber operations, information operations, command and control, semi-autonomous and autonomous vehicles, and autonomous weapons systems[21][22].

3. AI Military Application of Major Northeast Asian States

3.1. The U.S.

The United States is focusing on AI source and core technology development and human resources development through government-level investment. The U.S. began full-fledged research in the 1990s and began to develop advanced technologies through studying human brain behavior and mapping comprehensive brain activities when it announced the " Brain Initiative Project" during Obama's presidency in April 2013. In May 2018, President Trump promoted the establishment of an industry-academic-research partnership related to AI. In 2018, President Trump has established and promoted the 'Defense AI Strategy' based on the US defense strategy. To promote the defense AI strategy in 2018, a Joint Artificial Intelligence Center(JAIC) was established in the Ministry of National Defense information officer, and more than $ 15 million was allocated annually[23].

On February 1, 2019, the US Army installed AI TF under the Future Command to support JAIC activities and introduce AI and decided to invest 72 million dollars over the next five years. To this end, a consortium will be formed around Carnegie Mellon University to conduct defense AI research and development. The United States is actively engaged in research activities to integrate AI in the military sector. The Ministry of National Defense(MND) is pursuing AI technology research that can predict, detect, and track the launch of nuclear missiles by enemies[24]. It also developed DARPA(Defense Advanced Research Projects Agency), image information recognition of Mind's Eye, and the first unmanned autonomous ship "Sea Hunter," which can automatically track diesel submarines up to thousands Km. Navy developed an autonomous submarine Echo Voyager through Boeing and signed a $43 million contract with Boeing to introduce CXLUV: Extra Long Range Unmanned Vehicle of 4 Orca. In 2020, Boeing launched its first Royal Wingman drone to support intelligence surveillance and early warning missions with AI that is not remotely controlled by a pilot.

The U.S. proposed five principles of the Ministry of National Defense's recommendations on the ethical use of AI to use AI weapons in the exhibition in February 2020: responsible, equitable, traceable, reliable, and governable <Table 3>[25].

Table 3. Five principles of the DoD's AI ethics[26].

Responsible	Ministry of National Defense staff shall maintain responsibility for the development, distribution, and use of AI with the appropriate level of judgment and attention
Equitable	Careful measures must be taken to minimize unintended biases in AI functions
Traceable	AI functions shall be developed and distributed so that employees can properly understand the technologies, development processes, and operation methods applied to AI, and this shall include transparent and auditable methodology, number of data, sources, design procedures, and documents
Reliable	AI functions have a clear and well-defined purpose and the safety, security, and effectiveness of these functions should be tested
Governable	It is necessary to design and build AI functions to perform intended functions while having the ability to detect and prevent unintended consequences and the ability to disable or disable distributed systems that show unintended actions

The U.S. is moving toward human-machine cooperation with a focus on expanding human capabilities, the main body of combat performance, as a way to combine AI with national defense. The US military application of AI areas is situational awareness, cyber, military logistics, and command and control, and "autonomy in motion" in the operation of swarming drones[27].

3.2. The PRC

China recognizes AI as a national strategic business and is seeking to expand its large-scale investment and market. The 'Next-Generation AI Development Plan' was announced to lead the world in July 2017, which is the top priority strategy of President Xi Jinping, which is the most comprehensive AI strategy at the national level[28]. China plans to focus on national AI technology innovation to develop a market worth 1 trillion Yuan(about 180 trillion Won) for AI core industries and 10 trillion Yuan for related industries by 2030.

Chinese government perceives AI as a game-changer, selected leading companies to foster the AI industry, and is promoting specialized platform development and technology development[29]. The Chinese AI strategies stress harmonious cooperation between the public and private sectors[30]. Focusing on preoccupying global markets centering on China's top three IT companies, Baidu and Alibaba Tencent, the Chinese Academy of Sciences is developing a neural network chip(Cambricon) that can operate 16 billion virtual brain cells per second, and is expected to become the world's best AI hardware if it's development turn out success[31]. It is also making efforts to develop military AI and foster human resources. The People's Liberation Army is trying to develop and apply the 'Parallel Intelligent Military System', a new military theory to prepare for future wars using AI. This is a system in which military systems and AI systems interact in real-time to build, manage, and operate military power. It is also studying technology that uses AI to mount automatic operation functions on next-generation cruise missiles. China has enrolled geniuses under the age of 18 to the Beijing Institute of Technology, a university affiliated with the defense science, technology, and industry committee, to develop AI weapons.

In October 2019, China unveiled the unmanned stealth attack aircraft 'GJ-11'and the unmanned submarine ' HSU-001' at the 70th anniversary of its founding. The GJ-11 has a similar fuselage shape to the U.S. B-2 strategic bomber and can penetrate the enemy and attack strategic targets without the risk of being detected, and is already in operation by the Chinese military. The unmanned submarine HSU-001 is tasked with collecting marine environmental data and reconnaissance of enemy

ships while conducting long-range autonomous navigation. In April 2019, China unveiled the world's first unmanned amphibious assault vehicle 'Marine Yard'. It can carry out combat remotely, carrying two machine guns and an anti-aircraft missile and sailing autonomously based on AI.

3.3. The Japan

Japan is accelerating AI technology innovation to overcome low growth and aging. In April 2016, the 'Innovation Intelligence Integrated Research Center' was established to gather top AI researchers at home and abroad and an open AI R & D platform was established. In the Defense AI area, active research is underway in the field of robots with the world's best technology. Japan evaluates that it has not secured sufficient competitiveness in the AI field and plans to develop AI technology. Japan has selected IoT, big data, AI, and robot technology as key items of the realization of the fourth industrial revolution by Japan's rehabilitation strategy prepared in April 2016, and is proposing aggressive countermeasures to secure competitiveness. The Advanced Intelligent Intelligence Platform(AIP) project is carried out by establishing the AI Technology Strategy Conference, which oversees AI R & D and establishing the Innovation Intelligence Technology Strategy Conference. In 2017, Japan presented a three-stage roadmap for AI industrialization to establish an AI and eco-system that combines all economic and social dynamics <Table 4>.

Table 4. Japan's AI industrialization roadmap[32].

Phase 1(~2020)	Development and utilization of data-driven AI within various domains
Phase 2(2020~2025)	Popular use of AI and data developed beyond the domain
Phase3(2025~2030)	Building an AI ecosystem that connects multiple domains

Japan established nine guidelines for AI development in 2017 to improve AI benefits and prevent risks<Table 5>. In particular, Japan is actively researching robots in the defense AI field. In Japan, ZMP, a robotics startup company, developed an unmanned security robot called Pastor equipped with AI and put it into the factory and used it to sterilize places that reach a lot of employees, such as elevator buttons and railings to prevent COVID-19[33]. This robot can be used to safely perform difficult mission for people to access on the battlefield. Also, Japan has developed an image analysis AI that measures the number and density of people reflected in-camera images at high speed and uses it to prevent COVID-19[34]. If this multi-target cognitive image analysis AI is applied to combat robots in the field, it can be used to identify multiple targets or targets of special interest.

Table 5. Japan's AI development principles and main contents[35].

Development principles	Major contents
The principle of linkage	Developers pay attention to the interoperability of AI systems
The principle of control	Developers pay attention to the possibility of control of AI systems
The principle of safety	Developers consider that the AI system does not harm the lives of users and third parties through actuators
Security principle	Developers should pay attention to the safety of AI systems
The principle of the privacy	Developers care to prevent the privacy of users and third parties from being infringed by the AI system
The principle of ethics	Developers respect human dignity and individual autonomy in developing AI systems
Principle of user support	Developers are considerate to enable AI systems to support users and provide users with the right choice

The principle of responsibility	Developers try to fulfill their responsibilities to stakeholders, including users

3.4. The Russia

Russia is promoting research and development with a focus on enabling AI robots to participate independently in combat missions in preparation for future wars. Russia plans to create a robot unit consisting of robot weapons and soldiers by 2025. Over the past few years, Russia has developed the unmanned ground vehicle Uran-9 and tested its equipment in Syria through a field trip. Uran-9 is an unmanned ground vehicle(robot tank) to be developed for combat in urban areas and carried out an autonomous maneuver based on an AI system and carried out a mission to cover infantry forces with automated guns and machine guns. Russia unveiled its stealth unmanned fighter Grom model at Army-2020, an unmanned stealth fighter capable of performing information collection, reconnaissance, hitting, and electronic warfare with an escort of a single or manned Sukhoi-35 fighter or Sukhoi-57 stealth fighter. It is also known as the highest-speed 1,000Km, a full-weight 2,000kg operation radius of 700km and above an altitude of 12Km.

Russian Armed Forces boast a full lineup of AI-based weapons, such as UAV(unmanned Aerial Vehicles), fighter jets, and underwater robots. In 2018, Putin announced that Russia had developed an unmanned deep-sea vehicle that is capable of global-range travel and can carry nuclear weapons[36]. Tecmash company has been incorporating AI into the volley fire systems in 2019. Putin said that "AI is being rigorously introduced and used in combat training, which dramatically boosts the capabilities of armed units and subunits." In Russia, autonomous aerial vehicles are the most promising areas for the introduction of AI and its military use <Table 4>[37]. The number of UAVs in the Russian Army is approximately more than 1,900 units in 2018. In 2019, Russia has developed the S-70 Okhotnik-B heavy combat UAV which is likely capable of carrying weapons and striking both air and land targets. Russia is going to develop an experimental model of neural network development, training, and implementation for the new generation of AI military systems(code name "Kashtan")[38]. The military arena is one of the strongest in terms of developing Russian AI technologies on Robotics, supercomputers, and information security <Table 6>.

Table 6. Division of combat robots' generation[39].

First-generation robots	They have the software and remote control that can only function in an organized environment
Second-generation robots	They are adaptive to changes in their environment, having a kind of sensory organs and an ability to function in a random environment
Third-generation robots	They are smart robots equipped with an AI-based control system

Russia is extending its capabilities, like reconnaissance and surveillance, patrolling, fire support, delivery of ammunition and medevac, installation of minefields and demining, setting smoke screens, and even mobile audio propaganda. Russia is going to increase the effectiveness of combat systems through the use of AI technologies.

4. Implications to the ROK's Building of AI-based Defense System

4.1. AI defense applications in major Northeast Asian states' implications towards the ROK
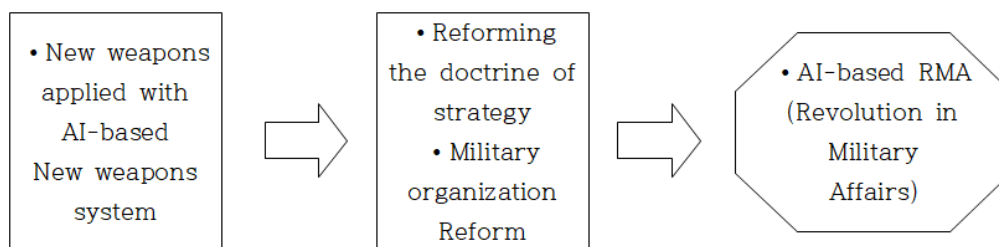
As the future battlefield environment changes rapidly, there is a need to secure AI capabilities and use them as a driving force for future military innovation to actively cope with them. If a war breaks out between countries with military robots and countries that do not, countries with robots will only lose money, but countries that have not will be sacrificing precious life and money together. Countries with robot troops can have the upper hand on the battlefield over countries that do not have

them, so many countries are expected to do their best to develop military robots.

Reforming operational doctrine and organizational reform using new AI technologies will enable military innovation to be achieved and eventually gain an upper hand on the battlefield <Figure 1>.

Figure 1. Military innovation by AI technology[40].

The ROK is facing North Korea's nuclear and missile threats, threats from space, and threats from neighboring countries. Therefore it is necessary to utilize AI capability in military functions in the areas of mission command, movement and maneuver, fires, protection, intelligence, and special operations[41]. AI can be applied and utilized to support C4I, information, firepower, maneuvering, protection, and operational support <Table 7>.

Table 7. AI defense utilization field[42].

Field	Major contents
C4I	Intelligent command decision support system, AI-based real-time M&S and war game system, intelligent information center, super-connected and super-intelligent network, etc.
Information	Intelligent military information management system(smart MIMS), intelligent cyber and electronic warfare attack/defense systems, etc[43].
Firepower	Intelligent bullets using AI technology, intelligent target detection radar, intelligent shooting command control system, etc.
Maneuver	Intelligent warrior platforms, intelligent combat suits, AI-based autonomous and swarming systems, etc.
Protection	Intelligent cyber protection systems, intelligent cyber warfare technology development, intelligent scientific boundary systems, command design, and intelligent protection systems of weapon systems.
Operational support	Intelligent synthetic field training system(LVCG), AI-based command decision support system, AI military instructor, AI-based training simulator/field training system, maintenance prediction system/bomb storage management system, intelligent material replenishment/stock management system, intelligent safety management information system/ remote treatment system, AI-based manpower acquisition, personnel management system, etc.

Based on major projects being carried out by AI powers such as the U.S. China, Japan, and Russia, the areas where AI can be applied in future fields are cybersecurity, military support, target identification, threat monitoring, situational awareness, battlefield healthcare, simulation training systems, and unmanned autonomous combat systems <Table 7>[44].

Table 8. Current status of national defense application of AI[45].

Division	Major contents
U.S	Delivery of the product of the unmanned submarine 'Sea Hunter' in early 2019
Japan	Active research on robots is underway in the defense AI field

PRC	Unmanned AI submarines will be deployed by 2021 to carry out various operations such as reconnaissance, ambush, mine laying, and suicide attacks on their own
Russia	R&D is being pursued with a focus on enabling AI robots to participate independently in combat missions

4.2. The ROK's AI applications to national defense

AI technology is applied to the public sector to unman or reduce existing personnel. In the case of national defense, it focuses on the use of electronic information systems such as surveillance, reconnaissance, command control communication, and cyber. In particular, the ROK's AI technologies such as 'Papago', 'NUGU', and ' GenieTalk' can be used as a translator and used in multinational operations. Watson's AI can be adopted to infectious disease diagnosis/analysis technology and Lunit's AI medical image diagnosis technology is believed to be contributed to the advancement of the national defense medical system. AI such as 'Adam' of Saltlux can be applied to the development of decision-making systems related to command control.

Adam is an AI source technology through human brain analysis, which is an example of the combination of AI technology, VR, and AR technology. First, visualized remote command control of manned and unmanned weapons formation. Second, it can be used for tasks such as combat remote command control, optimal strategy, operation establishment support, combat experience in a virtual battlefield environment, and combat command practice.

AI is essential for monitoring(ISR), logistics, cyber operations, information operations, command and control, semi-autonomous and autonomous vehicles, and autonomous weapons systems. Building an intelligent platform and a defense intelligence command system in defense provides momentum for military innovation. AI's role in surveillance is to collect, process, and analyze vast amounts of data, so AI is expected to be particularly useful. In the military sector, AI is applied to aircraft preventive maintenance to diagnose the status of each aircraft and determine the timing of maintenance. ALIS, Lockheed Martin's autonomous munitions information system, is a kind of information infrastructure that sends information on the airplane status and maintenance of the F-35 aircraft to users and related engineers through a worldwide network.

By applying AI algorithms in the field of cyber operations, deep learning can detect any changes in network patterns and find comprehensive and active countermeasures against hacking. The Command Control field is expected to be used by AI to create a Common Operating Picture(COP) by converging data collected from sensors in all domains. In the semi-autonomous transport sector, AI can be combined with all vehicles, including fighter jets, drones, ground vehicles, and naval vessels, to make them operate semi-autonomously/autonomously. It allows the vehicle to identify the environment and turn around obstacles, to integrate sensor data to plan navigation, and to communicate with other athletes, enabling swarming. The field of autonomous weapons of mass destruction refers to a special kind of strike system that is equipped with AI, independently identifies targets using various sensors and computer algorithms without direct human control, and engages and hits targets with installed weapons.

4.3. The ROK's strategies for building AI-based national defense system

AI-based systems will contribute to deterrence structures as well as warfighting[46]. Currently, the ROK's accumulation of AI technology, the core technology of the fourth industrial revolution, is insufficient compared to neighboring countries. According to a report by the Korea International Trade Association, Korea's AI technology gap is deepening and has a small number of AI start-ups, experts, and talent compared to countries such as the U.S. China, and Japan. To respond to threats caused by neighboring powers, it is necessary to promote the capability of AI and the development of core technologies. The South Korean government is promoting the following national AI project roadmap to preoccupy the global market while fostering domestic AI-related industries[47]. Step 1(2016-2018): It is an AI development stage as a chat robot and a virtual assistant that can answer two-way questions and answers at the level of understanding language and video. Step 2(2018-2021): It is an AI stage that can provide decision-making support based on expertise and automatically report deci-

sion-making results, and it can act as a medical diagnosis and AI lawyer. Stage 3(2021-2026): It is a stage to develop AI that can understand a variety of expertise and support decision-making. At this stage, weather forecasting and traffic forecasting are possible.

To establish an AI-based defense system in the future, there is a need to pursue the following four things step by step in line with the national AI project. First, a mid-to-long-term AI power acquisition plan should be prepared based on technical requirements and cost analysis. Second, AI-based intelligent monitoring, command and control, information, firepower, maneuvering, and protection capabilities are required. It also needs to specify the role/function makeup of the control tower. Third, the ability to support AI-based operations should be expanded by creating an ecosystem of defense AI clusters through industry-academic cooperation. Fourth, AI autonomous combat system capabilities should be strengthened to achieve battlefield superiority in the mid-to-long-term.

To this end, the direction of policy and institutional improvement should pursue improvements in the system for the rapid acquisition of Korean convergence technology and form a public-private-military consultative body for mid-to-long-term human resource development, technology development(R & D), and AI development. Also, the establishment of the defense AI platform should be pursued by continuously discovering tasks in combat preparation, barracks management, and education and training.

5. Conclusion

This article intends to suggest the direction of Korea's AI defense building after analyzing the efficiency of AI in carrying out future wars and discussing the implications of AI militarization by neighboring countries in Northeast Asia to Korea. As a result of examining the defense applications of the AI of neighboring countries, the implications for Korea are summarized as follows. To establish an AI-based defense system in the future, first, mid-to-long-term AI power acquisition plans should be prepared. Second, AI-based intelligent surveillance, command control, information, firepower, maneuvering, and protection capabilities must be reinforced.

Third, we need to expand our ability to support operations based on AI. Fourth, AI autonomous combat system capability should be strengthened to achieve battlefield superiority. To respond to the strengthening of AI capabilities of neighboring powers in the changing security environment of Northeast Asia, the ROK should also use AI as a driving force for future military innovation. In particular, AI can cause social and ethical problems, both large and small, if proper countermeasures against abuse and malfunction are not prepared. To minimize the negative impact of AI technology, by maximizing the positive impact, and to have technological competitiveness internationally, institutional readjustment and measures to foster technology and human resources should be prepared at the national level. Strengthening AI capability against strong neighboring countries will be an alternative to prepare for uncertain future security environments. We need to strengthen AI against neighboring countries' threats. To improve military AI services, first, we have to input exact maintenance data of military assets to minimize the maintenance period. Second, the development of large-capacity tactical network technology is need for the effective operation of the AI combat system. Third, it is necessary to improve the ability to utilize AI by strengthening the competitiveness of technology through private-government-military circles' cooperation.

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7. Appendix

7.1. Authors contribution

	Initial name	Contribution
Author	SL	-Set of concepts ☑
		-Design ☑
		-Getting results ☑
		-Analysis ☑
		-Make a significant contribution to collection ☑
		-Final approval of the paper ☑
		-Corresponding ☑
		-Play a decisive role in modification ☑
		-Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑
		-Participants in Drafting and Revising Papers ☑
		-Someone who can explain all aspects of the paper ☑

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South Korean Government's CRISIS MANAGEMENT LEADERSHIP: Focusing on the Cases of North Korea's Second and Sixth Nuclear Tests

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Abstract

Purpose: In the event of a crisis caused by North Korea's nuclear development, tasks of crisis management leadership to protect national interests and prevent the escalation of the crisis are critical issues in national security. This study theoretically analyzes and evaluates crisis management leadership of South Korean Lee Myung-bak government during North Korea's second nuclear test in 2009 and Moon Jae-in government during North Korea's sixth nuclear test in 2017. Based on this, it seeks to theoretically analyze and evaluate tasks of crisis management leadership shown by both governments, and to derive policy implications for successful crisis management leadership.

Method: A case study method is conducted to analyze the security crisis cases triggered by the North Korean nuclear tests and to examine leadership tasks of crisis management of South Korean governments during the two nuclear tests. Arjen Boin and Paul 't Hart define crisis management leadership as strategic tasks that encompass all activities related to the crisis management stages. In order to analyze tasks of crisis management leadership, this study utilizes and analyzes three factors suggested by Arjen Boin, Paul 't Hart, Eric Stern and Bengt Sundelius: sense making(crisis perception), decision making and coordinating, and mean making(crisis communication).

Results: The Lee Myung-bak and Moon Jae-in governments recognized nuclear tests were serious provocations threatening the security of the Korean Peninsula, Northeast Asia and the international community. However, there were no early warnings for the two nuclear tests. Immediately after the nuclear tests, both governments promptly held the NSC meeting and employed political, diplomatic, and military countermeasures, while strengthening the ROK-U.S. combined defense posture. They provided prompt information on the crisis situation to the public, and delivered a resolute statement to North Korea to convey South Korea's resolution. Efforts were made to secure support for South Korea's policy toward North Korea, focusing on the international community including the U.S., Japan and the United Nations.

Conclusion: In order to carry out successful leadership tasks of crisis management, crisis managers must accurately grasp the evolving nature of the crisis and the NSC must be established in advance as an institutional crisis management system for effective crisis decision-making, and the NSC must be actively operated. Moreover, it is necessary to carry out active crisis communication activities to mobilize national power and draw support from the people at the domestic level, and to strengthen support and cooperation from allies and the international community at the international level. In a crisis situation where the instability and vulnerability of the country increases, the multi-dimensional tasks of crisis management leadership should be carried out by mobilizing all capabilities at the diplomatic, security, military, and intelligence dimensions.

[Keywords] South Korea, Crisis Management Leadership, North Korea, Second Nuclear Test, Sixth Nuclear Test

1. Introduction

North Korea's development of nuclear weapons is a serious challenge that threatens the security of the Korean Peninsula, Northeast Asia, and the international community and undermines the foundation of an international non-proliferation regime. The North Korean nuclear issue, which was triggered by North Korea's declaration of withdrawal from the 'Treaty on the Non-Proliferation of Nuclear Weapons(NPT)' on March 12, 1993, made progress after the '1994 U.S.-North Korean Agreed Framework', when North Korea's plutonium nuclear facilities were frozen for several years. However, in 2002, due to North Korea's suspicion of developing a nuclear enriched uranium and lifting the freeze on its plutonium nuclear facilities, the 'Geneva Agreement' was abandoned after eight years, and the North Korean nuclear crisis was heightened again.

In an attempt to resolve the North Korean nuclear issue through dialogue, the six-party talks were launched in 2003 in which South Korea, North Korea, the U.S., China, Japan and Russia participated. Through this, the '9/19 Joint Statement' in 2005, the '2/13 Agreement' in 2007, and the '10/3 Agreement' were made, and the North Korean nuclear issue was expected to be solved. However, the six-party talks have not been held since December 2008 due to differences in views on the verification of nuclear materials and nuclear facilities.

Despite this process, North Korea pursued the construction of a 'strong and prosperous nation' through nuclear armament, and conducted the first nuclear test on October 9, 2006, and the second nuclear test on May 25, 2009. After that, North Korea conducted its third nuclear test on February 12, 2013, and on March 9, 2013 it declared 'permanent the status of a nuclear state'. In spite of several warnings from the international community in 2016, North Korea conducted the fourth nuclear test on January 6, 2016 and the fifth nuclear test on September 9, 2016 to advance nuclear technology. On September 3, 2017, North Korea conducted its sixth nuclear test and announced the complete success of the test of hydrogen munitions for ICBM-class ballistic missiles, which raised tensions on the Korean Peninsula.

As the security environment on the Korean Peninsula deteriorated due to the North Korean nuclear issue, the atmosphere of dialogue began in 2018. In the Moon Jae-in government, the first inter-Korean summit was held on April 27, 2018 and the second inter-Korean summit on May 26, 2018. In addition, on June 12, 2018, the first U.S.-North Korea summit in Singapore was held, providing an opportunity for a diplomatic solution to the North Korean nuclear issue. The leaders of the South Korea, North Korea and the U.S. stipulated their commitment to complete denuclearization of North Korea through the 'April 27th Panmunjom Declaration' and the 'June 12th U.S.-North Korea Summit Joint Statement'. However, although the 2nd U.S.-North Korea Summit was held in Hanoi on February 27-28, 2019, the two countries could not reach an agreement on the North Korean nuclear issue[1].

In terms of South Korea's security, North Korea's nuclear tests and continued nuclear development on the Korean Peninsula are the most serious crisis. In the event of a crisis caused by North Korea's nuclear development, tasks of crisis management leadership to protect national interests and prevent the escalation of the crisis are critical issues in national security. In particular, in a crisis situation in which bilateral competition and shared danger are mixed, the crisis management leadership of national leaders is put to the test and its true value is revealed. The success and failure of crisis management leadership are important variables that affect the protection of national interests and the legitimacy and credibility of the regime. In the event of a crisis, policy makers should accurately recognize and evaluate the crisis situation. Moreover, a crisis management system such as the 'National Security Council(NSC)', which is suitable for the characteristics of the national security environment and policy-making process, should be established in advance and actively operated. Crisis communication activities must be carried out to draw support from the public, unity of national power, and support from the international community.

Against this background, this study aims to examine the behaviors of crisis management of South Korean Lee Myung-bak government during North Korea's second nuclear test in 2009 and Moon Jae-in government during North Korea's sixth nuclear test in 2017. Based on this, it seeks to theoretically analyze and evaluate tasks of crisis management leadership shown by both governments, and to de-

rive policy implications for successful crisis management leadership. To this end, a case study method is conducted to analyze the security crisis triggered by the North Korean nuclear test and to examine leadership tasks of crisis management of South Korean governments during two nuclear tests. In order to analyze tasks of crisis management leadership, this study utilizes and analyzes three factors suggested by Arjen Boin, Paul 't Hart, Eric Stern and Bengt Sundelius: 'sense making'(crisis perception), 'decision making and coordinating', and 'mean making'(crisis communication)[2].

2. Crisis Management Leadership: Theoretical Review and Analytical Framework

Renowned scholars of research on crisis management leadership, such as Arjen Boin and Paul 't Hart define crisis management "leadership as a set of strategic tasks that encompasses all activities associated with the stages of crisis management"[3]. They also define crisis management leadership as "overall direction of crisis responses and the political process surrounding these responses"[2]. They argue that tasks of crisis management leadership encompasses 'sense making'(crisis perception), 'decision making and coordinating', and 'mean making'(crisis communication)[2].

First, appropriate and proactive responses to a particular crisis depends on a prompt and accurate 'sense making' of the crisis situation. To this end, early warning to recognize crisis signals in advance, identifying the nature, characteristics, and development patterns of the crisis situation, and determining the impact should be carried out quickly and accurately. The task of 'sense making' is "collecting and processing information that will help crisis managers to detect an emerging crisis and understand the significance of what is going on during a crisis"[2]. It is important for policy makers to grasp and evaluate the crisis situation and to accurately recognize the crisis situation to judge the development process of the crisis event.

Second, in the event of a crisis, 'decision making and coordinating' should be made to find a strategic countermeasure in consideration of political, diplomatic, and military factors based on a previously established crisis management system such as the NSC . Policy decisions are required to seek countermeasures to maximize the interests of the country while minimizing threats from hostile states and forces, while not expanding disputes or developing war. The supreme policy maker should play a central role in the process of setting crisis objectives, reviewing, evaluating, and selecting countermeasures against diplomatic and military crises, and determined countermeasures must be effectively implemented[4]. The task of 'decision making and coordinating' is "making critical calls on strategic dilemmas and orchestrating a coherent response to implement those decisions"[2]. In terms of crisis decision-making, policy decisions through inter-ministerial coordination and political judgment should be made in situations where intelligence and resources are insufficient in a crisis situation where uncertainty is mixed[3].

Third, in the process of crisis management, 'mean making'(crisis communication) of the national leadership must be developed to create an environment favorable to the national interests and resolve the crisis. Crisis management leaders must present a perspective on the characteristics of the immediate crisis, communicate with political actors, the media, and the public, and inform them the government's crisis response plans and execution process. In addition, it is necessary to clearly communicate its position, intention, and resolution to hostile countries through crisis communication channels so that there is no misperception[4]. The task of mean making is to "offering a situational definition and narrative that is convincing, helpful, and inspiring to citizens and responders"[2]. In the crisis communication stage, leaders must persuasively communicate the nature of the crisis, development of the situation, vital national interests, and countermeasures to the public and the international community[3].

In this context, in a crisis situation where threats to national security, uncertainty and urgency are inherent, policy makers accurately appraise the threat and understand the characteristics of the crisis. Through the operation of the crisis management system, crisis policy decisions must be made for

an appropriate combination of two conflicting objectives between protection of national interests and avoidance of measures that could trigger undesired escalation[5]. In addition, domestic and international communications must be carried out in order to obtain public support and international cooperation.

3. North Korea's Second Nuclear Test and the Lee Myung-bak Government's Crisis Management Behavior

3.1. North Korea's second nuclear test(2009.5.25)

Since the inauguration of the Lee Myung-bak government, North Korea has repeatedly insisted that it intends to strengthen its self-defense nuclear deterrence by mobilizing various media to criticize the South Korean government's policy toward North Korea and the posture of the ROK-U.S. alliance. North Korea's allegations were intensified after the UN Security Council issued a chairman's statement restoring 'Resolution 1718' on North Korea's long-range missile launch. In a statement from the Ministry of Foreign Affairs on April 14 that condemned the UN Security Council's statement, North Korea announced that it would strengthen its self-defense nuclear deterrence, with the refusal of the six-party talks, continuous firing of missiles, and restoration of the disabled nuclear facilities[6].

After that, North Korea conducted its second nuclear test at 09:54 on May 25, 2009 at Punggye-ri, Gilju-gun, North Hamgyeong Province. The second nuclear test was more than five times stronger than the first nuclear test. During the first nuclear test in October 2006, the magnitude of the earthquake was 3.6 and the explosive power was 0.8kt, but the magnitude of the second nuclear test was 4.4, which requires 4.5kt of explosive power to generate it. On May 25th at 11:59, North Korea announced, "as part of measures to strengthen the Republic's self-defense nuclear deterrent to all sides, it successfully carried out another underground nuclear test. This nuclear test proceeded safely at a new higher level in explosive power and control technology"[7].

3.2. The Lee Myung-bak government's crisis management behavior

The Lee Myung-bak government's policy toward North Korea was to promote 'Mutual Benefit and Common Prosperity', and pursue a 'Principled Engagement Policy' through a grand bargain based on 'Denuclearization, Openness, and Vision 3,000 initiative', while strengthening the ROK-U.S. alliance. Based on these policies, perception of North Korea was that the existing 'vicious cycle(regression/provocation → compensation/support → relationship improvement)' should be terminated[8].

The Lee Myung-bak government announced in a government statement on May 25, 2009, immediately after the North Korean second nuclear test, that the nuclear test was a serious threat to peace and stability not only on the Korean Peninsula, but also to Northeast Asia and world, and a serious challenge to the international non-proliferation regime. It was defined as a provocation that cannot be tolerated. It urged North Korea to abandon its nuclear weapons and all related plans and immediately return to the 'Treaty on the Non-Proliferation of Nuclear Weapons(NPT)' system to faithfully implement international norms as a responsible member of the international community[8].

On May 25, at 13:00, President Lee Myung-bak convened the National Security Council(NSC) meeting to review the crisis situation and countermeasures with the Ministers related Foreign Affairs and Security, and ordered to maintain a strong security posture so that the people would not be disturbed. Meanwhile, at 16:00 on May 25, President Lee held a telephone conference with Japanese Prime Minister Taro Aso regarding the second North Korean nuclear test and agreed to work closely with the international community as well as Korea and Japan[9]. The Ministry of Unification

announced, "it has decided not to allow Korean people to visit North Korea for the time being, except for visiting the Kaesong Industrial Complex." On this day, the Ministry of National Defense and the Joint Chiefs of Staff(JCS) ordered all forces to strengthen their alert posture to prepare for possible North Korean provocations at the West Sea's 'Northern Limit Line(NLL)' and the 'Military Demarcation Line(MDL)' within the DMZ[10].

For 20 minutes from 08:30 on May 26, the day after North Korea's second nuclear test, President Lee was on the phone with U.S. President Obama. President Lee stressed that the pattern of 'nuclear test → resume dialogue → compensation → provocation' should not be repeated, and President Obama reaffirmed the necessity of a strong resolution against North Korea and the U.S. nuclear umbrella guarantee[9]. In May 26, 2009, the ROK government announced its official participation in the 'Proliferation Security Initiative(PSI)', immediately after North Korea's second nuclear test, and thus actively participated in international efforts to stop proliferation of 'Weapons of Mass Destruction(WMD)'[11][12].

In response to the second nuclear test, the Lee Myung-bak government strongly criticized North Korea's nuclear test, and diplomatically cooperated with the international community and allies to emphasize the principle of denuclearization. In addition, the ROK government led international sanctions by leading the active adoption of 'UN Security Council Resolution 1874' on June 12, 2009, with the content of strengthened sanctions against North Korea[8].

4. North Korea's Sixth Nuclear Test and the Moon Jae-in Government's Crisis Management Behavior

4.1. North Korea's sixth nuclear test(2017.9.3)

Even after the inauguration of the Moon Jae-in government in May 2017, North Korea continued to engage in military provocations against South Korea. From the launch of the Hwaseong-12 type 'Intermediate-Range Ballistic Missile(IRBM)' on May 14, 2017, to the launch of a Hwaseong-12 type missile in the Sunan area of Pyongyang until August 29, it launched 9 missiles[13][14]. Under these circumstances, North Korea's sixth nuclear test was conducted on September 3, 2017 at 12:29 at Punggye-ri, Gilju-gun, North Hamgyeong Province. The sixth nuclear test was calculated as an earthquake scale of 5.7 with an explosive power of about 50,000 tons of TNT. It was the most powerful of all nuclear tests[15][16].

At 15:30 on September 3, North Korea claimed that it had achieved 'complete success' in the 'Intercontinental Ballistic Missile(ICBM)' equipped hydrogen munition test through a major reports by the Korean Central News Agency, the Central Broadcasting Station and Pyongyang Broadcasting Station. On September 3, the Nuclear Weapons Research Institute stated in a statement, "it was conducted to review and confirm the accuracy and reliability of the newly researched and introduced power control technology and internal structure design plan for the production of hydrogen munitions to be mounted on the ICBM combat unit(warhead). This success was a very significant opportunity to achieve the goal of the completion stage of the completion of the national nuclear armed forces"[6].

4.2. The Moon Jae-in government's crisis management behavior

The Moon Jae-in government's policy on the Korean Peninsula was set as the three main objectives: ① resolution of the North Korean nuclear issue and establishment of permanent peace, ② development of sustainable inter-Korean relations, ③ realization of a new economic community on the Korean Peninsula. The four major strategies to achieve this are: ① taking a step-by-step and comprehensive approach, ② tackling the issues of inter-Korean relations and North Korean nuclear threat simultaneously, ③ ensuring sustainability through institutionalization, ④ laying the founda-

tion for peaceful unification through mutually beneficial cooperation[17][18].

On September 3, 2017, immediately after the sixth North Korean nuclear test, the NSC plenary meeting held at 13:30 presided over by President Moon Jae-in evaluated the situation related to the nuclear test and discussed countermeasures. The meeting was attended by the Prime Minister, the Minister of Foreign Affairs, the Minister of Unification, the Minister of Defense, the Director of the National Intelligence Service, the Minister of the Interior and Safety, the Chief of the Office of the President, the Head of the National Security Office, and the 1st and 2nd Deputy Heads of the National Security Office. President Moon instructed to establish the strongest countermeasures with the international community for subsequent provocations such as the launch of an ICBM-class missile. The NSC meeting also decided to seek all diplomatic measures, including forcing North Korea to abandon its nuclear and missile programs in a complete, verifiable and irreversible way, and pursuing a resolution of the UN Security Council to completely isolate North Korea. The Head of National Security Office discussed countermeasures through phone calls with U.S. National Security Advisor two times before and after the NSC meeting, and to discuss strong cooperation measures through the phone calls between the presidents of South Korea and the U.S. as soon as possible[15].

Meanwhile, the ROK Ministry of Defense and the Joint Chiefs of Staff(JCS) convened a crisis action team immediately after seismic waves were detected in North Korea. The JCS instructed all forces to raise their surveillance and alertness postures against North Korea, and announced that they are closely monitoring the movements of the North Korean military under ROK-U.S. cooperation. At 17:30 on September 3, the head of the Joint Operations Division of the JCS also issued a warning statement against North Korea, "the ROK-US alliance, which is working closely more than ever before, has sufficient capacity to punish North Korean provocations and we would show action by the allied forces response". The Ministry of Unification also held an emergency meeting presided over by Minister to discuss countermeasures[15][19]. The Ministry of Foreign Affairs also shared intelligence with the U.S., Japan, and China, and released a government statement through a spokesperson saying, "it is an obvious violation of the resolution of the UN Security Council and strongly condemn the North Korean nuclear test, and it is never tolerated"[1][15].

On September 12, through the Korean Central News Agency and the Rodong Sinmun, North Korea claimed that "the reliance on foreign powers is a path of disastrous destruction and the inter-Korean relations has deteriorated further" in response to the South Korean government's convocation of the NSC against the sixth nuclear test, strengthening cooperation in sanctions and pressure against North Korea, and condemning the ROK National Assembly[6][20].

5. The Analysis of South Korean Government's Crisis Management Leadership

Based on the analysis of the crisis management behaviors of the Lee Myung-bak government during the second nuclear test and the Moon Jae-in government during the sixth nuclear test in North Korea, tasks of the ROK government's crisis management leadership are analyzed and evaluated in three aspects: sense making(crisis perception), decision making and coordinating, and mean making(crisis communication).

5.1. Sense making(crisis perception)

In the event of a crisis situation, the issue of crisis perception and whether the signals and occurrences of the crisis have been predicted and identified in advance are important variables in crisis management. Unpredictable, sudden, and rapidly changing crisis situations can develop into situations where control becomes difficult if they are not properly and clearly understood[2][21]. Therefore, in order to perform an effective sense making task, it is required to determine the changing crisis situation through intelligence collection, sharing, and dissemination based on the operation of an early warning system, to identify the development of the situation, to analyze potential results,

and to raise the need for specific intelligence[22][23].

Regarding sense making(crisis perception), at the time of North Korea's second and sixth nuclear tests, the Lee Myung-bak government and the Moon Jae-in government equally recognized that North Korea's nuclear developments were significant challenges to the Korean Peninsula, Northeast Asia, and international peace and stability. However, the difference was that although the Moon Jae-in government issued a warning statement to North Korea about the sixth nuclear test, it recognized that the North Korea's 'Intercontinental Ballistic Missile(ICBM)' had not yet reached the completion stage, and that it did not cross the 'red line' which refers to the threshold that one country can endure as much as possible with the ban set not to cross the other country[7].

With respect to the detection of crisis signals, it was equally difficult for South Korea to identify signals of North Korea's second and sixth nuclear tests, and early warnings were not implemented. Therefore, it is desirable to identify signals of nuclear crisis in advance and promptly implement early warnings through reinforcement of activities for 'imagery intelligence(IMINT)' by intelligence agencies. It also presents a lesson that it is important to judge and share accurate intelligence about North Korea's strategic intentions and military challenges on the Korean Peninsula, where numerous local provocations are occurring, and to strengthen and cooperate with intelligence agencies and the military's early warning system.

5.2. Decision making and coordinating

Crisis policy decisions are usually made by the highest level leadership of the country. Crisis management leaders must harmoniously coordinate the application process of crisis response measures, carefully consider policy decisions, and ensure that policy decisions and enforcement are carried out through appropriate procedures. Meanwhile, in a crisis situation, intense cooperation among a variety of organizations is required at the vertical and horizontal level. Therefore, crisis management leaders must identify, observe, and evaluate vertical and horizontal cooperation, and if problems arise in cooperation, they must promote active cooperation or intervene in the cooperation process[21][24].

In addition, formal policy-making organizations such as the NSC, which have been systematically established to respond to crises, enable timely and proactive responses. Depending on the crisis, small informal policy-making groups are sometimes used. For successful crisis management, not only the effective establishment and operation of a crisis management system that serves as a 'command center', but also the policy-making process and dynamics within the crisis management system are significant factors[2][25].

According to the case analysis, the Lee Myung-bak government and the Moon Jae-in government promptly held meetings of the NSC immediately after North Korea's second and sixth nuclear tests to assess crisis situations and discuss countermeasures with foreign affairs and security officials. Following the directives of the NSC, security related ministries including the Blue House, the Ministry of Defense, the Ministry of Foreign Affairs, and the Ministry of Unification swiftly executed countermeasures against North Korea to strengthen the ROK-U.S. combined defense posture along with political, diplomatic and military measures.

In particular, under the Lee Myung-bak government, the ROK-US Combined Forces Command(CFC) raised its surveillance condition from WATCHCON 3 to WATCHCON 2 after the second nuclear test. Moreover, it decided to participated in the PSI for non-proliferation of WMD, a move which the North has repeatedly warned would be construed as a declaration of war. It cooperated with the international community led by United Nations to derive strong international sanctions against North Korea.

As for comparing aspects of crisis management strategy, the Lee Myung-bak government employed coercive bargaining measures against North Korea, while the Moon Jae-in government, which adopted a moderate policy toward North Korea, responded to the crisis from a crisis control perspective. In this connection, in the context of a security crisis in which shared danger and bilateral com-

petition are inherent, policy makers have to make very difficult policy decisions because they fall into the fundamental dilemma of crisis management between avoidance of unwanted crisis escalation and protection of national interests. Therefore, for successful crisis management, it is important to set crisis objectives suitable for a specific crisis situation and to implement crisis control and coercive bargaining measures complementary manner. Moreover, a proper combination and balanced application of political, diplomatic, and military measures are required.

Meanwhile, it is desirable direction for the Moon Jae-in government to expand and reorganize the National Security Office and strengthen the overall function of crisis management. However, in order to improve the crisis management system centered on the National Security Office and strengthen the role of the NSC, it is necessary to reorganize the National Security Office into a working division under the NSC and strengthen the NSC's crisis management capabilities.

5.3. Mean making(crisis communication)

When a crisis occurs, the public wants to know how state leaders recognize the situation and what countermeasures are taken to resolve the crisis. Crisis management leaders must timely and reliably deliver information related to the progress and problems of crisis events, core values to be defended, and countermeasures through the crisis communication process[21][26]. A stable and reliable direct and indirect crisis communication channels are also needed to prevent accidental collisions through misperceptions that may occur during the process of conveying intentions and resolutions to other countries.

In this connection, immediately after North Korea's second and sixth nuclear tests, the Lee Myung-bak and Moon Jae-in governments delivered resolute statements to North Korea that nuclear test were unacceptable as serious challenges to peace and stability on the Korean Peninsula. Under the ROK-U.S. combined defense posture, cooperation with the U.S. were reinforced, and intelligence sharing and cooperation with major allies were strengthened.

In terms of mean making(crisis communication), both governments had tried to deliver crisis solutions that were favorable to the national interests while drawing support and cooperation from allies, protecting the national interests that had been violated by North Korea, and preventing the escalation during nuclear crises. In addition, it is evaluated that the Lee Myung-bak and Moon Jae-in governments tried to relieve the public's security anxieties and promote communications through prompt disclosure of information to the public and strengthening security posture against the North Korean nuclear tests.

6. Conclusion

In the event of a crisis, a threat to the highest security value of the country arises, uncertainty increases, and urgent decisions must be made. In accordance with the rapid changes in the security environment in the 21st century, various threats such as military provocations, asymmetric threats such as nuclear and missile, and non-traditional contingencies are increasing. Faced with these threats, national leaders and key policy makers of major countries are at a critical crossroad to perform their tasks of crisis management leadership.

In particular, on the Korean peninsula, while the unstable security environment in which the North Korean nuclear and missile threats persist, policy makers in the event of a crisis have reviewed many variables to achieve conflicting crisis objectives of minimizing risks and losses while protecting national interests. Crisis decision-making must be made within a limited time and the countermeasures should be quickly implemented.

In order to carry out successful leadership tasks in crisis management, crisis managers must accurately grasp the evolving nature of the crisis, and the NSC must be established in advance as an institutional crisis management system for effective crisis decision-making, and the NSC must be actively operated. Moreover, it is necessary to carry out active crisis communication activities to mobilize

national power and draw support from the people at the domestic level, and to strengthen support and cooperation from allies and the international community at the international level. Leadership tasks in crisis management show a very different pattern from tasks of diplomatic and security policy making routinely performed during peaceful times. In a crisis situation where the instability and vulnerability of the country increases, the multi-dimensional tasks of crisis management leadership should be carried out by mobilizing all capabilities at the diplomatic, security, military, and intelligence dimensions.

The findings of the case studies of South Korean crisis management leadership during North Korea's two nuclear tests in 2009 and 2017 are as follows. The Lee Myung-bak and Moon Jae-in governments recognized nuclear tests were serious provocations threatening the security of the Korean Peninsula, Northeast Asia and the international community. However, there were no early warnings for the two nuclear tests. Immediately after the nuclear tests, both governments promptly held the NSC meeting and employed political, diplomatic, and military countermeasures, and while strengthening the ROK-U.S. combined defense posture. In addition, they provided prompt information on the crisis situation to the public, and delivered a resolute statement to North Korea to convey South Korea's resolution. Efforts were made to secure support for South Korea's policy toward North Korea, focusing on the international community including the U.S., Japan and the United Nations.

Since the second U.S.-North Korea Summit in Hanoi, Vietnam in February 2019, there has been no tangible results on the North Korean nuclear issue. Based on the implications and lessons learned through empirical research on the leadership tasks in crisis management on the North Korean nuclear issue, efforts should be made to make substantial progress in the complete denuclearization of the Korean Peninsula and the settlement of permanent peace.

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8. Appendix

8.1. Authors contribution

	Initial name	Contribution
Author	TY	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑ -Play a decisive role in modification ☑ -Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

8.2. Funding agency

International Journal of Terrorism & National Security

A Study on of Salafi Jihadist Groups: Focusing on BOKO HARAM

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Abstract

Purpose: Islamic terrorist groups have repeatedly been created and disappeared in the Middle East, North Africa and Asia since the Muslim Brotherhood. These groups are created and extreme by a combination of factors such as political turmoil, economic inequality, ethnic conflict, and religious conflict in their home countries. The problem is that the terrorist group classified as the Salafi Jihadist wants to form a community based on religious ideology, but the means of realizing it is brutal terrorism. In this paper, we explore the generative background and features of Salafi Jihadism.

Method: To identify the Salafi Jihadist, we examine the origins and characteristics of Islamism, Wahhabism, and Salafism, and collect and analyze existing research papers and related institutional data on how Salafi Jihadist originated in Africa, especially why Boko Haram gained power in Nigeria.

Results: Nigeria is a large African country with a large population and natural resources, while economic growth has not developed proportionally. The invasion of Western imperialism and colonial rule resulted in economic distortions and failure of racial integration, which resulted in civil war, military extortion of power, and the activities of powerful terrorist groups of powerful terrorists.

Conclusion: The Sahel region of Africa, including Nigeria, is a repository of natural resources, but paradoxically, it is becoming a blood land due to the brutal competition for natural resources. Countries in these regions need democratic rule to integrate complex races, and greedy foreign intervention should be blocked. A fundamental prescription is needed to eliminate extremist forces advocating Salafism.

[Keywords] *Islamism, Wahhabism, Salafism, Salafi Jihadist, Boko Haram*

1. Introduction

Boko Haram gained much international attention in 2014 in the wake of the kidnapping of 270 female students from a dormitory in a remote village in Chibok. The group initially engaged in relatively mild activities, such as providing social welfare, but over time it carried out a series of targeted assassinations. After Yusuf's execution, Abubakar Shekau became the leader of Boko Haram and became an armed group. It did not take long for the terrorist strategy to change from targeted assassination to murder and kidnapping of soft targets. In 2018, Nigerian government troops were kidnapped by Boko Haram and rescued more than 1,000 women and children from captivity.

Boko Haram has launched a guerrilla attack, despite efforts by coalition forces in Nigeria and neighboring countries. During its time of strength, it controlled 20% of Nigeria's territory, and gradually expanded beyond its borders to Niger and Chad. It peaked in 2015 and lost power between 2016 and 2017, but its power has been growing again recently. In particular, near the Cameroonian border, Boko Haram regularly attacked, recruited some of Cameroon's agricultural groups to support them, and manipulated suicide bombings.

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Boko Haram also frequently used kidnapped students in Nigeria for self-destruction attacks. Boko Haram has continued to attack schools since 2009, expressing strong antipathy to Western-style education. Boko Haram attacked a university in the northeastern province of Yobe in February 2014, killing 59 male students, and two months later, he attacked a public school in Chibok, northeastern Borno, kidnapping 276 female students. Of the students kidnapped at the time, 57 escaped and 103 were released in negotiations with the government, but more than 100 are still missing.

Many of the kidnapped students were forced to marry rebels and were mobilized for self-destruction attacks if they refused. At that time, 76 people were rescued and at least 13 were missing. Boko Haram attacked a school in Yobe Province again in 2018, kidnapping 111 female students, and in 2020, he kidnapped 344 male students and released them. In November of the same year, workers who were harvesting rice were killed indiscriminately on a farm in the northeastern state of Borno. The reason for the killing of 110 workers is that they gave information about the location of Boko Haram to the government forces.

The pure cause of religious social construction is not found in the present day Boko Haram. The only way to survive is to let the world know their values through extreme acts and to survive through these tactics. Cruelty, whether terrorism or guerrilla warfare, is becoming more and more serious. Like ISIS, it has become self-controlled, unable to stop its evil acts against humans. It is important to break down the organization of jihadists, but efforts to heal the sick society are also important.

In this paper, we look at Salafi Jihadism and consider the extremization of Boko Haram, which is cultivated by this ideology.

2. Theoretical Background

2.1. Understanding Islamism, wahhabism and salafism

Islamism is an exclusive opposition to the influx of other religions and other cultures, emphasizing legitimacy from a religious perspective. Islamist groups aim to restore the religious spirit presented by the Islamic scriptures, reject secular politics, and eventually establish an Islamic community or Islamic political system. The second is to explain the nature of the group that asserts Islamism and carries out radical attacks, and to believe that Islamism, which radical groups claim, advocates religious fundamentalism, but has degenerated into an ideology for political domination. In this context, Islamism is not about restoring Islamic legitimacy, but rather about denial of the post-modern political system and political ideology for the establishment of their own new political system. Islamism rejects democratic politics and justifies violence. In principle, violence is not denied. The return to Islamic tradition, support for Sharia, is a fake idea, and aims for totalitarianism[1].

Moderate Islamism is the emerging Islamist discourses and movements which considered deviated from the traditional Islamist discourses of the mid-20th century. Moderate Islamism is characterized by pragmatic participation within the existing constitutional and political framework, in the most cases democratic institution.

Another form of Islamism has emerged as Salafism, and the progenitor of the modern Salafi movement is Wahhabism. And Wahhabism, or Salafism, has a great influence in Islamic society. Some extreme forces are claiming Salafism as a variant of Salafism[2].

Wahhabism was an Islamic doctrine and religious movement founded by Muhammad ibn Abd al-Wahhab(1703-1792). It is a reform movement in Islam to restore the pure worship of believers. Al-Wahhab launched a reform movement in the sparsely populated and remote Nazd region, eventually proposing political obedience with local leader Muhammad bin Saud and signing an agreement to protect the Wahhabi movement[3].

Until the final declaration of the Kingdom of Saudi Arabia in 1932, it continued its political and religious alliance with the Saudi royal family and the Wahhabi sect for the next 150 years. Today Wahhabism is the official religion of Sunni Islam in Saudi Arabia and is a state-sponsored sect.

The majority of Sunni and Shiites around the world disagree with the doctrine of Wahhabism, and

many Muslims accuse it of being an unacceptable sect[4]. Wahhabism has been criticized as the source of global terrorism. It has been criticized for inspiring ISIS ideology and stigmatizing Muslims who disagree with Wahhabism as renegades, causing division in Islamic society. It was also criticized for the destruction of saints, cemeteries, other Muslim and non-Muslim buildings and historical shrines under the influence of Wahhabism[5].

Salafism is based on the ideological proposition that the legitimacy of the political order under the influence of Wahhabism is derived from Islam[6]. The ultimate goal is to institutionalize the imitation of the antecedents of early Islamic history. However, many scholars and critics distinguish Wahhabi from Salafi. Wahhabism refers to the "conservative Islamic creed centered around Saudi Arabia," and Salafiya sees it as "a more general Puritan Islamic movement that has developed independently in many different times and places in the Islamic world." However, many people call Wahhabism a stricter and Saudi form of Salafism.

2.2. Salafi jihadism

The movement is sometimes divided into three categories: the largest group being the purists(or quietists), who avoid politics; the second largest group being the activists, who maintain regular involvement in politics; and the third group being the jihadists, who form a minority and advocate armed struggle to restore the early Islamic movement.
Purists are Salafists who focus on non-violent da'wah(preaching of Islam), education, and purification of religious beliefs and practices. Purists are Salafists who focus on non-violent da'wah(preaching of Islam), education, and purification of religious beliefs and practices. They refrain from a fierce campaign against the political system. They even tend to support dictatorships.

Salafi activists differ from Salafi Jihadists in avoiding violence and from Salafi Puritans in their involvement in modern political processes. Sharia should be applied to the political field and actively participate in peaceful political reform.
Salafism has become associated with literalist, strict and puritanical approaches to Islam. Western observers and analysts often, incorrectly, equate the movement with Salafi jihadism, a hybrid ideology which espouses violent attacks against those it deems to be enemies of Islam as a legitimate expression of Islam[7].

The main terrorist group leading the Salafi Jihadist is based in the Middle East, Southwest Asia, and North Africa. In North Africa, there are Muslim Brotherhood, Libyan Islamic Fighting Group, Qaeda In the land of the islamic Maghreb, Armed Islamic Group, Al-Mourabitoune, Boko Haram, Ansar al-Dine, Movement for Oneness and Jihad in West Africa(MUJAO), Al Shabaab.

The Salafi Jihadist terrorist groups have been created by various political and social and economic inequality situations in the base, and despite the various groups, ideological goals are not significantly different. Most of them argue that modern Muslims are corrupt and must return to the early Muslim way of life. And these groups support Salafism and violent jihad, which makes violent jihad a Muslim duty[8].

2.3. Salafi jihadist and terrorism

Terrorism is a tool activity to achieve a particular long-term and short-term goal[9]. Terrorism is the means by which political consequences can be maximized, and the adoption of terrorist tactics by political opponents is a forced choice in the absence of an alternative option. Terrorism is often used in the absence of channels of political expression, by compulsory means designed to offset one's material inferiority and to be more equal to the state. Terrorism is also an effective and low-cost means of drawing immediate political attention.

Some of the people support the opposition-based Islamic fundamentalist terrorist organization as a channel to resolve their grievances. Because they cannot file complaints against the government in a legitimate way, they support violence that they believe is the only means. When unemployment,

etc. occurs, when the gap between the rich and the poor intensifies, when there is no social safety net that guarantees the people's minimum living or does not work properly, it is further expanded by deprivation, anxiety and frustration of the people[10].

The Salafi Jihad terrorist organization tries to force change in government policy or take power on its own through the means of terrorism at the request of marginalized groups or people. Supporters of terrorist organizations become combatants of the organization or secretly support the organization. Even with the government's efforts to eliminate terrorist groups, these organizations can easily avoid themselves under the umbrella of public support.

The expansion of public support for terrorist organizations gives legitimacy to their activities as opposition parties or opposition parties, so terrorist activities continue, and as the state becomes incompetent and the authority and trust are weakened, the activities of terrorist organizations become more active. In addition, if legitimate political opposition is not allowed, there is no way for the fundamentalist terrorist organization itself to pursue its own political purpose other than terrorism, so its dependence on terrorism will increase. Eventually, when the state fails to perform its political and economic functions, the terrorist organization becomes radical[11].

Terrorism is fundamentally an attempt to achieve political objectives by appealing to illegal and violent means, and public support cannot always be the case. The terrorist activities of these organizations not only directly and physically cost the people, but also cause indirect damage to the international community such as a decline in their prestige, a decrease in support from the international community, and economic blockade. In the case of Salafi jihadist organizations, which rely heavily on their regional base for the recruitment of members or funding, such loss of public support, or opposition to their activities, would threaten the survival of the organization.

Rather than enduring the shrinking or disappearing of the organization, terrorist organizations themselves seek a moderate way to pursue their political goals in addition to terrorism, if allowed channels to participate in legitimate political processes, such as those of the Muslim Brotherhood and the Taliban.

In conclusion, the smoother the function of the state and the stronger the people's trust in the state, the more moderate the Islamic fundamentalist terrorist organization will be, and vice versa, the more radical the terrorist organization will be.

3. The Socio-economic background of Nigeria

3.1. Historical background: colonial period and independence

Nigeria has been the trading center of Africa since ancient times, and many tribes have settled in the region. From around 850, black people in northeastern Africa moved here to live in agriculture, and politically maintained the monarchy. After the 15th century, slave trade in Europe threatened the lives of many settlers, and slave trade continued until 1807.

On the other hand, competition among slave traders led to frequent disputes. In the 19th century, the British colonized Nigeria and became politically united. There was a tribal movement due to the inter-Korean annexation. Britain implemented heterogeneous colonial policies. Although limited, economic exploitation was achieved by recognizing the political authority of the Aboriginal people, namely the authority of the Caliph. Trade in the southwestern part of the country has grown, but the standard of living for the people of Nigeria has not grown significantly, and there has been an economic gap between the northern and south-western regions.

The British colonial rule of Nigeria took place through indirect rule over the people of Nigeria through tribal chiefs. In administrative terms, the British government and the colonial central government were structured as superstructures, and the native administrative system as a substructure. In terms of economy, the government encouraged the cultivation of imported crops for export in order to collect systematic taxes, allowing the cultivation of palm oil, cocoa, jujube palm, cotton, and rubber, and recognized land ownership[12].

In poor economic conditions, the southern Ibo and Yoruba moved north to engage in economic

activities, partly due to the ongoing merger by Muslim rulers. In 1804, the Fulani jihad movement began as a demonstration by Muslim leaders claiming territorial ownership of British colonists. The reason for the Fulani jihad movement was that the British colonial government encouraged the anti-Islamic movement and completely ignored the conflict. Britain also used a method of isolating Muslim immigrants as strangers to realize the purpose of the anti-Islamic movement. Conflicts with the federal government were frequent in the Muslim-majority northern region because the colonial government sought to rule Nigeria based on Western legal systems.

Political and economic influences of British colonial rule in modern and contemporary history led to fierce and increasingly structured political power struggles between tribes based in the North, West and East, shortly after gaining official independence from Britain in 1960. Political stability continued until the early 1980s after the 1966 coup and the 1967-1970 Biafra Civil War. After a period of upheaval in which military and civil administration were repeated politically by coups, civil power is now continuing.

After independence, Nigerian history can be divided into three main periods. The first period was when independence and national construction were key, and civil war broke out from the late 1960s to the early 1970s. The second period was when the oil boom and the aftermath left the Nigerian nation devastated. Politically, this period was also marked by constant instability and confusion as the rule by the military continued. In the 1970s, GDP per capita continued to rise due to the oil boom, but the crisis continued from the early 1980s due to the debt accumulated in the 1970s and the decline in international oil prices.

Although it has shown a tendency to recover slowly since the late 1980s, it has not recovered from the impoverished state due to its modest recovery rate. In the 1990s, the IMF's Restructuring Program was applied, but there was no significant change despite the restructuring of Nigeria's economic structure. The third is the most recent period, when the government is politically transferred, and economically, it is trying to overcome the sluggish economic and social problems of Nigeria's national economy and society as a whole, based on rising international oil prices.

3.2. Socio-economic inequality and conflict

It is one of Africa's three largest oil producers, along with Algeria and Libya, in terms of population and resource reserves. Its population exceeds 170 million, making it the eighth-largest population in the world, and has the social characteristics of a multiracial and multiracial nation. Nigeria is home to about 250 tribes categorized by language, with four ethnic groups, each accounting for 67 percent of the population, living in the former four states of the North, East, West, and Midwest, except Lagos. The Hausa and Fulani inhabit 30 percent of the population in the northern states, the Ibo and the Yoruba inhabitants in the eastern states and 20 percent in the western states[13].

As such, in a multi-ethnic society, natural resources, including oil, were produced only in some areas, resulting in racial conflicts to occupy the interests. More than 90 percent of Nigeria's oil is produced in the Niger Delta, where most multinational companies such as Shell are located.
Nigeria's view of resources and the paradox of poverty is related to errors in economic policies related to resource utilization and the unilateral development of resources by multinational companies. It is also related to the short-sighted position of policymakers on the allocation of profits from the production of resources and the conflict caused by weakening national responsibility for citizens[14].

Two of the most important reasons why Nigeria still cannot solve poverty despite its natural resources and abundant labor are the unstable domestic political situation caused by structural contradictions in the federal system and the intensification of regional and ethnic conflicts and struggles in resource development. Political chaos deepened as religious confrontations became entrenched along with complex ethnic political interests and conflicts[15]. The southeastern part of the country, which has many Christians, and the northern part of the country, which has many Muslims, are at odds with each other. The definition of distribution of wealth in the state is distorted in conjunction with issues such as environmental and refugee issues in connection with the problem of structured socioeconomic inequality as well as the contradiction of unreasonable and undemocratic political processes.

Nigeria's political elite is a product of the country's turbulent political history. The political elite mass-produced through British colonialism, independence, and several coups and civic movements helped to deepen the vicious practice of corruption in Nigerian society[16]. By the end of World War II, the British colonial government had monopolized Nigeria's economy through the operation of European Christian groups and monopolies. As the economic sector was so concentrated on one side, most Nigerian workers were in poverty. In the 1950s, the British colonialists, businesses, and middle class of Nigeria, who led Nigeria's economy, colluded to share wealth and power.

With the realization of Nigeria's independence, the new Nigerian elite slowly began to gain political power and economic benefits that were concentrated in Britain. The Nigerian elite used race-based political power to maintain and increase power. This behavior of the elite encouraged intense competition among ethnic groups and regions, and contributed to the emergence of groups that used individual ethnic cultural characteristics and religions as controversial issues.

Nigeria had inherited power around military officers, which allowed political elites to monopolize state power and obtain oil resources based on national credibility[17]. Civil war frequently broke out to take advantage of the natural resources of the power elite. The 1967−70 Nigerian Civil War and the 1990s Civil War were all disputes over natural resources and arable land[18][19]. The corruption of militarism and power groups, state control of oil resources, and the mixture of various languages and religions have made it difficult to truly democratize and distribute economic wealth in equity, leading to severe terrorism and a vicious cycle of social unrest.

4. The Emergence of Boko Haram and its Evolution Into an International Terrorist Group

4.1. Causes of salafi jihadist

Nigeria is the Federal Republic of Nigeria, located on the central coast of West Africa, with the largest population in Africa. In the 13th century, Islam entered and spread widely among the inhabitants of northeastern Nigeria, and Christianity spread through the colonization of Portugal and Britain after the 15th century. Several tribes were unified by Britain in the 19th century, creating the modern-day Nigerian border.

After independence in 1960, Nigeria became a federal state with 36 states and a Federal Capital Territory in 1963, but the populous northern region became a majority of the federal parliament and controlled the central government. However, the conflict between the Christian-dominant Southeast and the Muslim-majority North has contributed to correction anxiety. The Biafra Civil War(1967−1970), a tribal war that followed the unification of large tribes such as Hausa and Fulani in the north, Yoruba in the west, and Igbo in the east, resulted in the deaths of 1 million civilians during the civil war. Since then, frequent conflicts and coups have made it the most powerful country in Africa at the time, but paradoxically, an extreme terrorist group, Boko Haram, has become active[2][20].

The Nigerian people had to live under the threat of crime through the 'Biapra' civil war, suffered military coups and social upheaval, corruption among the elite was widespread, and society was unstable due to Christian and Islamic conflicts.

The reason for the rise of terrorists in Nigeria, firstly, was that the government's incompetence and illegal and irresponsible policies toward the people encouraged the people to distrust. The government's military has committed atrocities in slaughtering children and the elderly in the name of searching for terrorists, which has led to more hatred toward the government's military, even though it opposes terrorist organizations such as Boko Haram. For this reason, joining as a terrorist organization continued to increase[10].

The second is deeply related to the conflict over the government's resource distribution. A surge in international oil prices between 1973 and 79 led to a massive influx of oil dollars, but wealth did not return to the people, and economic poverty increased during the 28 years of military rule, which led to the prevailing trend of plunder[21].

The third is due to structural problems in the federal system. Hundreds of tribes are still not inte-

grated under a single country, resulting in serious conflicts between religious differences and economic discrimination. This phenomenon is experienced in most Muslim societies as well as Nigeria. The reality is that it is difficult to solve these problems with the leadership and capabilities of the power elites[22].

4.2. Boko Haram: descendants of Al Qaeda? the avatar of ISIS?

Boko Haram was founded in 2002 by an Islamic extremist activist named Mohammed Yusuf, who appeared in the northeastern Nigerian city of Maidaguri[23]. Boko Haram was originally called the Nigerian Taliban because of its ideology and methods. Yusuf condemned the enforcement of Sharia in northern Nigeria in the early 2000s as too moderate, and argued that Western education laws should be banned. Boko Haram received weapons and funding from Al-Qaida, and Boko Haram members were trained in Mali by the Al-Qaida in the Islamic Maghreb. Several members of the organization also trained in Afghanistan and Somalia, which are geographically remote.

On the background of Boko Haram's appearance, Kaplan said there were two views. The first is linked to al-Qaeda, and through Algeria, he became involved in the international jihad movement. Second, like the characteristics of the Sahel region, Nigeria also has poor governance and poverty, and economic inequality between the northern and southern regions has created extreme groups[24].

Boko Haram initially opposed the secular state, arguing that Sharia should be applied to Nigeria. The reaction was cold[25], and the Yobe state government tried to deport them, and Boko Haram moved to Kanama, a remote village near the border with the Niger Republic.

In late July 2009, Boko Haram launched a devastating attack on the ethnically mixed Bauchi province. During the attack, Boko Haram instigated Islamic and Christian violence in Bauchi City, and hundreds of Boko Haram militants attacked the police station. The Nigerian army attacked them and killed their leader Yusuf. The incident began and Boko Haram followers temporarily fled to Niger and Chad, seeking a comeback. Rearm the Boko Haram fighters and in September attacked a prison in Bauchi, escaping the imprisoned fighters.

Boko Haram's brutal terrorism began in 2011. In 2011, St Theresa Catholic Church in Madalla was attacked by a suicide bomb. In February 2012, it attacked Christians, and in March, St Finbarr's Catholic Church in Jos was also attacked. In May, about 20 Christian students(and professors) were killed by Boko Haram at the University of Kano Bayero. In June, a Boko Haram suicide bomber drove his car into Harvest Field Church in Bauchi, killing nine people and injuring 35 others.

While terrorism in the province of Yobe occurred mainly in Boko Haram, there were also attacks on Christians in the provinces of Maiduguri, Adamawa, Plateau, and Kaduna. The targets of the terrorist attacks were against non-Muslims, but they also carried out terrorism against those who opposed their Salafism. Boko Haram saw government ministers as not genuine Muslims and considered Christian collaborators and justified terrorism against government personnel[26].

In response to Boko Haram's terrorist activities, the Nigerian government attempted to subdue security agencies and the military, but failed to make significant progress.

In March 2015, it announced that it would join the Islamic State(IS), also known as ISIS and ISIL, which soon led to division within the group. On the other hand, Boko Haram is expanding its armed activities to neighboring countries, Chad and Cameroon. Bomb attacks were carried out on villages, military units, and markets in these two countries. When Burqa, worn by Muslim women, was used in suicide bombings, Chad and the Cameroonian government banned women from wearing burqa.

Nigerian government forces carried out joint military operations with neighboring Chad, Cameroon, and Niger forces to recapture the cities occupied by Boko Haram, but the remnants of the lost territory carried out more terrorist attacks such as surprise bombings and assassinations. The terrorists kidnapped relief workers from Western countries, multinational workers, and other workers from Western countries for large ransom, trafficking cigarettes, drug trafficking, and poaching wild animals such as elephants. The abduction of people, and the kidnapped man as was the woman was the pace or used as sex slaves. Some of Nigeria's poor people are not interested in Islamism, but some join the Jihadist group for a living.

Boko Haram is homogeneous in the nature of IS and ideology and activities, but what is different from IS is that its members are mainly their own people. In the case of ISIS, there is a differentiation that it encourages supporters from all over the world to participate in the organization. However, if Boko Haram tries to spread his power to the surrounding areas, there is a possibility that he will use a strategy to recruit combatants such as ISIS[27][28].

5. Conclusion

Nigeria's Westernization is evil and repugnant to Salafi Jihadist like Boko Haram. They justified the use of violence to change a 'sacred' society. They carried out organizational activities with religious conviction and bravery. The wealthy supporters of Boko Haram donated the proceeds from his property or business to Boko Haram. Children and young people in poor rural areas join organizations themselves to make ends meet, and some participate in the organization through the coercion and intimidation of Boko Haram, and the brainwashing education and training of the organization.

Boko Haram did not act violent from the beginning. As their political ideology was not accepted by the government, there was a physical conflict over it, resulting in the sacrifice of the members. In response, Yusuf vowed revenge and ignored the radical actions of the members. After Yusuf's murder by the government, the organization's barbarism was strengthened, which became an important strategy to carry out the organization's goals.

Inside Islam, there are those who condone or sympathize with Boko Haram's violent behavior. The goal of creating an Islamic society was the same, but the means were only different. But gradually the vast majority of Muslims salafi their ruthless acts such as kidnapping, genocide, rape, sexual slavery of the jihadist, damage to the criticism of the international community. Amid growing, Boko Haram began on the lookout for. Boko Haram is attacking or hiding in neighboring countries outside the occupied territories to prevent the collapse of the forces.

Now Boko Haram has become an enemy to moderate Muslims, and their Salafism and Takfirism have fallen into an unacceptable threat to the Muslim community. Areas where Salafi jihadists gain power have common problems. Western colonial experience, poor borders and classes during the colonial period, distorted economic distribution but not deviating from race-centered society, religious leaders and educators' roles do not contribute to a peaceful society, corruption of power elite, and lack of governance.

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7. Appendix

7.1. Authors contribution

	Initial name	Contribution
Author	SC	-Set of concepts☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection☑ -Final approval of the paper☑ -Corresponding☑ -Play a decisive role in modification☑ -Significant contributions to concepts, designs, practices, analysis and interpretation of data☑ -Participants in Drafting and Revising Papers☑ -Someone who can explain all aspects of the paper☑

International Journal of Terrorism & National Security

Verification of Differences Between the Number of Employees in the Organization and the Service Locations on the Stress of the Korean SECURITY POLICE

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Abstract

Purpose: The purpose of this study is to verify the difference between the number of employees in the organization and the service locations among the general characteristics of the Korean security police.

Method: In this study, among police officers in the security department as of 2020 who had experience in work-related North Korean defectors, 100 trainees in the Police Human Resources Development Institute were surveyed via the self-administration method. Among the collected survey questionnaires, 91 were selected as valid samples, excluding those whose answers were incomplete or missing.

Results: The study results show that the more than 21 employees in the organization on the stress of the Korean security police, the higher the stress, and the less than 10, the lower the stress. By the service locations, it is found that the stress was higher in larger cities, and the stress was lower in small and medium-sized cities.

Conclusion: It is necessary to improve the working environment by providing education and budget so that police officers can communicate and exchange within the organization, and make efforts to reinforce communication with citizens, colleagues, and family, thereby reducing stress.

[Keywords] Police, Security Police, Job Stress, Number of Employees, Service Locations

1. Introduction

In modern society, job stress caused by physical and mental stress due to the characteristics of work culture such as specialization and diversification leads to disease, which causes enormous losses not only in the workplace but also in society.

Eventually, job stress affects physiology, psychology, and behavior to members of the organization and acts as a factor that hinders various functions rather than normal functions[1].

Recent studies on job stress point out that the stress of police activities in modern society contains increased exposure opportunities to danger and violence, discretionary activities of police officers in dangerous environments, specificity of police work, and problems within police organizations[2].

The police service provides law enforcement and crime prevention services for all citizens[3]. With the emergence of new threats such as industrial spy, terrorism, and cybersecurity, the demand for security is gradually increasing, which results in increasing the burden on the duties of police officers[4].

In particular, the daily work of police officials is always faced with unpredictable nature and constant risks. It is characterized by exposure to high stress and fatigue due to the poor working environment for the protection of citizens' lives, bodies, and property and work environ-

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ments such as day and night shift work[5]. In addition, police are under a lot of stress as follows: problem behavior and verbal violence from confronting persons, malicious harassment of criminals, personnel problems, work condition problems, job stress from colleagues and superiors, emotional labor due to competitive and evaluation-oriented human relationships in the workplace., suffering from heavy-duty due to competitive security and system, night shift, shift work and mental stress due to various incidents and accidents[6].

Also, in terms of occupational stress by classification among occupations, the job with the highest level of stress was ranked 1st in law/police/fire/ prison related jobs[7]. As such, accumulated stress, which is not resolved by various factors, negatively affects the body and mind, and eventually leads to a decline in the quality of police security services[8].

Therefore, in recent years, various studies on job satisfaction and quality of life improvement through coping and relieving stress in terms of the police's job stress have been conducted to reduce and relieve the police's job stress, suggesting plans related to the police's satisfaction[9][10][11][12][13][14].

In particular, the security police, who are in charge of an important part of the country, must fully prepare for the security of the non-military field, and must be prepared to respond more elaborately and promptly in consideration of its specificity and importance[15].

Since police activity is a public security service that is directly connected to the safety of the people, the importance of their duty performance is very high.

Therefore, it is essential that the quality of police security services should be improved by relieving stress. In this study, the difference according to the number of employees in the organization and the working area will be verified in order to verify the difference between the general characteristics of the Korean security police and the stress.

2. Research Method

2.1. Research subjects and sampling method

In this study, among police officers in the security department as of 2020 who had experience in work-related North Korean defectors, 100 trainees in the Police Human Resources Development Institute were surveyed via the self-administration method. Among the collected survey questionnaires, 91 were selected as valid samples, excluding those whose answers were incomplete or missing.

Table 1. Research target.

	Description	N	Total
Gender	Male	61 (67.0%)	91
	Female	30 (33.0%)	
Age	20s	7 (7.7%)	91
	30s	28 (30.8%)	
	40s	30 (33.0%)	
	50s or older	26 (28.6%)	
Education	High school	14 (15.4%)	91
	Junior college	30 (33.0%)	
	College	43 (47.3%)	
	Graduate school	4 (4.4%)	
Rank	Policemen/women	1 (1.1%)	91

	Senior policemen/women	19 (20.9%)	
	Assistant inspector	18 (19.8%)	
	Inspector	29 (31.9%)	
	Senior inspector	14 (15.4%)	
	Superintendent	10 (11.0%)	
Employment path	General recruitment	75 (82.4%)	91
	Special recruitment	5 (5.5%)	
	Police academy	2 (2.2%)	
	Police cadet	9 (9.9%)	
	Other	0 (0.0%)	
The total length of service as a police officer	5 years and less	13 (14.3%)	91
	6-10 years	32 (35.2%)	
	11-15 years	13 (14.3%)	
	16-20 years	13 (14.3%)	
	Longer than 20 years	20 (22.0%)	
The length of service at the security department	2 years and less	16 (17.6%)	91
	3-5 years	56 (61.5%)	
	6-10 years	17 (18.7%)	
	Longer than 10 years	2 (2.2%)	
The number of police officers in the organization	10 or less	18 (19.8%)	91
	11-15	42 (46.2%)	
	16-20	24 (26.4%)	
	(More than 5 lines)	7 (7.7%)	
Service location	Tier 1 areas(big cities)	80 (87.9%)	91
	Tier 2 areas(small/medium-sized cities)	11 (12.1%)	

2.2. Measuring instrument

The appropriate method for each verification method was chosen to increase the content validity and verify the construct validity of the questionnaire. Content validity was validated through consultation with relevant experts to adopt survey questions suitable for the purpose of the study, and the reliability of the survey questions was shown to be Cronbach's α coefficient .834.

Table 2. The questions.

	Questions
Q-1	I often face a situation where the demands are conflicting.
Q-2	I get conflicting demands from two or three people.

Q-3	I am in charge of what needs to be done differently depending on the situation.	
Q-4	I have a clearly established mission and goals for my job.	
Q-5	I clearly know my role.	
Q-6	I understand my responsibility for my role	
Q-7	I clearly feel the scope of responsibility for my role.	
Q-8	The degree of responsibility for my work is clearly defined.	
Q-9	I feel the need to reduce some of my roles.	
Q-10	I feel that I have too many roles.	
Q-11	I take on too much responsibility.	
Q-12	My workload is too much.	
Q-13	My heavy workload can negatively affect the quality of my work.	

2.3. Data processing and analysis method

The data processing of this study was performed by using the SPSS 23.0, a statistical package program, to perform statistical verification for the purpose of data analysis as follows:

First, frequency analysis was conducted to identify general characteristics using the SPSS/PC+23.0 program.

Second, Cronbach's α coefficient was calculated for the reliability verification of the questionnaire.

Third, a One Way ANOVA was conducted to find out the difference in stress according to the number of employees in the organization.

Fourth, a t-test was conducted to find out the difference in stress according to the service locations.

3. Research Results

3.1. The difference in stress according to the number of employees in the organization

Table 3. The difference in stress according to the number of employees in the organization.

		N	M	SD	F	sig	post hot
Q-1	10 people or less	18	3.3889	.77754	2.994	.035*	
	11 or more 15 or less	42	3.2143	.78198			

	15 or more 20 or less	24	2.8333	.63702			
	21 or more	7	3.5714	.53452			
Q-2	10 people or less	18	3.2778	.82644	1.488	.223	
	11 or more 15 or less	42	3.1429	.64662			
	15 or more 20 or less	24	2.8750	.53670			
	21 or more	7	3.0000	.57735			
Q-3	10 people or less	18	3.3333	.68599	.783	.507	
	11 or more 15 or less	42	3.2143	.75015			
	15 or more 20 or less	24	3.0417	.75060			
	21 or more	7	3.4286	.78680			
Q-4	10 people or less	18	2.7222	.66911	3.300	.024*	D>A
	11 or more 15 or less	42	3.0238	.64347			
	15 or more 20 or less	24	3.1250	.61237			
	21 or more	7	3.5714	.53452			
Q-5	10 people or less	18	2.8889	.67640	5.288	.002**	D>A,B, C>A,B
	11 or more 15 or less	42	3.1667	.76243			
	15 or more 20 or less	24	3.3333	.70196			
	21 or more	7	4.1429	.69007			
Q-6	10 people or less	18	2.7778	.54832	7.684	.000***	D>A,B, C>A,B
	11 or more 15 or less	42	3.0714	.67690			
	15 or more 20 or less	24	3.5417	.65801			
	21 or more	7	3.8571	.69007			
Q-7	10 people or less	18	2.9444	.63914	3.646	.016*	D>A
	11 or more 15 or less	42	3.1667	.72974			

	15 or more 20 or less	24	3.4167	.65386			
	21 or more	7	3.8571	.69007			
Q-8	10 people or less	18	2.4444	.61570	6.897	.000***	D>A,B, C>A
	11 or more 15 or less	42	2.7857	.71689			
	15 or more 20 or less	24	3.0833	.77553			
	21 or more	7	3.8571	1.06904			
Q-9	10 people or less	18	3.0000	.59409	2.683	.052	
	11 or more 15 or less	42	3.0952	.75900			
	15 or more 20 or less	24	3.4167	.71728			
	21 or more	7	3.7143	.75593			
Q-10	10 people or less	18	3.1111	.67640	3.169	.028*	C>A,B D>A,B
	11 or more 15 or less	42	3.2857	.55373			
	15 or more 20 or less	24	3.2917	.80645			
	21 or more	7	4.0000	.57735			
Q-11	10 people or less	18	2.9444	.53930	3.238	.026*	D>A,B,C
	11 or more 15 or less	42	3.0476	.73093			
	15 or more 20 or less	24	3.2500	.79400			
	21 or more	7	3.8571	.69007			
Q-12	10 people or less	18	3.1111	.47140	.230	.875	
	11 or more 15 or less	42	3.0714	.67690			
	15 or more 20 or less	24	3.0833	.65386			
	21 or more	7	3.2857	.75593			
Q-13	10 people or less	18	3.0556	.80237	.045	.987	
	11 or more 15 or less	42	3.0476	.69677			

	15 or more 20 or less	24	3.0417	.46431		
	21 or more	7	3.1429	.69007		

Note: A: 10 or less, B: 11 or more~15 or less, C: 15 or more~20 or less, D: 21 or more.

<Table 3> shows the difference in stress according to the number of employees in the or-ganization. In the stress difference according to the number of employees, Q-1(F=2.994, sig=.035*), Q-4(F=3.300, sig=.024*), Q-5(F=5.288, sig=. 002**), Q-6(F=7.684, sig=.000***), Q-7(F=3.646, sig=.016*), Q-8(F=6.897, sig=.000***), Q-10(F=3.169, sig=.028*), and Q-11(F=3.238, sig=.026*), there was significant differences.

The difference in stress according to the number of employees shows that in Q-4, the 21 or more employees are higher than the 10 or less. In Q-5, the 21 or more were higher than the 10 or less and the 11 or more ~15 or less, and the 15 or more ~ 20 or less were higher than the10 or less and the 11 or more ~15 or less. In Q-6, the 21 or more were higher than the 10 or less and the 11 or more ~15 or less, and the 15 or more ~20 or less were higher than the10 or less and 11 or more ~15 or less. In Q-7, the 21 or more were higher than the10 or less. In Q-8, the 21 or more were higher than the 10 or less and the 11 or more ~15 or less, and the 15 or more ~ 20 or less were higher than the 10 or less. In Q-10, the 15 or more~ less than 20 were higher than the 10 or less and the11 or more ~ less than 15, and the 21 or more were higher than the 10 or less and the 11 or more ~ 15 or less. In Q-11, the 21 or more were higher than the 10 or less, the 11 or more ~15 or less, and the 15 or more ~ 20 or less.

3.2. Differences in stress according to the service locations

Table 4. Differences in stress according to the service locations.

		N	M	SD	t-value	sig
Q-1	Tier 1 areas (big cities)	80	3.1000	.75641	-2.673	.127
	Tier 2 areas(small/medium-sized cities)	11	3.7273	.46710		
Q-2	Tier 1 Areas (big cities)	80	2.9875	.62630	-4.267	.515
	Tier 2 areas(small/medium-sized cities)	11	3.8182	.40452		
Q-3	Tier 1 areas (big cities)	80	3.1500	.74799	-2.087	.232
	Tier 2 areas(small/medium-sized cities)	11	3.6364	.50452		
Q-4	Tier 1 Areas (big cities)	80	3.0625	.66263	1.158	.879
	Tier 2 areas(small/medium-sized	11	2.8182	.60302		

	cities)					
Q-5	Tier 1 areas(big cities)	80	3.2750	.79516	1.476	.007
	Tier 2 areas(small/ medium-sized cities)	11	2.9091	.53936		
Q-6	Tier 1 areas(big cities)	80	3.2375	.73336	1.430	.027
	Tier 2 areas(small/ medium-sized cities)	11	2.9091	.53936		
Q-7	Tier 1 areas(big cities)	80	3.2625	.72468	.739	.343
	Tier 2 areas(small/ medium-sized cities)	11	3.0909	.70065		
Q-8	Tier 1 areas(big cities)	80	2.9750	.79516	3.179	.139
	Tier 2 areas(small/ medium-sized cities)	11	2.1818	.60302		
Q-9	Tier 1 areas(big cities)	80	3.2125	.75797	.129	.149
	Tier 2 areas(small/ medium-sized cities)	11	3.1818	.60302		
Q-10	Tier 1 areas(big cities)	80	3.3250	.67082	.655	.847
	Tier 2 areas(small/ medium-sized cities)	11	3.1818	.75076		
Q-11	Tier 1 areas(big cities)	80	3.1500	.74799	.247	.571
	Tier 2 areas(small/ medium-sized cities)	11	3.0909	.70065		
Q-12	Tier 1 areas(big cities)	80	3.0875	.64029	-.461	.944
	Tier 2 areas(small/ medium-sized cities)	11	3.1818	.60302		
Q-13	Tier 1 areas(big cities)	80	3.0625	.62326	.295	.041
	Tier 2 areas(small	11	3.0000	.89443		

medium-sized cities)					

Note: A: Tier 1 area(large cities), B: Tier 2 area(small/medium-sized cities).

<Table 4> shows the difference in stress according to the service locations. In the difference in stress according to the service locations, Q-5(t=1.476, sig=007**), Q-6(t=1.430, sig=027*), Q-13(t=.295, sig=041*), there was a significant difference in class 1(large cities) than in class 2(small and medium cities).

In the stress difference according to the service locations, in Q-1, Q-2, Q-3, and Q-12, tier 2 area (small and medium cities) was higher than that of class 1(large cities), and Q-4, Q-5, Q-6, Q-7, Q-8, Q-9, Q-10, Q-11, Q-13, it showed that the tier 1 area(large cities) was higher than the tier 1 area(small and medium cities).

4. Conclusion and Discussion

This study was conducted to verify the difference between the number of employees in the organization and the service locations on the stress of the Korean security police. To achieve the purpose of the study, a survey was conducted on 100 security police officers and a study was conducted on the difference between the number of employees in the organization and the service locations based on the results of a total of 91 valid questionnaires.

The data were processed using the SPSS/PC+23.0 program, and a One-way ANOVA was conducted on general technical statistics for the study subject, t-test for the difference in stress in the service locations and the difference in stress according to the number of employees. The result is as follows.

In the stress difference according to the number of employees in the organization, there were significant differences in Q-1, Q-4, Q-5, Q-6, Q-7, Q-8, Q-10, and Q-11. In detail, in all questions except Q-2, in the case that the number of employees in the organization is 21 or more, the perception of stress was the highest, and the number of employees under 10 showed the lowest stress in the questions excluding Q-1, Q-2, and Q-3. In other words, the less the number of employees, the lower the stress, and the higher the number of employees, the higher the stress.

The result of the difference in stress according to the working area shows that the tier 2 are(small and medium cities) was higher than the tier 1(large cities) in Q-1, Q-2, Q-3, and Q-12 and the tier 1 area (large cities) is higher than the tier 1 are(small and medium cities in Q-4, Q-5, Q-6, Q-7, Q-8, Q-9, Q-10, Q-11, Q-13. This is in line with previous studies that concluded meaningful research results on the difference in job stress according to the service locations [16].

In the difference in stress according to the service locations, there were significant differences in Q-5, Q-6, and Q-13.

In detail, it showed that the tier 2 area(small and medium-sized cities) showed higher stress than the tier 1 are(large cities) in Q-1, Q-2, Q-3, and the tier 1 area(large cities) was higher than the tier 2 area(small and medium cities) in Q-12, but Q-4, Q-5, Q-6, Q-7, Q-8, Q-9, Q-10, Q-11, Q-13. Therefore, it was found that the security police working in the tier 1 area(large cities) have higher stress than the security police working in the tier 2 area(small and medium cities).

According to the analysis, this result is because more people contact or interpersonal relations are made when working in large cities and working with more employees[17]. The more interpersonal relationships and more contact with people, the more work and emotions are consumed, which inevitably increases the stress on the job. Therefore, taking all of these results of the study and putting them together, it is necessary to improve the working environment by providing education and budget so that police officers can communicate and exchange within the organization, and make efforts to reinforce communication with citizens,

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colleagues, and family, thereby reducing stress[18][19][20][21].

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6. Appendix

6.1. Authors contribution

	Initial name	Contribution
Lead Author	SB	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑
Corresponding Author*	CL	-Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑ -Play a decisive role in modification ☑
Co-Author	SJ	-Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

6.2. Funding agency

International Journal of Terrorism & National Security

Pandemic and the Threat of BIOTERRORISM

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Abstract

***Purpose:** The devastating consequences of the COVID-19 pandemic for individuals, families, communities, countries, and the world as a whole offers vivid proof that microbes could be just as destructive and terrifying than the use of nuclear weapons. Pandemic caused by Covid-19 is realizing the dangers of bioterrorism and is aimed at emphasizing the importance of a system to prepare for it.*

***Method:** To this end, the Covid-19 response policies of various European countries are examined to identify and examine the factors needed to respond to bioterrorism. To this end, we looked at the Pandemic response systems in Italy, France, Germany, and the United Kingdom in Europe.*

***Results:** As a result, it is necessary to be prepared in advance in responding to infectious diseases and to respond immediately through quick decision-making. The policy also needs to be consistent and clear. In response to terrorism, it's not much different from the epidemic. First, legislation such as immigration policy, quarantine system, and counterterrorism law is needed. It is also necessary to establish protocols and systems for tracking, testing, and isolation of infectious diseases. Finally, it is necessary to educate and promote people in advance so that they can respond to terrorist situations such as bioterrorism. Preparing these policies in advance is a way to overcome emergency situations such as bioterrorism.*

Conclusion: As a result, preparations for infectious disease measures, quick decision-making, consistency and clarity of policies were derived, and to this end, legislative reform, bioterrorism response protocols were proposed, education and promotion of the people were proposed.

[Keywords] Covid-19, Pandemic, Bioterrorism , Biological Agent, Response System of Bioterrorism

1. Introduction

Warnings of biological and chemical terrorism have been around for a long time. Biological and chemical terrorism is easier to implement than nuclear terrorism, while the consequences can be even worse.   It is the covid-19 pandemic that informs it well. The devastating consequences of the COVID-19 pandemic for individuals, families, communities, countries, and the world as a whole offers vivid proof that microbes could be just as destructive and terrifying than the use of nuclear weapons[1]. In response, the World Health Organization(WHO) officially declared on Jan. 30, 2020 that COVID-19 was a "Public Health Emergency of International Concern(PHEIC)"[2].

COVID-19 is a respiratory syndrome caused by SARS-CoV-2 infection that has been known to spread to the present day through coughing droplets or contaminated object contact[3]. MERS(Middle East Respiratory Syndrome) and SARS(Severe Acute Respiratory Syndrome) are also infectious diseases through respiratory tract, similar symptoms to Covid-19, but there is a difference that the infectious disease is incomparably higher in the case of Covid-19.

As we go through the worst pandemic since the 20th century, we realize the dangers of biochemical tarrers and the importance of their response. Currently, Covid-19 has caused more than 100 million confirmed cases and more than 2 million deaths worldwide. This situation could be caused by bioterrorism. There have been no terrorist incidents in Korea by international terrorist groups or followers of radical ideas, but there have been continuous signs of risk of fleeing overseas terrorists and raising terrorist funds in areas such as industrial complexes in the Seoul metropolitan areas including Ansan and Incheon, Gyeonggi Province, and the risk of homegrown terrorism by Muslim naturalized citizens(1,400 people), 2nd generation immigrants(1,300 people), and political and social discontent forces is also increasing[4].

The relationship between infectious diseases and bioterrorism is very close, and the response system is basically similar to infectious diseases and bioterrorism, so it can be applied to each other. In other words, the quarantine system for infectious diseases and bioterrorism can be implemented in a similar way, so it is possible to establish a quarantine system to respond to bioterrorism based on it in the Covid-19 situation.

Therefore, the purpose of this paper is to examine the response status of Covid-19 in each country and propose a response system to bioterrorism.

2. Bioterrorism

2.1. Definition of bioterrorism

Throughout history, infectious diseases have been used as weapons in conflict. In medieval times, for instance, dead plague victims or anthrax-infected cattle were catapulted into a besieged city to infect its inhabitants. Over time, states developed various biological weapons programs, such as Germany during World War I(e.g., anthrax, cholera) and Japan in World War II(e.g., anthrax, plague)[5].

As a result, the Geneva Protocol(1925) prohibited the use of chemical and bacteriological weapons in international armed conflicts. This prohibition was expanded by the Biological and Toxins Weapons Convention(BTWC)(1975) thus becoming the first multilateral disarmament treaty banning the development, production, and stockpiling of an entire category of WMD. In addition to the use in interstate conflict, there are also several examples of non-state actors deploying biological agents[6].

A biological agent is a bacterium, virus, protozoan, parasite, or fungus that can be used purposefully as a weapon in bioterrorism or biological warfare . In addition to these living or replicating pathogens, toxins and bio-toxins are also included among the bio-agents. More than 1,200 different kinds of potentially weaponizable bio-agents have been described and studied to date.

The bioterrorism defined in CDC(*Centers for Disease Control* and Prevention) is as follows. Terrorism using biologic agents that are harmful to humans. Biological diseases and the agents that might be used for terrorism have been listed by the US Centers for Disease Control and Prevention(CDC). These agents include viruses, bacteria, rickettsiae(microorganisms that have traits common to both bacterial and viruses), fungi, and biological toxins. The biological disease agents are classified into three categories, according to the degree of danger each agent is felt to pose[7].

Category A agents, the highest priority, are associated with high mortality and the greatest potential for major impact on public health. Examples of Category A diseases include anthrax, botulism, the plague, smallpox, tularemia, and hemorrhagic fever due to the Ebola and Marburg viruses. Category B agents are 'incapacitating' because of their potential for moderate morbidity but relatively low mortality. Category C agents include emerging threats and pathogens that are potentially effective weapons. Examples of Category B diseases include Q fever, Brucellosis, Glanders, Ricin toxin, epsilon toxin of the gas gangrene bacillus, and Staphylococcus enterotoxin B. Examples of Category C diseases include Nipah virus, Hantavirus, tickborne hemorrhagic fever and encephalitis viruses, Yellow fever, and Tuberculosis(multi-drug-resistant TB)[8].

The problem of biological agents is that facilities to undertake research on or to produce biological agents are more difficult to detect and easier to hide than facilities to produce fissile material for nuclear weapons. The difficulties of detection enhance the risk of a surprise appearance of a new biological-weapon capability. Concerns about possible future weapons are even greater than the concerns about today's biological weapons. Studies warn that new biowarfare agents could be developed through genetic engineering and that ways could be explored to weaponize biochemical compounds called bioregulators, which control basic human functions, from thought to action. Biological toxins are attractive weapons because they can cause widespread social fear and panic beyond physical damage[9].

2.2. Bioterrorism and covid-19

Much has been written about terrorist calculations for engaging in bioterrorism, with the general consensus among experts being that only a relatively small subset of terrorists is willing and able to do so[10]. Within the terrorist calculus, however, at least part of the motivation to pursue biological agents as weapons is based on the consequences that such weapons are likely to have. These, in turn, are influenced to a large degree by the vulnerability of the target society to infectious diseases in general. The inability of even highly developed countries to stop the spread of the virus and the often incoherent and delayed responses of authorities at all levels have exposed the myriad weaknesses present in global public health systems. Such outcomes will not go unnoticed by terrorist groups, who will remember these impacts when seeking new means to achieve their goals. It must be remembered that a key strategy of terrorism is to inflict psychological damage on populations as a means of coercion, usually through physical harm or the threat thereof. The societal disruption, economic damage, and deaths caused by COVID-19 are a perfect script for the theatre of terrorism.

It is thus logical that for many terrorists, wherever their prior calculations for bioterrorism had ended up, the vulnerabilities highlighted by the COVID-19 pandemic have shifted these towards the more attractive end of the scale[11]. For those terrorists who were near but not quite at the tipping point where they would actively pursue bioterrorism, the pandemic might push them across the Rubicon. At the same time, the indiscriminate nature of COVID-19, and the fact that it is affecting everyone irrespective of religion, ethnicity or citizenship, might give other terrorists that only target specific populations pause, at least when it comes to utilizing contagious pathogens[12]. The potential increase in the likelihood of bioterrorism might therefore be restricted to the more generally misanthropic terrorists or those espousing more transcendental ideologies.

The failure of governments in each country to deal normally in the current Pandemic situation is another reason why terrorists are attracted to bioterrorism. Since the report of SARS-like respiratory syndrome in Wuhan, China in December 2019, there has been a rapid global transmission as no proper response has been made. Governments failed to respond to the coronavirus in its early stages, causing   more serious situations. The insufficient quarantine system increases the chances of successful bioterrorism, which makes terrorists more interested in it.

While the majority of past cases of terrorists and other violent non-state actors attempting to use biological agents to cause harm have involved noncontagious agents, like Bacillus anthracis and various biological toxins, there have been roughly a dozen cases involving contagious pathogens according to the Profiles of Incidents involving CBRN and Non-state Actors (POICN) Database[13]. Among the more prominent of these figure plots by R.I.S.E., a small group who planned to use Salmonella typhi in 1972 as part of a plot to destroy the world and repopulate it[14], as well as the Japanese doomsday cult Aum Shinrikyo, which attempted to collect Ebola virus samples in Zaire during its "African Salvation Tour" in 1992[15]. In 1995, white supremacist Larry Wayne Harris ordered vials of Yersinia pestis, the causative agent of bubonic and pneumonic plague[16], and in 2014 a laptop of a Tunisian linked to ISIS indicated an interest in weaponizing the same agent[17]. Recent studies have suggested that intentionally disseminating dangerous pathogens by using one person to infect others is certainly possible for perpetrators who are less concerned with their own safety[18]. It is therefore not out of the ques-

tion—particularly since it is so infectious and samples are readily accessible—that terrorists might be drawn to considering using the SARS-CoV-2 virus as a weapon.

There are three possible scenarios in this regard. First, there are low-level threats of actual spreading of the virus with little to no premeditation, usually as part of an emotional outburst or idiosyncratic behavior. There have been multiple cases in the United States, as well as reports from the United Kingdom, Italy, Japan, Belgium, Australia, Kazakhstan, and elsewhere of individuals claiming to have coronavirus intentionally and coughing or spitting on other people, licking products in stores, and similar behavior[19]. While not rising to the level of behavior that academics generally attach to the term terrorism, at least in the United States some of these have been prosecuted as cases of terrorism[20].

2.3. Characteristic of bioterrorism

Bioterrorism is covert. Without prior warning or specific information, a clinical condition appears before the contamination situation is known. Thus, the individual is the first to be seen in a medical environment, unlike conventional weapons or natural disaster scenarios in which police, firefighters, paramedics and other emergency service personnel are the first responders.

Potential targets for terrorists are widespread and somewhat unpredictable. Immediate recognition of a common source outbreak from a bioterrorist event might be missed secondary to a clinical latency period following exposure and casualties are likely to present for medical attention in diverse locations and at varying times[21]. This illustrates the critical importance of surveillance, data sharing and real-time communication.

Initial symptoms of bioterrorism-associated diseases may be nonspecific. In the absence of a known exposure, many mildly symptomatic individuals may either not seek medical attention or may be misdiagnosed with a nonspecific, 'flu-like' illness. However, once beyond the early stages, many of these illnesses progress rapidly and treatment may be less effective.

Most of the diseases caused by agents of bioterrorism are rarely, if ever, seen in clinical practice. Therefore, physicians are likely to be inexperienced with their clinical characteristics. By definition, agents of bioterrorism have been laboratory-manipulated and may therefore not demonstrate the classic clinical features of naturally occurring infection.

Early identification of bioterrorism can be facilitated by recognizing specific epidemiological and clinical clues. Clustering of patients with common clinical syndromes, especially unusual or known to be associated with bioterrorism agents, should prompt notification of public health authorities. The recognition of a single case of a rare or non-endemic infection in the absence of a travel history or other potential natural exposure. Unusual epidemiologic patterns of disease, such as atypical age distributions, unexpected clinical severity, or concurrent illness in human and animal populations. For some agents of bioterrorism and several naturally occurring, emerging infectious diseases, evidence supports the potential role of animals as early warning sentinels of an attack or as markers of persistent exposure risks to humans[22].

3. National Quarantine System

3.1. Italy

Until vaccines and treatments are developed, Italy's strategy to respond to Corona 19 can be divided into blocking inflows from abroad, social distancing, and Progressive mitigation(stage 2). Italy's response strategy follows a one-sided trend in which local governments interpret and decide whether to adopt the bill if the central government submits it[23]. This makes it difficult to say that a single systematic and integrated response strategy has been implemented due to different timing changes in response strategies and different regional distributions. The traditional infection prevention strategy, which isolates suspected people from outside, was adopted before other European countries, but at the same time did not pay much attention to infections in the community. As soon as a large-

scale community spread was discovered in late February, the government announced a local high-intensity social distancing the next day, and quickly strengthened its size and strength, once implementing a nationwide total blockade. On the other hand, the strategy of lifting and easing the blockade, which was first announced on May 3, was implemented by repeating the introduction and withdrawal step by step in line with the trend of increasing and decreasing the number of confirmed people.

3.2. France

The French government's initial response was a mitigation strategy. Only patients with symptoms were tested. There was a problem with this initial response strategy. According to the Moatti JP(2020), Korea(12 confirmed people) and France(6 confirmed people) were in a similar situation on 1 February 2020, but France decided to block the country at the highest level. France was unable to conduct mass testing due to a lack of test reagents, and the school issued a shutdown order during the March 15 national elections, causing problems in communication in the crisis. Some media outlets have also fueled controversy by publishing the effects of the drug "hydroxychloroquine" as a covid-19 treatment. After such a chaotic experience, the French government shows clear and consistent performance in response strategies, such as increasing inspection capabilities, strengthening physical distancing, and forcing people to wear masks[24].

3.3. Germany

Germany's response to the Covid-19 pandemic was led by the federal government and local governments, led by the Robert Koch Institute(RKI). Germany was decentralized, so the quarantine policy was decided by coordination between local and federal governments. Merkel assumed the worst situation in several interviews and speeches regarding Covid-19, for example, at a press conference on March 11, warning that 70% of the population could be infected with Covid-19, because there were no Covid-19 drugs and vaccines. Merkel promised the people's cooperation in responding to Covid-19 and national support, and emphasized solidarity and social symbiotic spirit to overcome the Covid-19 trend[25]. Chancellor Merkel left the quarantine policy to an expert at the Robert Koch Institute(RKI), where Germany's top experts gathered, and focused on persuading the people. Christian Drosten, a German coronavirus expert, said in an interview with the Guardian that Merkel herself is a scientist and helps her respond appropriately to the Covid-19 epidemic[26].

3.4. England

The UK has established and clearly announced and implemented response strategies according to appropriate procedures, but have not been consistent. In the early days of fashion, containment strategies were applied to track and isolate confirmed and contacted persons. As the trend spread in mid-March, it was announced that it would be implemented as a delay strategy on March 12, and that it would stop tracking and inspecting contacts[27]. However, the announcement came a day after the WHO announced the Covid-19 pandemic, and four days later, it was not until it was officially recommended that social distancing was officially recommended and the chief medical advisor stated in a press conference that the goal was to obtain some sort of collective immunity[28].

The WHO also recommended testing of suspected patients, and from 16 March, the revised strategy was adopted[29]. It was recommended that non-essential social contacts should be avoided for social distancing, and that only children of key personnel should be allowed to go to school two days later[30]. From 23 March, Full lockdown was implemented, restricting freedom of movement and limiting gatherings and recommending staying at home.

4. Response System of Bioterrorism

Earlier, we looked at the Covid-19 response system in many European countries. As a result, it is necessary to be prepared in advance in responding to infectious diseases and to respond immediate-

ly through quick decision-making. The policy also needs to be consistent and clear. In response to terrorism, it's not much different from the epidemic. It is important to respond to terrorism immediately through quick decision-making because it is also necessary to respond to terrorism and it occurs in an urgent situation. And it is better to be consistent and clear in counterterrorism policies. In that respect, many European countries have introduced decentralization systems such as the federal system, which has disadvantageous factors in this regard.

Korea has the advantage of being able to carry out fast, consistent and clear policies because it has a structure in which power is concentrated in the central government. These factors can be seen as the reason why Korea's quarantine policy is recognized worldwide. Therefore, it is necessary to prepare the terrorist situation in advance and prepare protocols to cope with bioterrorism. There is still a lack of Korea's level of responding to bioterrorism, and it needs to be supplemented in the future.

First, legislation such as immigration policy, quarantine system, and counterterrorism law is needed. In order to proceed with the policy, legal grounds are needed and it is necessary to prepare in advance. It is also necessary to establish protocols and systems for tracking, testing, and isolation of infectious diseases. It is necessary to designate a command system, director, and specialized hospitals in advance that can respond in the event of a bioterrorism incident. The characteristic of the corona response system is that the policy objectives are very urgent and important, so the network is showing a centralized appearance, and the fact that Korea Disease Control & Prevention Agency(KDCA) has been highly recognized for its speciality and expertise to respond to the pandemic[31]. also, local healthcare organizations should hire experts in infectious diseases and offer sustained education for them[32]. Finally, it is necessary to educate and promote people in advance so that they can respond to terrorist situations such as bioterrorism. Preparing these policies in advance is a way to overcome emergency situations such as bioterrorism.

5. Conclusion

This study was conducted to recognize the increasing threat of bioterrorism in the Pandemic era and to establish a response system. Therefore, I wanted to look at the Covid-19 response systems in many European countries and learn from them. As a result, preparations for infectious disease measures, quick decision-making, consistency and clarity of policies were derived, and to this end, legislative reform, bioterrorism response protocols were proposed, education and promotion of the people were proposed.

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7. Appendix

7.1. Authors contribution

	Initial name	Contribution
Author	MC	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑ -Play a decisive role in modification ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

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Strategic Implications of Belt and Road Initiative for the U.S.-ROK ALLIED RELATIONSHIP

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Abstract

Purpose: The ROK's diplomatic maneuverability since the normalization of its relationship with the PRC in 1992 has received much undeserved skepticism from both Beijing and Washington. While Beijing acquiescently acknowledges the necessity of Seoul to maintain an alliance with Washington, it has become critical of it since the ROK's decision to deploy THAAD in 2016. The paper aims at a better understanding of US intent and purposes of engaging with China over the years. To this end, it attempts to reveal the underlying intent of China's Belt and Road Initiative by introducing its military nature and characters.

Method: This paper is basically researched using the traditional literature(English and Chinese) search method. In this paper, quantitative research methodology was not applied due to the distrust of the survey results in China. The interaction of China's Belt and Road Initiative for the U.S.-ROK allied relationship was conducted through a traditional literature search method. In the future, this research topic is expected to be studied in a scientific analysis research method with proven objectivity.

Results: To overcome the dilemma that it conceives itself to be in the ROK must consider the following. First of all, the ROK must consider some of the following PRC will not change as long as the CCP remains in power and the Party upholds communism. Secondly, the ROK must expand its concept of the alliance to something beyond military cooperation. Opportunities for cooperation in areas other than security are bountiful. It must now overcome the restrictions it has put on itself and think globally with its ally since it can now afford to do so.

Conclusion: It concludes that the best viable way to defend ROK's national interest is by protecting its values and ideology that it has upheld for the time being. ROK's the dilemma between the U.S. and PRC will transpire into something unprecedented. It can be assured by the way the fourth industry is transforming that it will no longer be an economic market and security dependence. The strongest recommendation at this particular juncture is to check whether we are willing to defend our values and ideology.

[Keywords] Belt and Road Initiative, The US-ROK Alliance, China, Hegemonic Challenge, Indo-Pacific Strategy

1. Introduction

The ROK's diplomatic maneuverability since the normalization of its relationship with the PRC in 1992 has received much undeserved skepticism from both Beijing and Washington. While Beijing acquiescently acknowledges the necessity of Seoul to maintain an alliance with Washington, it has become critical of it since the ROK's decision to deploy THAAD in 2016. Beijing capitalized the occasion not only to impose economic sanctions on Seoul for its breach of its promise not to do so, but also to materialize its long-held aspiration to decouple Seoul and Washington from their allied relationship by incorporating a peace treaty into the premise of a permanent peace system as a peaceful solution to the DPRK's denuclearization. The latter measure, presented in the form of "dual-track"

approach in 2017, aims to challenge the fate of the alliance as well as the legitimacy of U.S. forces in the ROK[1].

Since the PRC replaced the United States as the largest trade partner of the ROK in 2004, the ROK's ever-burgeoning economic relationship with the PRC has been alarming to the U.S. Washington is not concerned about the sheer economic implications, but rather about the strategic ramifications such as possible undermining effect on the foundation of the alliance. Washington became wary of Seoul as it was becoming disillusioned with the positive consequences of its growing economic dependence on the PRC and the rise of China as advocated by the Chinese Communist Party(CCP). It was a natural consequence for the U.S. as the ROK at times seemed to be under the same illusion as the PRC that growing economic interdependence with the communist state would have a positive spillover effects on peace on the Korean Peninsula.

Had it not been for the alliance factor with the U.S., the ROK's growing economic reliance on another large market in addition to that of its ally would have not been objected by the ally. The U.S. would have also welcomed its ally's gains, which could in turn benefit the alliance. A state's actions to diversify the sources of its economic interests are regarded as normal behavior.

However, the ROK's case is different from others because of the aforementioned illusions and undermining effects on the foundation of the alliance for two salient reasons. One is the PRC being a communist state that holds a different perception of the security situation of the Korean Peninsula. The other is the PRC's lack of influence on its ally, the DPRK. The ROK believes the PRC can influence the DPRK's behavior according to its desired wishes.

Getting out of such an illusion is one of the best and most realistic ways for Korea to overcome the dilemma it confronts in choosing between the U.S. and the PRC. Towards this end, the paper argues that China's policy goals on the Korean Peninsula and East Asia is to undermine ROK-US alliance. As a means to defend its national interests, the paper emphasizes a better understanding of US intent and purposes of engaging with China over the years. It also reveals the underlying intent of China's Belt and Road Initiative by introducing its military nature and characters. It concludes that the best viable way to defend Korea's national interest is by protecting its values and ideology that it has upheld for the time being.

2. The PRC's Revisionist Goal

Apart from its pursuit of a new international order since the foundation of the country in 1949, the PRC has been longing to expel "foreign influences" from the vicinity of its sphere of influence. That sphere of influence was once defined somewhat vaguely as areas and regions adjacent to the PRC's territories in East Asia during the Cold War. It is now defined in somewhat more specific terms to include those regions and areas.

Northern and western regions are those defined during the Cold War era. Southern ones are rather re-introduced in the post-Cold War era, and include those territories within the nine-dash line at a minimum and the first-island chain at a maximum. "Foreign influence" in the Cold War era used to mean foreign presence, that is, foreign military presence. The end results included the withdrawal of U.S. forces, scrapping of U.S. military bases, and abrogation of U.S. alliance treaties[2].

Of the five countries and areas the U.S. had stationed its military forces, the PRC saw its pull out from the three. With the end of the Vietnam War, U.S. forces were withdrawn and by unification under North Vietnam, U.S. military bases were gone and so was its alliance treaty with the South. With the normalization of its relationship with the PRC, the U.S. alliance treaty with Taiwan was renounced and U.S. military forces were therefore withdrawn. In the Philippines, a national referendum on the question of relinquishing U.S. military bases led to the withdrawal of U.S. forces from the country and the end of the alliance.

Only two alliances in the region remain legitimate for the U.S. One is with the ROK and the other is with Japan. The latter's alliance with the U.S. does not worry Beijing, as evidenced by a conversation between Mao Zedong and Henry Kissinger during diplomatic negotiations in the early 1970s. Mao

respected and appreciated the role of the U.S.-Japan alliance as long as it prevented Japan from reverting to militarism and thereby fulfilling its long-sought dream of becoming "a normal state," not to mention extending its military influence in the region. The PRC's appreciation of the U.S.-Japan alliance in this context is still effective to date, despite recent revisions in the role of Japan's Self-Defense Forces posture in supporting the U.S. in times of contingency.

The PRC is still sensitive to the ROK-U.S. alliance and keen to bring an end to it[3]. The end of the alliance is not within Beijing's sight. However, all its diplomatic and political maneuvers in the Northeastern Asian region have been geared towards this end in recent times. Beginning in 2010, the PRC has "succeeded" in defining Korea's western seas as "its own waters"[4][5][6]. No joint military exercises off the west coast of the ROK with the U.S. and no U.S. aircraft carrier sailing in these waters since 2012 demonstrate the success of Beijing's claim. Joint naval exercises were moved to the east coast.

Another manifestation of Beijing's diplomatic efforts to undermine the ROK-U.S. alliance lies in its promotion of the so-called "double suspension and dual-track approach" as a peaceful solution to the denuclearization of the DPRK. The PRC has been a fervent advocate of these approaches since 2017. By "dual suspension," Beijing insists that the ROK and U.S. withhold joint military exercises while the DPRK restrains from military provocations including nuclear and missile tests[7]. By "dual-track approach," Beijing wants the denuclearization process to begin simultaneously with building a permanent peace regime following swapping the military truce from the Korean War with a peace treaty[8].

The so-called "peace treaty" is where the PRC's aspiration of expelling the foreign military presence from the Korean Peninsula is inherent[9]. When it comes to the question of replacing the Armistice with a peace treaty, Beijing and Pyongyang have been persistent in their demands on the status of U.S. forces on the peninsula[10]. They both want to include the withdrawal of U.S. forces and the end of the U.S.-ROK alliance. While Pyongyang has been explicit in its demand, Beijing has remained supportive. Although Zhou Enlai and Kissinger agreed to keep their respective control over the two Koreas in the early 1970s within the confine of the alliance, the PRC has failed to prevent the DPRK from developing nuclear weapons, whereas the U.S. succeeded in keeping the South away from nuclear weapons and provoking the DPRK[11][12].

Therefore, a peace treaty is a theme for the PRC's solution to the DPRK's denuclearization. It believes that denuclearization is only feasible and viable for the DPRK when its main adversary and threat disappears with the withdrawal of U.S. forces in the ROK and subsequent abrogation of the alliance treaty. The PRC has never disagreed with the DPRK on the reasons to pursue nuclear weapons. It is only natural for Beijing to include such conditions in its proposed peace treaty[13].

The other PRC effort involves its interference in the internal affairs of the ROK. The case of THAAD speaks volumes. Beijing's decision to place tacit sanctions on the ROK was a solemn alert. It was only the beginning. Many more such attempts to exert Chinese influence on the ROK's policy community followed, as evidenced by Xi Jinping's remarks to Moon Jae-in at the Osaka G-20 meeting. Xi solemnly warned that Moon was susceptible to outside influence when making decisions. Xi's implication was obviously directed towards the U.S. The message was a reiteration of Kim Jung-un's New Year address of last year. It basically demonstrates that when it comes to U.S. issues in ROK defense and diplomatic affairs, the PRC is clearly on the side of the DPRK. His warnings might have come from his foreseeable concerns related to the possible deployment of intermediate-range missiles and the ROK's position on U.S. pressure not to use Huawei and other Chinese technologies for cyber security reasons[14].

The PRC understands that the deployment of THAAD and other weapon systems to American military bases is solely and exclusively the decision of the U.S., and out of ROK's jurisdiction. It was mostly the case before THAAD deployment. In many past cases, most U.S. weapons were deployed without the South Korean government's knowledge. Deliveries of goods to U.S. bases in the ROK are not subject to reporting to and inspection by the Korean customs office. The practice is customary and the PRC is also clearly understands it.

The South Korean government had to be involved in the THAAD case largely because the citizens

of Pyongtaek City opposed the deployment for health reasons. The circumstance transpired into the Korean government's involvement as it had to offer land for a new U.S. military base, a land that is effectively capable of hosting the deployment of such a weapon system and remote enough to avoid any possible harm to the health of the South Korean people. It was then that the government's involvement was subject to the PRC's criticism and eventual sanctions.

The PRC already began to signal its concerns and warnings to the South Korean government and policy community on possible U.S. deployment of intermediate-range missiles. Exactly five years and one day after China's ambassador to Korea delivered the first warning on the deployment of THAAD, he once again explicitly alerted South Koreans on intermediate-range missiles. On November 28, 2019 at a conference in the National Assembly of the ROK, he reminded the consequences of THAAD and warned to avoid other ones that could only be more severe.

The Chinese ambassador's message was clear: the PRC is ready to intervene once again should the ROK allow the U.S. to deploy intermediate-range missiles to American bases. The warning at the ambassadorial level cannot be overlooked. There is a pattern for the PRC's government to exercise such a warning. It starts with its ambassador in the host nation, and then moves up to a higher level, the ministerial level, for example. There is living proof in the way such a pattern was exercised from 2014 to 2016[15].

China's ambassador to the ROK delivered the initial warning and then in the first few months of 2015, visiting Chinese ministers or their assistants gave more extensive and expansive warning messages to their counterparts and sometimes directly to the president[16][17][18][19]. It would continue to escalate to the highest level. In March 2016, for instance, Xi would make the PRC's position and concerns known at the highest level. This time it was directly to the American President Obama, and not the South Korean president, at the Nuclear Security Summit[20][21][22].

The PRC's intervention in the ROK's internal affairs is violation of Korean sovereignty, as well as a breach of its own diplomatic principles in the Five Principles of Peaceful Coexistence, the backbone of Chinese diplomatic principles. The PRC's implicit goal is to exert influence on the ROK so as to force it to fall into a dilemma of choice between economy and security. It is also to undermine the foundation of the ROK-U.S. alliance by subjecting the ROK to such a dilemma. At the same time, it wants to extend it influence over the two Koreas by incorporating the South into its sanction list. Not only is the North currently under Chinese sanctions for nuclear and missile tests, but so is the South for the deployment of THAAD. It is an unprecedented case whereby the two Koreas are simultaneously under Chinese sanctions.

3. America's Efforts to Change China

One factor that gives rise to the ROK's dilemma between the U.S. and PRC is ideology, which is a critical factor in shaping one's perceptions. Had the PRC become a nation that shares a similar if not identical ideology with the ROK and the U.S., it would most likely be that the two nations would not be having conflicts that are otherwise unnecessary and unwanted. Because of the PRC's growing emphasis on ideology in all walks of life, it is getting more unrealistic and less likely that the PRC will share a similar perception of the world with others. For instance, the PRC will remain adamantly supportive of the DPRK for ideological reasons.

Robert Jervis in his famous book *Perception and Misperception* analyzed the role of ideology in shaping one's perceptions. Ideology basically defines one's perceptions for one simple reason[23]. That is, one wants to see only what one likes to see within the confines of the ideology one reveres, and therefore, wants to hear only what one likes to hear. Perception is very much dictated by ideology for its impact on information processing. From collecting information to analyzing the information gathered in accordance with the ideology one upholds, the end result of such a process can only be biased and subjective. No objective result can be expected from such a process. This is the main reason why the PRC would perceive the security situation, for example, not in the same terms as others, but the DPRK.

According to Jervis, ideology is important for its impact on one's selection of values. Ideology determines the values that one will deem proper for the society that one belongs to. Therefore, different values that different nations hold in their political practice, including decision making and governance, will engender different perceptions[23]. Nations with different values will only conceive and interpret the meaning of the same phenomenon in different terms, thereby paving the way for different perceptions and conclusions. Different conclusions based on different perceptions become a major source of conflict.

The conflicts arising from different values and ideologies make it difficult if not impossible for states to reach a peaceful solution. Ideological conflicts are difficult to solve, as the world has witnessed in the past. Negotiations often fall into an impasse, stalemates lead to ever-widening gaps in perception, and this more than often not entraps states in security dilemmas. Escalation in security dilemmas sometimes heightens military confrontation and results in military clashes.

Because of such concerns, the U.S. has tried to convert PRC into a Christian nation and a democratic state for more than 200 years[24]. At the outset in the late 18th century when the first commercial vessel from the U.S., *Empress of China*, embarked to China, the U.S. had one political goal, that is, to change China into a democratic and Christian state. The goal was never realized after the Kuomintang's defeat to the Chinese Communist Party in 1949. Thereafter, the U.S. had to wait another 30 years to resume its pursuit of converting the PRC into a democratic state. It was made possible in 1978 when the PRC finally decided to open up the country and adopt an economic reform policy.

Since 1978, the ultimate goal of America's China policy is to transform it into an open and democratic society through engagement. The proselytization of the PRC was no longer a valid goal of U.S. policy in the setting of the Cold War. However, an open and democratic nation that embraces a market economic system became the top priority for Washington. As long as the U.S. conceived the PRC moving in that direction, it was willing to take the trade deficit inflicted by the PRC's unfair and unjust trade practices. Since 1983, the U.S. has been in a perennial deficit with the PRC. Nonetheless, it could afford the economic loss at the price of its long-sought goal of 250 years[25].

Successive administrations and Congress members all shared one hope and goal. That is, to see a democratic PRC. This is why the United States was sometimes compelled to take a containment stance toward the PRC, but would not completely fold on its engagement policy. At worst, it would simultaneously be in pursuit of both containment and engagement strategies, as evidenced in the late 1990s and early 21st century when it introduced the so-called "congagement policy." The government in Washington, with bipartisan support from the U.S. Congress, would never relinquish the effects that it envisioned from an engagement policy[26].

The U.S. adheres to an engagement policy for one simple conviction, based on Immanuel Kant's "perpetual peace" argument[27]. Should an engagement policy persevere through ideological suppression and discrimination, it would lead the PRC to a path of assimilation on all and every front, ranging from ideological to cultural and institutional adaptation and democracy. Furthermore, the more the PRC is democratized, the less the chance for war to arise from a conflict with the U.S. The logic behind this argument is apparent in the Democratic Peace theory[28]. Even if the PRC rises to the extent that power parity with the U.S. is realized, the prospective conclusion of power transition theory can be denied as long as the PRC becomes a democratic nation.

Washington's hope and goal to date, however, has not been realized. Beijing's fervent defense against and denial of the Chinese people's access to Western ideology and values has only perpetuated the PRC's fate as a communist state. Since the opening of the country, the PRC has been implicit in official statements on its position on Western ideologies and values. In official statements and public addresses by the CCP's top leaders, the PRC wants the world to respect the diversity of culture, ideology, values, race, ethnicity, religion, and language, and therefore, everyone's sovereign right to choose their path of development and governance system. They have successively called the world to respect the individual state's choice of governance system, a choice based on the judgment of what the state deems best suited to its own predicament and circumstances as well as best serving the interests of its people and society.

The CCP's defense against Western values and ideologies was later elaborated in a new concept. It was introduced in the notion of so-called "core interests." In 2009, then Senior Councilor Dai Bingguo interpreted the CCP's core interests to include (1)a fundamental system and state security; (2)state sovereignty and territorial integrity; and (3)the stable development of the economy and society[29]. Since then, the scope of the PRC's core interests has been broadening. The 2011 White Paper added "peaceful development" and "national reunification" to the "PRC's core interests"[30].

Basically, any(foreign) challenges to the CCP's governance system and leadership would be perceived as a threat to the regime. The right to sustainable development and social stability will be protected at all costs and by all and any means. Extending from the Anti-Secession Law of 2005, the regime declares its intolerance for any attempts, both internally and externally, to challenge the integrity of Chinese territory[31].

The notion of a fundamental system also means the CCP's right to rule and respect for its leadership. Any challenge to its right and leadership will be conceived as a threat to the Party[32]. In other words, any challenge to Party doctrine, ideology, values, and its right to rule and lead the nation will not be tolerated and met with all countermeasures including forceful measures, as evidenced in the past.

The integrity of the Party is founded in the institutions under its auspices and leadership. These institutions are built on the utmost respect towards the ideology and values upheld by the Party. Therefore, any challenges to these institutions will be regarded as a threat to the Party as well. Conversely, the Party is entitled to monitor any potential challenges and has the right to censor and control all activities of the general populace[33].

Under these circumstances, there is not as much leeway as the U.S. would like to see for Western values and ideologies to penetrate into Chinese society. As long as the CCP stays in power, it will be difficult to see the PRC transform into a democracy with a market economic system as the U.S. would like to expect. The PRC will continue to adhere to a communist ideology and socialist values with its firm belief in them as a prerequisite to the success of a utopian world that it foresees to create in 2049. This utopian world, dubbed a "Tonghua" or "Datonghua" society in Chinese, is already a declared goal of the CCP[34].

It is for this reason that U.S. President Trump introduced his "America First" policy when he came into power. The notion of "America First" is not merely about fixing the trade structure with the PRC. It is about practicing fair and just trade based on rules and norms, while respecting extant laws and institutions that are built on democratic values. To the dismay of many successive American presidents, the PRC defied all the promises it had made and never respected the requisites to the success of compromises that the two nations had made. Trump was not going to tolerate the PRC's persistent defiance and total ignorance of compliance[35].

He apparently saw two possible options, coercion and negotiation. He wanted to press the PRC hard with all available measures to fix its own behavior. Trump therefore decided to not to be hesitant in waging a trade war against the PRC. Unlike his predecessors, he was not intimidated by a game of chicken, as evidenced in his trade war with the PRC and blackmailing the DPRK in 2017. Simultaneously, he had a peaceful option available in negotiation. Amending one's behavior through negotiation cannot be discarded against a nemesis like the PRC, whom the U.S. also depends on economically. While conducting negotiation with the PRC, however, he wanted to initiate and leverage the process and not be led by the PRC like his predecessors.

The U.S. now realizes that sheer engagement is no longer effective in achieving its goal of 250 years. After 40 years of engagement during the PRC's opening era, Washington now has come to the realization that it will have to force the PRC at times to embrace not only Western institutions, but also embedded principles and values.

At other times it will have to lead it to respect compliance practices and other necessary requirements to follow the rule of law. Should the PRC remain firm on preserving communist doctrine and ideology, the U.S. will be left with no other choice but to further its pressure and coercion[36]. This is perhaps the last resort for Washington and also for Beijing to avoid any dire consequences that power transition theory projects.

4. The Military Aspects of China's Belt and Road Initiative and US' "Indo-Pacific Strategy"

There is an illusion by PRC's peaceful and economic justifications for the Belt and Road Initiative(BRI). On the surface, with the establishment of the Asia Infrastructure Investment Bank(AIIB), the BRI's peaceful and economic aspects defy many. However, the illusion arises from our overlook of how the BRI has been converging with the Chinese scheme of protecting its growing "overseas interests(*haiwai liyi*)" in the past few years[37].

The notion of "overseas interests" is nothing new in Chinese diplomacy. It started to receive recognition from the Chinese authority as the PRC embarked on a so-called "*zouchuqu*(going abroad)" strategy designed to facilitate the PRC's outreach to foreign oil and gas fields in the early 21st century. It would not be until 2011 when the Chinese authority would recognize the need to strengthen its "overseas interest" protection measures[38]. Libya went into turmoil and 36,000 Chinese workers at the time had to be evacuated. The incident was a turning point in PRC's realization of the necessity to have a better contingency plan to protect its "overseas interests"[39][40][41]. Then, only 2 years later, the BRI was introduced by Xi Jinping.

Since 2014, the Chinese government has promoted a discourse on military security as a premise of the BRI's success. There were two occasions in 2019 when the discourse was proactively sought: One was the Fifth National Maritime Defense Conference, and the other was the Central Economic Cooperation Conference. Xi himself attended the former, and reportedly said that efforts should be made to integrate various security archives in the areas of politics, military, legislation, economic and ecological environments, as the BRI strategic initiatives are fostering a traditional unified maritime defense[42].

This led to the explanation that the security concept of the PRC's maritime defense governance should be urged to shift from the traditional "defense posture" to the modern vision of "active utilization"[43]. In other words, the geopolitical function of maritime defense should be shifted from the management of national administration to the exploitation of national strategic interests[44]. Xi emphasized this by introducing a diversified modern defense concept that could oversee the offshore defense[45].

At the latter meeting, the Chinese Communist Party called for a "strategic enactment plan," dividing participant areas into three areas: core areas(Central Asia), extended areas(South Asia and Eastern Europe), and radiant areas(Europe). At the same time, the sea range was covered from the Indian Ocean to the Persian Gulf and the Red Sea. Thus, the scope of China's overseas interests in the one-to-one region of the Communist Party begins with a geographical thinking that encompasses both Eurasia and Africa[46].

The discourse about connecting the BRI to military readiness within the Communist Party and the government began to spread to the military. The discourse within the People's Liberation Army(PLA) was focused on justifying the construction of outposts for military operations in the PRC and on a one-to-one basis and rationalizing existing government principles against the establishment of foreign military bases. The main reason why the contradictions between the two discourses could be totally eliminated was the change in the Chinese military's perception of its international political position.

At the meeting, an active duty general of the PLA emphasized that the shift in the perception that the PRC is now out of regional power and becoming a global power strengthens the necessity and legitimacy of foreign military bases. One interesting fact is that in overturning the existing government's position and principles, and explaining the legitimacy of the PRC's overseas base construction with its historical mission, it differentiates itself from its strategy. The PRC's differentiation strategy is demonstrated by two facts.

The first difference is that all these military activities proceed in terms of the PRC's legitimate rights. This is explained by the Chinese military's right to use foreign ports and aerodromes, and to use them fairly without violating its territorial sea and airspace sovereignty. In other words, because they are built in accordance with the principles of international law and the right to use ports, it is not necessary to maintain 500 overseas bases and 8-90 SOFAs.

The second difference is that there are inherent differences from U.S. military bases abroad. The PRC does not need to pursue the long-term overseas presence of the PLA or the prolongation of these bases as military bases like the U.S. At the same time, the use of these bases by the Chinese army is justified for two reasons. In other words, it emphasizes that the basic mission is to maintain anti-terrorism and peace in regions and countries[47]. It is emphasized as a responsible act of fulfilling the duties and missions given as a large country[48].

The PRC emphasizes that such responsible actions are not unilateral and arbitrary. This is because the PRC's principle of sending troops abroad proceeds according to international principles. The PRC maintains its position to send troops overseas based on three principles: First, it adheres to the principle of dispatching troops within the scope of compliance with UN resolutions. Second, the request of the dispatching party must be premised. Third, it must proceed within a multilateral framework[48]. At the same time, even if requested by the dispatching party, a multilateral response is required to participate.

Nevertheless, as the PLA's involvement in the PRC's one-on-one project expands, doubts about the purpose of expanding overseas military bases have been raised. The main reason for this is that the PRC's one-on-one military action in business areas is inconsistent. Although the presence of Chinese troops in these areas is long-term and not large, the military presence is strengthening day by day.

The PRC secured military bases in Pakistan's Gwardar Port, beginning with securing military expiration bases in Djibouti in Africa in 2010. Djibouti's ports and Gwadar's ports were handed over to China for long-term leases of 99 and 43 years, respectively, due to failure to pay off debt. Reportedly, Djibouti has already built a military facility that can accommodate 3,000 to 4,000 troops. In 2017, the PLA used a large tank mobilization for military training in Djibouti.

Prior to these meetings, the Chinese authorities have remained relatively quiet about the BRI's military security features and implications. But with the rise of the PRC, the sense of insecurity in neighboring countries is growing, and Beijing is doing its best to alleviate such concerns by highlighting the BRI's economic aspects. Recently, however, the PRC started to look like it was losing its grip. This is largely because the premise of the BRI's demand for openness is exposing the PRC to non-traditional security threats. Along with this, traditional security threats have recently been aggravating, and in turn, the BRI process is naturally enhancing its call for the PRC's military readiness.

On the non-traditional security front, better border management to protect interests in the Chinese definition of "freedom of navigation" and "safety of navigation" against the rise of the so-called "three threats" of ethnic separatism, terrorism, and religious extremism. The purpose also contains some economic aspects such as sustaining stable and smooth transportation routes for energy resources in the context of non-traditional security interests. Toward this end, the PRC was proud to declare that it completed its mission to defend the voyages of more than 6,700 ships by sending 34 naval squadrons as of December 2019[49].

Nevertheless, the ongoing construction and fortification of the PRC's military bases along some BRI routes are explicit, thereby prompting concerns by regional states. In 2010, the construction of a military base in the South China Sea began in earnest. The first overseas port base for the People's Liberation Navy was in Djibouti, Africa. Efforts to build these marine military bases are racing on two routes. According to a BRI route map released in 2015, one route extends to the Indian Ocean and the other to the South Pacific, where the bifurcation is the South China Sea in Southeast Asia.

In the U.S. media, the dynamics of the PRC's military bases were also detected in the vicinity of the economic corridor, which connects the PRC's Xinjiang region with Afghanistan's Wakhan region. Similar Chinese actions were observed on Tajikistan's border with Afghanistan. According to Australian media, negotiations on building a military base for the PRC have even been reported in the small South Pacific country of Vanuatu. Vanuatu is considered a country of strategic value, considering the geographical distribution of the South Pacific archipelago and the country 2,000 km away from Australia.

Concerns over the PRC's military expansion are growing. In March 2019, the PRC established a BRI relationship with Italy and agreed to build port facilities and investment projects in Trieste, which is located on the border with Slovenia, Genova, which is adjacent to France, Palermo in Sicily, and Ra-

venna, which faces the northern Adriatic Sea. For the PRC, it has been a big step forward in establishing a foothold for its entry into the Mediterranean, one of the key areas of the maritime Silk Road. Western analysts have suggested a "Trojan horse" for the PRC to enter Italy. At the same time, it raised concerns that the occasion is providing a foundation for the Chinese military's pursuit of the so-called "pearl necklace" strategy.

The PRC's BRI military strategy is not just about physical expansion of these military uses. There are implications for further strategic geographic space and ideas[50]. For example, the PRC has a double-track idea to actively use it to check Afghanistan and India by expanding military relations with Pakistan. In Southwest Asia, the PRC is firmly committed to defending geopolitical strategic interests in India and Afghanistan by taking full advantage of Pakistan's all-weather partnership. It is a strategy that uses the contradiction between India and Pakistan as a force to check India in its conflict with India. At the same time, the PRC will move to Southwest Asia, reducing the pressure on India. The strategy is to expand strategic security interests in Western China by collaborating with Pakistan on terrorism in Afghanistan[51].

The idea that the PRC will combine its business and military powers with the BRI and fulfill its obligations and responsibilities as a large power is considered a response strategy by the Chinese military to counter the "Indo-Pacific" strategy of the U.S. and Japan. The Chinese military is looking for the reason why the two countries have pushed ahead with the "Indo-Pacific" strategy since 2010 in response to the PRC overpowering Japan. Since disputes over territorial sovereignty and conflicts in the South China Sea have been unfavorable due to the rise of the Chinese navy, the "Indo-Pacific" strategy has been initiated as an inevitable strategy for strengthening their checks with the PRC[52].

Therefore, the expansion of the scope of overseas military activities will continue in the name of protection of business and overseas profits. If a summit forum was held one-on-one this year to dispel suspicion of Western China's "debt diplomacy," the forum, which will be held in two years, will be a propaganda forum to reduce concerns about the PRC's expansion efforts. The ROK military authorities will have to closely observe the dynamics of the Chinese military on the BRI, and strengthen Korea's strategic thinking and voice in discussing this issue with our allies before the BRI summit forum is held.

The PRC has long been obsessed with America's containment policy at the advent of the Korean War. Shortly into the war, the U.S. decided to sign alliance treaties with states it perceived to be critical to its strategic security interests in the areas around the Korean Peninsula. It first signed an alliance treaty with the Philippines in August of 1951, ANZUS and Japan in September, the ROK in 1953, SEATO in 1954 and Taiwan in 1955. No doubt the Korean War drove the United States to the formation of alliances with these states and regions. The outbreak of the war also prompted the U.S. to seek military and defense measures to protect the inception of the San Francisco Treaty in 1951.

SEATO, the first regional security organization, was founded with an aim to more effectively preserve the foundation of the regional order based on the treaty. Washington apparently wanted the organization to be a collective defense shield against communist expansionism in the region. Just like the North Atlantic Treaty was transformed into a military organization in the aftermath of the Korean War[53], Washington envisioned the need for a similar defense establishment for political and economic reasons.

The U.S. was much more preoccupied with the economic reconstruction of Western European states and their defense against the Soviet Union at the time. It could only less afford to do so in East Asia, and especially following the war when it ended. Thus, Washington wanted to incorporate ANZUS into the defense scheme of SEATO along with Britain and France, which opposed the invitation. Japan at the time was not in any position to assume any military and defense duties and responsibilities on behalf of SEATO.

Despite U.S. failure to transform the "hub and spoke" structure of its alliance system into a more or less collective form such as NATO and METO(founded in 1955 and later renamed CENTO in 1959), the bilateral alliance system was deemed efficient enough to deter communist expansion into Southeast Asia and Northeast Asia from the Asian continent. From Beijing's perspective, America's alliance structure, which stretched from Japan to the ROK to Taiwan and the Philippines, was a formidable

defense line.

It was an emulation of the so-called "Acheson Line," only including more geopolitically and geo-strategically vital states and regions with a much more formidable U.S. military presence in the respective allies. The sheer size of military personnel and sheer power of weapons including nuclear weapons deployed by the U.S. simply overwhelmed both the PRC and the Soviet Union[54]. It was particularly the case with the PRC as Beijing's anxiety over security became evident in its decision to pursue nuclear weapons in 1955.

America's scheme, which I'd call it an "unfinished business of 1955" of building an intra-alliance system in Asia, is being revived in the Indo-Pacific strategy. Successive amendments to the U.S.-Japan alliance treaty over 60 years has put Japan in a better position to assume a military partner role and responsibility commensurate with its economic status and diplomatic influence. Furthermore, ANZUS and Japan have been successful in moving towards greater security cooperative relations, as evidenced by the so-called "QUAD," a quadrilateral security cooperation establishment. Now the four states are enticing India to join.

Although the core states of the Indo-Pacific strategy have claimed the strategy is not security oriented, their presentation of the strategy is more than often lopsided to defense concerns and security issues[55]. However economic aspects are emphasized, the strategy always concludes on a military dimension so as to explain that the military needs to protect economic interests[56][57]. The strategy's emphasis on the need to protect sea lanes to guarantee the freedom of navigation, for example, depicts its inherent security aspects of regression instinct. For these reasons, there are clearly more reasons for the PRC to believe it is another scheme by the regional states to contain the PRC.

5. Conclusion

The one major reason why the ROK often finds itself stuck in a dilemma between the U.S. and the PRC is fundamentally because the politicians do not know how to be bipartisan about their nation's security interests. Emotional sympathy and sentiment towards the DPRK cannot come in as a determinant. There is only room for them within the confines of the human rights situation in the DPRK. Without bipartisanship in the policy-making community of the ROK, it is most likely that the ROK will remain in this dilemma for good.

What the ROK needs to confront is the obvious reality that the PRC is a communist country. It is a country that upholds values and ideology that are not compatible with those of democracy. The stone-cold reality is that the PRC will never see and perceive Korea's interests in the same way. The ROK will have to admit and accept it against its will. Ideology and values dictate one's cognitive learning, perception building process and therefore the end result of perception. As a result, one's behavior will have to be different from others that have different values and ideologies.

Therefore, to overcome the dilemma that it conceives itself to be in the ROK must consider the following. First of all, the ROK must consider some of the following PRC will not change as long as the CCP remains in power and the Party upholds communism. The PRC will continue to wage an ideological struggle with others. It will continue to attempt to decouple alliances that it perceives to be encircling it. It will continue to seek ways to expel U.S. forces from its vicinity and dominate its surrounding regions and areas. Remember Xi's 19th Party Congress report in which he declared that the PRC's order includes not only the surrounding areas, but also cyber space and outer space.

Secondly, the ROK must expand its concept of the alliance to something beyond military cooperation. Opportunities for cooperation in areas other than security are bountiful. From non-traditional security issues to traditional security issues, from world heritages protection efforts to environmental protection, there are many issues and areas where the ROK-U.S. alliance can contribute to the well-being of humanity. Unfortunately, the ROK has restricted its own concept of alliance to the confines of security and defense. It must now overcome the restrictions it has put on itself and think globally with its ally since it can now afford to do so.

Lastly, there will soon be a fundamental change in the ROK's trade structure with the U.S. and PRC.

One indicator lies in the persistent shrinking of the ROK's surplus in these two markets. The ROK's industry has yet to do a complete makeover and therefore relies on a limited number of goods for export. Without a fundamental change in the ROK's export structure, it will be difficult to expect the surplus to recover in the foreseeable future. Therefore, ROK's the dilemma between the U.S. and PRC will transpire into something unprecedented. It can be assured by the way the fourth industry is transforming that it will no longer be an economic market and security dependence. The strongest recommendation at this particular juncture is to check whether we are willing to defend our values and ideology.

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7. Appendix

7.1. Authors contribution

	Initial name	Contribution
Lead Author	JC	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑
Corresponding Author*	IY	-Play a decisive role in modification ☑ -Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑