International journal of military affairs

Vol. 8

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J-INSTITUTE

International Journal of Military Affairs

Publisher: J-INSTITUTE ISSN: 2423-8775

Website: j-institute.org Editor: admin@j-institute.org

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DOI Address: dx.doi.org/10.22471/military.2023.8.01



National Security Perceptions of Korean University Students

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Abstract

Purpose: Korean university students have a special interest in security issues, understand the importance of Northeast Asian and foreign situations and national security, and have a sense of responsibility. This is because Korean university students recognized the importance of security through service in the military, and they are aware of security threats and espionage activities even after being discharged. Therefore, by publishing this thesis in English, we intend to contribute to prosperity and peace by sharing information on the security awareness of Korean university students with researchers around the world.

Method: Frequency analysis was conducted to identify general characteristics using the SPSS/PC+23.0 program, and Cronbach's α coefficient was calculated to verify the reliability of the questionnaire. In addition, Factor Analysis, Correlation Analysis, and Simple Linear Regression Analysis were conducted on Korean university students' perception of counterespionage activities, security reporting methods, threats from neighboring countries, and the role of the government.

Results: 'Threat and awareness' factors were extracted for Korean university students' perception of counterintelligence activities, and 'public factors' and 'personal factors' were extracted for security reporting methods. As major national threats, 'dictatorship' and 'liberal democracy' were classified and extracted, and the government's role was extracted as requiring 'joint response'. Perception of counterintelligence activities correlated with security reporting methods, threats from neighboring countries, and the role of the government. There was also a significant correlation between security reporting methods, threats from neighboring countries, and the role of the government. As a result of simple linear regression analysis, it was found that counterintelligence activity perception affects the method of reporting security, threats from neighboring countries, and the role of the government.

Conclusion: Korean university students are aware of threats from neighboring countries, and Korea's military service system is important for raising awareness of the importance of national security through mandatory service in the army and training in the reserves. Korean university students have negative perceptions of the dictatorships of neighboring countries North Korea and China, are aware of China's espionage and cyber psychological warfare, and are aware of the reality by watching TV broadcasts featuring North Korean defectors, and are fully aware of the threat. In response to these threats, Korean university students aspire for stability and prosperity in Northeast Asia through joint responses by government departments.

Keywords: Security Perspectives of Korean University Students, Perceptions of Counterintelligence Activities, Security Reporting Methods, Threats from Neighboring Countries, Government Role

1. Need for the Study

Korean university students have a high interest in security issues, mainly understanding the importance of foreign affairs and national security, and having a sense of responsibility for ensuring national security[1][2][3][4][5].

Korean university students have a mindset to participate in counterintelligence activities to contribute to national security[6][7]. The reason is that under Korean law, all young men are obliged to serve in the military, and during that time, they are firmly aware of the importance of national security[8][9][10][11]. A good example is knowing how to report certain security risks or suspicious activity to relevant authorities even after leaving the military[12][13].

Essentially, North Korea's isolation situation and China's influence are considered as threats to neighboring countries surrounding South Korea[14][15][16][17][18], and North Korea is developing nuclear weapons, missiles, and supporting North Korea. Not only is it aware of the threat to South Korea's security through China, but it is also fully aware of espionage activities occurring in Korea[19][20].

Therefore, Korean university students believe that the government should not only respond jointly to security issues, cooperate with the international community and strengthen relations with allies, but also consider cooperation with private organizations to enhance security-related capabilities.

However, until now, research on this topic has not been conducted much in Korea, and it is extremely rare to publish the results of a survey conducted on Korean university students in English, such as this study. Therefore, we empirically explored the security perspective of Korean university students, which can provide information on the security perception of Korean university students to researchers around the world.

2. Research Method

2.1. Subject of research and sampling method

In this study, the population was university students majoring in security science at a university in the Daegu-Gyeongbuk region of Korea, and the sampling method was to survey 150 people by the convenience sampling method and surveyed by the self-administration method. A survey was conducted, and among the collected questionnaires of 150 respondents, 136 questionnaires were used as a valid sample, excluding data with insincere responses or partial omissions in the survey contents.

	Division	N(%)	Total	
Condor	Male	100(73.5)	136	
Gender	Gender Female		130	
	First year of university	39(28.7)		
Crede	Second year of university	62(45.6)	136	
Grade	Third year of university	33(24.3)		
	Fourth year of university	28(20.6)		
N dilite mu envience	Exist	25(18.4)	120	
Military experience	Non-existence	111(81.6)	136	
	Exist	23(16.9)	126	
Police 112 call experience	Non-existence	112(82.4)	136	

 Table 1. General characteristics of study subjects.

2.2. Research question

Data processing in this study is to collect distributed questionnaires, exclude data that are judged to be incomplete or unreliable from the research subject, input data that can be analysed

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individually into a computer, and then research hypotheses using the SPSS 23.0 Program, a statistical package program. Statistical verification was conducted as follows according to the purpose of data analysis and data analysis.

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

Second, Cronbach's α coefficient was calculated to verify the reliability of the questionnaire.

Third, a factor analysis was conducted on the perception of counterintelligence activities by Korean university students, security reporting method, threats from neighboring countries, and the role of the government.

Fourth, a correlation analysis was conducted to explore the relative influence among Korean university students' perception of counterespionage activities, security reporting methods, threats from neighboring countries, and the role of the government.

Fifth, a Simple Linear Regression Analysis was conducted to explore the influence of Korean university students' perception of counterespionage activities, security reporting methods, threats from neighboring countries, and the role of the government.

2.3. Survey tool

2.3.1. Contents of the questionnaire

A questionnaire was used as a survey tool to achieve the purpose of this study, and the details are as follows.

	Question	Cronbach's α
1	I know the meaning of the term counterintelligence.	
2	I have heard of the existence and dangers of foreign spies operating in the country.	
3	I believe that there is a possibility that foreign spies may develop domestic espionage activities.	
4	I believe that our allies, including the United States, can also conduct espionage activities against our country.	050
5	I think our people's wariness of foreign spies exists.	.858
6	I think that foreign espionage activities are currently unfolding in Korea.	
7	I believe that not only diplomats but also foreign lecturers, international students or ordinary office workers can become foreign spies.	
8	I believe that there will be individuals or groups among our people who support foreign spies.	

 Table 2. Perception of counterespionage activities.

Table 3. Security reporting method.

	Question	Cronbach's α
1	I am aware of the existence of the phone number 111.	
2	I have experience in security-related education from elementary school to the present.	.701
3	I think the government needs to publicize the dangers and countermeasures of foreign spies a little more to the public.	

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4	I think public service announcements using advertisements and posters on subways and buses will be effective.
5	I think indirect promotion methods using multiple media such as TV news, movies, dramas and youtube will be effective.
6	I think it would be effective to operate educational programs such as public lectures led by government departments.

Table 4. Threats from neighboring countries.

Question		Cronbach's α
1	I think the country that threatens security will be 'North Korea'.	
2	I think the country that threatens security will be 'China'.	
3	I think the country that threatens security will be 'China'.	.748
4	I think the country that threatens security will be 'Japan'.	
5	I think the country that threatens security will be 'US'.	

Table 5. Role of government.

	Question	Cronbach's α
1	I think it is appropriate for counterintelligence activities against foreign spies to be carried out by the ministry of national defense.	
2	I think it is appropriate to carry out counterintelligence activities against foreign spies by the 'police'.	.576
3	I think it is appropriate to carry out counterintelligence activities against foreign spies by the national intelligence service.	

2.3.2. Questionnaire validity and reliability

In this study, an appropriate method was selected for each verification method to increase the content validity of the questionnaire and to verify the construct validity. The content validity was secured through consultation with experts in the related research field to adopt the questionnaire items suitable for the purpose of this study.

Reliability is the degree to which an individual's score appears consistently when the same test or an isotype is repeated. Reliability is related to stability and consistency in establishing research methods, and it is one of the most important factors in this study because it is a matter of whether manipulated definitions or indicators measure the subject of measurement consistently and reliably. In, reliability was verified based on the results of the survey questions and reliability was analyzed using Cronbach's α coefficient.

3. Results

3.1. Factor analysis

3.1.1. Perceptions of counterintelligence activities among Korean university students

In order to identify the construct validity of 8 items on the anti-espionage awareness scale items of Korean university students, exploratory factor analysis(EFA) was conducted to extract latent factors, and finally, the sample fit(MSA) of 6 items excluding Q1 and Q5 items is 0.886, so it can be said that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, x^2 =401.158, p=0.000, with a significance level of 0.05, the correlation between the 'counterintelligence activity perception' scale variables was recognized, and overall factor analysis was possible. Accordingly, one sub-factor was extracted, and the factor of the 'counterintelligence activity perception' scale was named 'threat and awareness'.

 Table 6. Goodness of fit(MSA) test of KMO.

Goodness of fit(MSA) test of KMO	0.886		
	Approx x ²	401.158	
Bartlett's sphericity test	Degrees of freedom(df)	15	
	p	.000****	

Note: *p<.05, **p<.01, ***p<.001.

Table 7. Factor analysis result.

Question item	Commonality	Factor
Perception of counterintelligence activities Q6.	.753	.868
Perception of counterintelligence activities Q3.	.743	.862
Perception of counterintelligence activities Q4.	.657	.810
Perception of counterintelligence activities Q7.	.591	.769
Perception of counterintelligence activities Q8.	.583	.764
Perception of counterintelligence activities Q2.	.734	.862
Factor name	Threat and awareness	
Eigenvalue	3.797	
Dispersion ratio	63.296	
Cumulative variance ratio		63.276

Note: Extraction method: CFA(common factor analysis).

3.1.2. How Korean university students report security

An exploratory factor analysis(EFA) was conducted to determine the validity of six constructs on the security reporting method scale items of Korean university students, and the sample fit(MSA) of the items was 0.723, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, $x^2=147.985$, p=0.000, with a significance level of 0.05, the correlation between the 'security reporting method' scale variables was recognized, and overall factor analysis was possible. Accordingly, two sub-factors were extracted, and the factors of the 'Security Reporting Method' scale were named 'Public Factor' and 'Personal Factor'.

 Table 8. Goodness of fit(MSA) test of KMO.

Goodness of fit(MSA) test of KMO	0.723		
	Approx x ²	147.985	
Bartlett's sphericity test	Degrees of freedom(df)	15	
	p	.000***	

Note :*p<.05, **p<.01, ***p<.001.

Table 9. Factor analysis result.

Question item	Commonality	Factor	
Security reporting method Q5.	.580	.754	105
Security reporting method Q6.	.546	.690	265
Security reporting method Q3.	.512	.673	245
Security reporting method Q4.	.534	.648	339
Security reporting method Q2.	.653	.631	.504
Security reporting method Q1.	.783	.421	.779
Factor name		Public factor	Personal factors
Eigenvalue		2.493	1.116
Dispersion ratio		41.543	18.607
Cumulative variance ratio		41.543	60.150

Note: Extraction method: CFA(common factor analysis).

3.1.3. Major national threats of Korean university students

An exploratory factor analysis(EFA) was conducted to determine the validity of the five items of the Major National Threat Scale of Korean university students, and the sample fit(MSA) of the items was 0.679, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, x^2 =193.161, p=0.000, with a significance level of 0.05, the correlation between the 'major state threats' scale variables was recognized, and overall factor analysis was possible. Accordingly, two sub-factors were extracted, and the factors of the 'major state threat' scale were named 'dictatorship' and 'liberal democracy'.

Table 10. Goodness of fit(MSA) test of KMO.

Goodness of fit(MSA) test of KMO	0.679		
	Approx x ²	193.161	
Bartlett's sphericity test	Degrees of freedom(df)	10	
	p	.000***	

Note :*p<.05, **p<.01, ***p<.001.

Table 11. Factor analysis result.

Question item	Commonality	Factor	
Major national threats Q3.	.716	.836	128
Major national threats Q5.	.810	.694	573
Major national threats Q4.	.538	.668	302
Major national threats Q2.	.740	.761	.402
Major national threats Q1.	.826	.559	.714
Factor n	Factor name		A liberal democracy
Eigenva	Eigenvalue		1.110
Dispersior	Dispersion ratio		22.195
Cumulative variance ratio		50.382	72.577

Note: Extraction method: CFA(common factor analysis).

3.1.4. Recognize the role of government

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Exploratory factor analysis(EFA) was conducted to determine the validity of the three constructs on the government role scale of Korean university students, and the sample fit(MSA) of the item was 0.560, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, x^2 =42.726, p=0.000, with a significance level of 0.05, the correlation between the 'role of government' scale variables was recognized, and overall factor analysis was possible. Accordingly, one sub-factor was extracted, and the factor of the 'Government's Role' scale was named 'Joint Response'.

Goodness of fit(MSA) test of KMO	0.560			
	Approx x ²	42.726		
Bartlett's sphericity test	Degrees of freedom(df)	3		
	p	.000***		

Table 12. Goodness of fit(MSA) test of KMO.

Note :*p<.05, **p<.01, ***p<.001.

Table 13. Factor analysis result.

Question item	Commonality	Factor	
Role of government Q1.	.697	.835	
Role of government Q2.	.452	.693	
Role of government Q3480		.672	
Factor	name	Joint response	
Eigen	value	1.629	
Dispersi	on ratio	54.312	
Cumulative v	ariance ratio	54.312	

Note: Extraction method: CFA(common factor analysis).

3.2. Correlation

Table 14. Correlation analysis.

	Counterintelligence activity perception	Security reporting method	Threats from neighboring countries	Role of government
Counterintelligence activity perception	1			
Security reporting method	0.436***	1		
Threats from neighboring countries	0.469***	0.373***	1	
Role of government	0.204*	0.229**	0.322***	1

Note: *p<.05, **p<.01, ***p<.001.

In order to understand the relative influence among Korean university students' perception of counterintelligence, security report method, threats from neighboring countries, and the role of the government, Pearson's correlation analysis was conducted to find out the correlation between the four variables.

As a result, 'counterintelligence activity perception' was found to have a statistically significant correlation with security report method r=0.436, p=0.000, neighboring country threat r=0.469, p=0.000, and government's role r=0.204, p=0.017. 007Statistically significant correla-

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tions were confirmed. Neighboring threats were found to have a statistically significant correlation with the government's role, r=0.322, p=0.000.

3.3. Regression analysis

3.3.1. Perception of counterintelligence activities and security reporting methods

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			
(A constant)	2.161	0.233		9.695***		
Counterintelligence activity perception (independent variable)	0.372	0.066	0.436	5.607***	31.434***	0.190

 Table 15. The effect of counterintelligence perception on security reporting method.

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether Korean university students' perception of counterintelligence had an impact on the security reporting method.

As a result of the analysis, F=31.434(p<.001) indicates that this regression model is suitable. As β =0.436, it was found to have an effect of 43.6%, and as R²=0.190, it showed 19.0% explanatory power.

3.3.2. Perception of counterintelligence activities and threats to neighboring countries

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			
(A constant)	1.889	0.235		8.028***		
Counterintelligence activity perception (independent variable)	0.429	0.070	0.469	6.139***	37.689***	0.220

 Table 16. Effects of counterintelligence perceptions on neighboring threats.

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether the perception of counterespionage activities by Korean university students has an impact on the threat of neighboring countries.

As a result of the analysis, F=37.689(p<.001) indicates that this regression model is suitable. As θ =0.469, it was found to have an effect of 46.9%, and as R²=0.220, it showed 22.0% explanatory power.

3.3.3. Perception of counterintelligence and the role of the government

 Table 17. The effect of counterintelligence perceptions on the government's role.

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			
(A constant)	2.999	0.262		11.441***		
Counterintelligence activity perception (independent variable)	0.188	0.078	0.204	2.415*	5.830 [*]	0.042

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether Korean university students' perception of counterintelligence had an impact on the government's role.

As a result of the analysis, F=5.830(p<.05) indicates that this regression model is suitable. As θ =0.204, it was found to have an effect of 20.4%, and as R²=0.042, it showed 4.2% explanatory power.

3.3.4. Security reporting method and threats to neighboring countries

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			l
(A constant)	1.942	0.297		6.550***		
Security reporting method (independent variable)	0.401	0.086	0.373	4.648***	21.601***	0.139

Table 18. Effects of security reporting methods on neighboring threats.

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether the security reporting method of Korean university students has an impact on the threat of neighboring countries.

As a result of the analysis, F=21.601(p<.001) indicates that this regression model is suitable. As θ =0.373, it was found to have an effect of 37.3%, and as R²=0.139, it showed 13.9% explanatory power.

3.3.5. Security reporting method and the role of the government

 Table 19. Effects of security reporting methods on the government's role.

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			
(A constant)	2.780	0.313		8.889***		
Security reporting method (independent variable)	0.247	0.091	0.229	2.719**	7.392**	0.052

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether the security reporting method of Korean university students has an impact on the role of the government.

As a result of the analysis, F=7.392(p<.01) indicates that this regression model is suitable. As β =0.229, it was found to have an effect of 22.9%, and as R^2=0.052, it showed 5.2% explanatory power.

3.3.6. Threats from neighboring countries and the role of the government

 Table 20. Impact of neighboring threats on government roles.

Variable	Unstandardized coefficient		Standardization factor	t(p)	F(p)	R ²
	В	SE	в			l
(A constant)	2.548	0.277		9.201***		
Threat from neighboring countries (independent variable)	0.324	0.082	0.322	3.936***	15.492***	0.104

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether the threat of neighboring countries of Korean university students affects the role of the government.

As a result of the analysis, F=15.492(p<.001) indicates that this regression model is suitable. As θ =0.322, it was found to have an effect of 32.2%, and as R²=0.104, it showed 10.4% explanatory power.

4. Result

First, a factor analysis was conducted to extract one sub-factor for Korean university students' perception of counterespionage activities, which was named 'threat and awareness', and two sub-factors for Korean university students' security reporting method were extracted, which were named 'public factor' and 'personal factor'. In addition, two sub-factors of major state threats of Korean university students were extracted, and they were named 'dictatorship' and 'liberal democracy'. Lastly, one sub-factor for the government's role perceived by Korean university students was extracted and named 'joint response'.

Second, by conducting Pearson's correlation analysis, Korean university students' 'perception of counterespionage activities' was found to have a statistically significant correlation with security reporting methods, threats from neighboring countries, and the role of the government. Also, 'threat from neighboring countries' was confirmed to have a significant correlation with the government's role.

Third, by conducting a simple linear regression analysis, it was found that the perception of counterintelligence activities by Korean university students affects the security reporting method by 43.6%, and the explanatory power was 19.0%. It was found that Korean university students' perception of counterintelligence had an effect on the threat of neighboring countries by 46.9%, and showed 22.0% explanatory power. It was found that Korean university students' perception of counterintelligence had an effect on the role of the government by 20.4%, with an explanatory power of 4.2%. It was found that the security reporting method of Korean university students had an effect on the threat of neighboring countries by 37.3%, and showed an explanatory power of 13.9%. It was found that the security report method of Korean university students had an effect on the government's role by 22.9%, with an explanatory power of 5.2%. It was found that the threat of neighboring countries of Korean university students had an effect on the government's role by 22.9%, with an explanatory power of 5.2%. It was found that the threat of neighboring countries of Korean university students had an effect on the government's role by 22.9%, with an explanatory power of 5.2%.

5. Conclusion

First, the impact of compulsory military service of Korean university students on security perception.

Korean university students have a high level of awareness of threats to counterintelligence in neighboring countries. Awareness of North Korea's counterintelligence activities is growing, and university students in particular are paying attention to North Korean and Chinese propaganda and espionage activities, and have concerns about China's information theft and expansion of economic and military influence.

Against this background, Korean university students seem to be firmly aware of the importance of national security during which all young males in Korea are obliged to serve in the military according to Korean law[21]. In addition, even after being discharged from the military, they are organized as reserve forces and continue training until the age of 40. This environment is increasing the perception of threats to counterintelligence by neighboring countries, and can be said to be a factor that can affect national security.

Second, South Korean university students' aversion to armed oppression by North Korea and China according to their liberal ideology

South Korean university students are fascinated by liberal ideologies such as BTS and therefore have an aversion to the dictatorships of North Korea and China. Hatred of North Korea is related to the Kim Jong-un regime's pseudo-religious dictatorship and its preoccupation with nuclear weapons and missile development amid human rights abuses. The North Korean regime started out claiming communism, but the rationing system was discontinued through the 'Arduous March' during the food crisis in the 1990s[22][23].

Figure 1. Korean unification specialized entertainment program <now I'm going to meet you>.



Note: <I'm going to see you now> is a unification specialized entertainment program broadcast on korea's channel A, and it was the first ever since the opening of a general programming channel. A communication variety program that reveals the reality of North Korean defectors who have been disconnected from North Korea since the Korean War and have now settled down as citizens of the Republic of Korea after overcoming the hurdles of defection, repatriation, and several deaths.

Hatred of China seems to be related to China's socialist political system, human rights issues, and control of neighboring countries through economic influence. In addition, korean university students are aware of China's espionage activities and cyber psychological warfare, and above all, they are contributing to maintaining the human rights violations of North Koreans by supporting North Korea militarily and economically to maintain the Kim regime.

Third, joint response by government departments.

The Korean government should further strengthen cooperation between government agencies and military agencies through an effective joint response to counterintelligence activities.

The National Intelligence Service(NIS), a South Korean intelligence investigation agency, monitors and analyzes domestic and foreign counterintelligence activities. The police are in charge of domestic investigations and arrests. In particular, as technological and psychological operations in cyberspace are increasing, and the majority of the people are using programs of private companies, cooperation with private companies has become more urgent for national security[24][25]. In addition, public-private partnerships can enhance information sharing, security technology development, cyber threat analysis, and enhance cyber response capabilities against counterintelligence.

At this point, it is transforming into a next-generation war where there is no distinction between wartime and peacetime. These threats are the concept of defense against all influences affecting security from physical threats to cyber threats, and joint response by government departments is more important. University students in South Korea are a generation that has been educated by their grandparents who experienced war due to North Korea's surprise invasion of the South about 70 years ago and their parents who grew up directly affected by the war. Through this experience, they are aware of the horrors of war, and they are also aware of the methods to deter such a brutal war.

The author of this study lives in a non-English-speaking region, so the purpose of translating the manuscript written in Korean into English and publishing it in an open access journal is to provide more researchers around the world with more information about university students.

In this way, understanding of university students in the region has academic value that can ultimately contribute to peace and prosperity by enabling the future and direction of Northeast Asia.

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7. Appendix

7.1. Author's contribution

	Initial name	Contribution
Author	SJ	 -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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International Journal of Military Affairs

Publisher: J-INSTITUTE ISSN: 2423-8775

Website: j-institute.org Editor: admin@j-institute.org

Corresponding author* E-mail: chj3050@naver.com

DOI Address: dx.doi.org/10.22471/military.2023.8.15



Major Issues and Response Strategies of UNC's Revitalization

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Abstract

Purpose: This study is to identify major issues related to the revitalization of the US-led UNC and to suggest an appropriate approach strategy for Republic of Korea(ROK).

Method: In this research, the history of the United Nations Command(UNC) was reviewed in accordance with the UN Security Council Resolution(UNSCR) enacted in response to the Korean War, which broke out due to North Korea's illegal and surprise invasion of the ROK. A literature review was conducted to identify major issues related to UNC's revitalization, and the reliability of the study was increased by using the Delphi technique in a qualitative way through a group of experts.

Results: Major issues for UNC revitalization were derived as follows. 1. United States' commitment to revitalize UNC, 2. Sustainability of UNC, 3. Establishment of chain of command between UNC and Future Combined Forces Command, 4. Scope of UNC member countries and participation of ROK forces in UNC Staff, 5. Declaration of the end of the Korean War, 6. Future UNC mission and role innovation.

Conclusion: Republic of Korea should actively participate in the revitalization of the UNC for the national interests based on strategic clarity even though the ROK is not a founding country of the UNC. The United States is willing to innovate the future mission and role of the UNC as a multinational peacekeeper capable of supporting a peace regime on the Korean Peninsula while maintaining its influence in East Asia. In conclusion, it is important that the UNC continue to support liberal democracy in the Republic of Korea and develop into a multinational peacekeeping force in East Asia.

Keywords: UNC's Revitalization, ROK & US Alliance, Wartime Operational Control Transition, Armistice Management, Peace Agreement, Strategic Clarity

1. Introduction

Efforts to restore the Republic of Korea and the United States(ROK-US) military alliance and trilateral military cooperation between ROK, US and Japan have been strengthened in response to North Korea's nuclear and weapons of mass destruction(WMD) threats since the inauguration of the Yoon Suk Yeol administration. Fortunately, combined and joint military exercises and large-scale field trainings have been normalized. Those regular military activities were reduced or suspended under the pretext of preventing the spread of Coronavirus disease(COVID-19) pandemic and improving inter-Korean relations during the previous Moon Jae-in administration.

Despite the evolutions in the dynamics of the Korean Peninsula and fluctuations of security environment in East Asia, the US has resolutely conducted exercises to revitalize the United Nations Command(UNC). The UNC was established on June 25, 1950 in accordance with the UN Security Council Resolution(UNSCR) to defend the free and democratic Republic of Korea from the brutal invasion of communist North Korea. Even after the armistice agreement was signed on July 27, 1953 and the Korean War ended, the UNC as an warfighting command continued to manage the armistice and carry out combat missions along the front line.

In response to changes in the international strategy of the US and the improvement of the ROK military capabilities, the ROK-US Combined Forces Command(CFC) was established on November 7, 1978, taking over operational control(OPCON) from the UNC, and the missions and roles of the UNC was reduced to armistice management and provision of force.

Following the transition of armistice operational control from the CFC to the ROK Joint Chiefs of Staff(ROK JCS), wartime operational control transition from the CFC to the Future CFC is also underway, and a new approach to the UNC's missions and roles are being pursued. This reflects the Strategic Flexibility and the Global Defense Posture Review(GPR) of the US, the request of the ROK government, the improvement of the ROK military capabilities, and the atmosphere of inter-Korean reconciliation[1].

Two discussions are ongoing throughout the entire ROK society. Considering the importance of the ROK-US alliance, it is necessary to revitalize the UNC as the warfighting command for effective and robust operational control, and the opposite is the dissolution of the UNC and the withdrawal of United States Forces Korea(USFK) to restore ROK's military sovereignty.

Even if the UNC is disbanded and ROK faces a national crisis, it is impossible to pass another UNSCR because opposition from China and Russia is expected[2]. Therefore, from the ROK's security perspective, the UNC's revitalization must be considered as a key issue. The US also needs to strategically promote the restoration of the UNC's missions and roles for East Asia's hegemony, peace, security, and disaster cooperation.

Previous studies on the UNC are as follows. 1. The legal status of the UNC in the establishment of the UNC in 1950, 2. The relationship between the UNC and the CFC after the activation of the CFC in 1978, 3. Transition of operational control from the US to the ROK, and 4. The mission and role's evolution of the UNC in the future. This study reviews and analyzes major issues in revitalization of the UNC and presents ROK's response strategy.

2. Establishment and Evolution of UNC

2.1. Establishment of UNC

On June 25, 1950, the Korean War broke out when communist North Korea launched an illegal surprise attack on the Republic of Korea. In response, the United Nations(UN) adopted Security Council Resolution(UNSCR) 82, which demanded an immediate cessation of North Korea's hostile actions and withdrawal north of the 38th parallel. When North Korea continued its aggression on June 27, the UN has passed UNSCR 83, which called for support from UN member states to restore peace and security on the Korean Peninsula^[3]. Based on these resolutions, UN member states such as the United States(US), United Kingdom(UK), Canada, Australia, New Zealand, and France decided to send military troops to ROK and began preparing for military deployment. On July 7, UNSCR 84 was adopted, calling for the establishment of a unified command led by the US to command UN forces for the restoration of peace on the Korean Peninsula. This resulted in the first-ever multinational UN force composed of 16 countries taking part in the war to restore peace on the Korean Peninsula. At the time of its establishment, the missions and roles of the UNC were to repel the North Korea's armed attacks and defend the Republic of Korea, support Korean unification, maintain and abide by the Armistice Agreement, and provide forces in the event of a Korean War-like situation on the Korean Peninsula. The major resolutions and agreements that provided the basis for the establishment and evolution of the UNC include UNSCR 82, 83, and 84, UN General Assembly Resolution 376 of October 7, 1950, the Armistice Agreement of July 27, 1953, and others[2][4]. The US established the UNC in Tokyo, Japan on July 24, 1950, in accordance with UNSCR 84.

On July 27, 1953, the Korean War ended with the signing of the Armistice Agreement, and the UNC entered a state of armistice. In order to resolve the issue of the status of UN forces

stationed in Japan, the UN and Japanese government signed the "Agreement Regarding the Status of United Nations Forces in Japan(UN-GOJ SOFA)" on February 19, 1954. This UN-GOJ SOFA serves as a legal basis for the UNC sending states to use the US military facilities and bases in Japan. In order to prevent the termination of the UN-GOJ SOFA and to continue to use US military bases in Japan for the purpose of supporting the unification of the Korean Peninsula and maintaining and abiding by the Armistice Agreement, the UNC established a "UN Rear Headquarters" while moving its headquarters from Tokyo, Japan to Yongsan, Seoul, on July 1, 1957. Since the establishment of the ROK-US Combined Forces Command(CFC) on November 7, 1978, the missions and roles of the UNC have been reduced to supporting the unification of the Korean Peninsula, maintaining and abiding by the Armistice Agreement, and providing forces in the event of a Korean War-like situation on the Korean Peninsula[3][5].

2.2. Evolution of UNC

As shown in the following <Figure 1>, the UNC is composed of four major organizations: the Military Armistice Commission(MAC), the Neutral Nations Supervisory Commission(NNSC), the UNC Rear Command(UNC-Rear), and the Multinational Coordination Center(MNCC)[6].

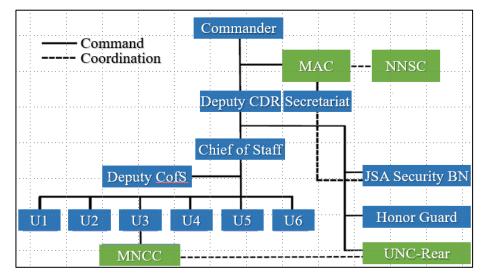


Figure 1. UNC's organization.

The first is the Military Armistice Commission(MAC). The MAC is jointly composed of the UNC forces and the representative from the communist military and oversees the implementation of the armistice agreement and cooperatively resolves any violations that occur. The second body is the Neutral Nations Supervisory Commission(NNSC), an independent organization separate from the UNC that works to maintain the armistice on the Korean Peninsula in conjunction with the MAC. The third is the UNC Rear Headquarters(UNC-Rear), which is located near the city of Tokyo, Japan, and according to the UN-GOJ SOFA would deploy UN sending states' military troops to the Korean Peninsula through seven bases in Japan, including Camp Zama, Yokota Air Base and Yokosuka Naval Base on Honshu, Sasebo Naval Base on Kyushu, Kadena Air Base, White Beach Naval Facility, and Futenma Marine Corps Air Station on Okinawa, supplying various military materials to UNC military troops in the Korea peninsula[5][7]. The fourth organization is the Multinational Coordination Center(MNCC), established in 2009 by benchmarking the US Central Command's multinational interoperability program. It facilitates communication and cooperation between the UNC headquarters and the Force Provider, as well as coordinates and controls the strategic RSO&I(Reception, Staging, Onward Movement and Integration) and logistics support for multinational forces. In the future, the role of the MNCC is expected to expand in conjunction with the reactivation of the UNC^[8].

3. Progress in Revitalizing the UNC

3.1. Expansion of the role of UNC sending states

The discussion on revitalizing the UNC was pursued in line with the US' efforts to transform its international strategy, strategic flexibility, and wartime operational control(OPCON) transition. In January 2003, US Secretary of Defense(SecDef) Rumsfeld instructed UNC Commander Laporte to explore ways more countries could contribute as UNC force providers. In a statement in September 2004, the UNC announced that it would further solidify its will, saying, "When the armistice ends and hostilities resume, the 16 UN member states will be reconstituted for a unified fight.". In March 2006, UNC Commander Bell stated at a US Senate Armed Services Committee defense budget hearing that the UNC would evolve into a stable multinational force. Since 2006, UNC has encouraged sending states to join the UNC Staff to form a multinational staff from in peacetime. In August 2007, military observers from the seven sending states participated in the UFG exercise for the first time, and many foreign military officers also were encouraged to participate in combined exercises on a regular basis [7][9]. To this end, the UNC organized and operated the UNC Multinational Coordination Center(MNCC) in March 2009 to benchmark the multinational interoperability program of the US Central Command(USCENT-COM). In July 2014, UNC Commander Scaparrotti officially announced the revitalization of the UNC and pursued a policy of enlarging UNC staff roles by filling them from UN member states. Since March 2016, UNC Commander Brooks has taken measures to decrease dual-hat staff positions between the UNC and the CFC while appointing a Canadian Major General as the deputy commander, the first non-US military officer to serve in the position since the establishment of the UNC. In addition, the UNC Commander Brooks made an all-out effort to increase UNC independence by opening more UNC command and staff positions. to UNC sending states such as the UK, Canada, and New Zealand. The number of multinational participants in combined exercises by UN member states is increasing. In 2016, a total of 171 military persons from the seven countries participated in the UFG exercise. This year's UFS exercise is also expected to increase multinational staff training.

3.2. Efforts to expand UNC's capacity

Currently, the UNC commander holds regular meetings such as the UNC Staff Working Group, the UNCMAC Advisory Group, and the UNC Ambassador Roundtable. The UNC also strengthens its external public relations activities by utilizing cutting-edge ICTs of the Fourth Industrial Revolution. Since 2020, the UNC has established its own website, and has used social media such as Twitter and Facebook to introduce various mission facts, such as the management of armistice agreements, activities of Philippine Soldiers in the UNC Honor Guard, support for UNC staff members engaged in mine-clearing operations, support for the deployment of New Zealand Air Force aircraft at the UNC rear base in Japan, and Australian frigate support from UNC rear naval base[10][11]. Ultimately, the US effort to revitalize the UNC can be summarized as follows: developing the UNC into a multinational force with the participation of many countries like during the Korean War, restoring the UNC's warfighting command function, and verifying and reinforcing UNC capabilities through combined exercises involving multinational forces.

4. Major Issues and ROK's Response for Revitalizing the UNC

4.1. US intention for UNC revitalization

Based on recent expert qualitative interviews and literature reviews, the purpose of the United States' revitalization of the UNC is estimated to be ① maintaining influence over the ROK military after the wartime operational control(OPCON) transition, ② evolving the UNC into

a multinational force to maintain international order in East Asia, ③ performing a role in providing UNC sending states in the event of a North Korea's military threats, and ④ reducing USFK's defense costs.

The key issues surrounding the revitalization of the UNC can be divided into five major areas: controversy over the UNC existence, establishment of a command relationship between the UNC and the Future CFC, scope of UNC member states and the ROK participation in the UNC staff, declaration of the end of the war, innovation in Future UNC Missions and Roles [12].

4.2. Sustainability of the united nations command

The existence of UNC is the subject of three ongoing debates. First, since the UNC's legal status was established by the UNSCR, it cannot be changed by any single country, such as the ROK or the US, and a new UNSCR is required to disband the UNC. Second, unlike the UN peace-keeping operations, the UNC is operated with the US budget and has no financial relationship with the UN, therefore the decision whether to continue or dismantle the UNC rests entirely with the US. Third, China and Russia, the communist blocs of the UN Security Council continues to claim the establishment of the UNC itself to be invalid [10][13].

North Korea is using the logic of China and Russia to demand the dismantlement of the UNC and early transition to a peace regime. In a speech to the UN General Assembly on September 29, 2018, North Korean Foreign Minister Ri Yong-ho insisted that the UNC is under the command of the US, not the UN and the US and North Korea are also negotiating over the dissolution of the UNC and the declaration of an end to the Korean War at the request of the US[5][14]. There is also a group in the ROK that sympathizes with North Korea's claim and demands the dissolution of the UNC. If the wartime OPCON transition and North Korea's denuclearization negotiations are successful, it could lead to progress in the declaration of the end of the Korean war. Once a peace treaty is signed, there is a high possibility of demands for the dissolution of the UNC at home and abroad.

The UNC cannot be dismantled unless a resolution is adopted by the UN Security Council(UNSC) and the US, with its veto power, can block such a resolution. Since the US has absolute influence over the UN community, the dissolution of the UNC cannot be discussed without the consent of the US. Although there are continuous calls for the dissolution of the UNC by some progressive forces in the ROK, it will not be easy to dismantle the UNC unless the US reverses its existing policy on the Korean Peninsula. ROK should strive to expand its status in the UN society based on the strong support of the ROK-US alliance. Furthermore, it is essential to actively publicize the strategic value of the UNC in order to prevent demands for the dismantlement of the UNC and anti- American sentiment.

4.3. Establishment of a command relationship between the UNC and the future CFC

The current wartime operational control(OPCON) transition is implemented while meeting three conditions: ROK's Core military capabilities, Alliance capabilities to respond to North Korea's nuclear missiles, Stability of the security environment on the Korean Peninsula and in East Asia.

As shown in the following <Figure 2>, after the transition of wartime OPCON, the command of the US 4-star general in the current US-led CFC will be succeeded to the ROK 4-star general in the Future ROK-led CFC(Future CFC)[6].

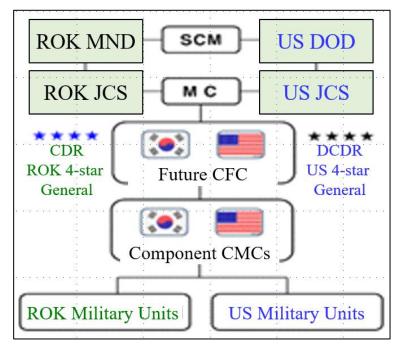


Figure 2. Combined chain of command structure after the wartime OPCON transition.

The current CFC commander will perform the duties of the Future CFC deputy commander and the UNC commander. In a crisis situation on the Korean Peninsula, the UNC's role remains to provide military troops from the UNC member states. When concerns were raised about the combatant command of the UNC in 2019, the UNC commander repeatedly emphasized that the UNC's role in a crisis on the Korean Peninsula is still in the military force's provision from the UNC member states[15][16].

The Future CFC will become the theater combined warfighting command in the Korean Theater of Operation(KTO) after the wartime OPCON transition. The UNC is a key partner of the Future CFC as it is an essential role for UNC member states. When the Future ROK-led CFC is activated, the relationship between the Future CFC and the UNC will change significantly from the current state. Therefore, it is necessary to develop a close policy coordination relationship between the Future CFC and the UNC.

4.4. Scope of the UNC member states and the ROK participation in the UNC staff

UNC member states are countries that participated in the Korean War. Currently, there are a total of 17 UNC member states, which are combat deployment countries and/or medical support countries. The 14 countries sending combat troops are the United States(US), the United Kingdom(UK), Canada, Türkiye(formerly Turkey), Australia, the Philippines, Thailand, the Netherlands, Colombia, Greece, New Zealand, Belgium, France, and South Africa, and the 3 countries providing medical support are Denmark, Norway, and Italy[2][5].

In the 2019 Strategic Digest, the UNC introduced its member states to 18 with the addition of the Republic of Korea: Australia, Belgium, Canada, Colombia, Denmark, France, Greece, Italy, Netherlands, New Zealand, Norway, Philippines, Republic of Korea(ROK), Africa, Thailand, Türkiye, United Kingdom(UK), and United States(US). The UNC also announced in a press release at the 2019 Media Day event held on April 18 that it had organized itself as a "multinational force that maintains stability on the Korean Peninsula" and included the Republic of Korea(ROK) as one of its 18 member states. This means that the UNC recognizes the ROK as a 'force-contributing country' that provides troops and equipment on the Korean Peninsula, just like other member states. The US prefers to use the term 'member country' instead of 'sending state' or 'force-contributing country' and refers to the ROK as one of the 18 UNC's member states in their

various meetings and activities. Some analysts say that it may not be appropriate to include ROK as a UNC member state because ROK is a host nation that operates the forces provided by the UNC during a crisis on the Korean Peninsula[9][16].

According to media reports, the UNC has requested the ROK government to send 20 officers to the UNC. This indicates that the UNC's plan to revitalize its organization includes expanding ROK's role within the UNC[7][14]. Therefore, it is necessary for ROK to review the dual position of being a party to the conflict and a member of the UNC from the perspective of national interest. As a host country and an official member of the UNC, the ROK must accurately grasp the overall activities of the UNC, share operations in real time, and maximize operational cooperation with fellow member states to enhance the efficiency of UNC multilateral operations.

Expanding and strengthening the appointment of ROK generals and officers to key UNC positions will serve the national interest. Then, it will be possible to work together with the UNC coalition staff in real time, and multilateral combined operation requirements can be smoothly reflected in the UNC operations. In addition, ROK should promote inter-Korean cooperation to maximize its influence within the UNC in order to overcome the reality that UNC operations are completely dependent on the US.

4.5. Declaration of the end of the Korean war

In the case of the declaration of the end of the Korean War and the conclusion of a peace treaty, the role of the UNC is essential. The declaration of an end to the war is a political act, and the signing of a peace treaty is a legal act.

The Panmunjom Declaration for Peace, Prosperity and Unification of the Korean Peninsula, agreed upon by former ROK President Moon Jae-in and North Korea Chairman Kim Jong-un on April 27, 2018. In particular, in Article 3, Paragraph 3 states that "The South and North Korea will declare the end of the war this year, which marks the 65th anniversary of the Armistice Treaty, and establish a lasting and solid peace regime by advancing three or four party talk involving the ROK, the North Korea, the US, and/or China to transform the present armistice into a peace regime."

There is an argument that since ROK did not sign the Armistice Agreement, it is not a party to the Armistice Agreement and therefore cannot be a party to the peace agreement. On the contrary, ROK was a party to the Korean War and participated in the Korean War as a member of the UNC, and the UNC commander signed the agreement as a representative[9][11]. In this context, it is very important for the ROK to promote a permanent and peaceful regime on the Korean Peninsula in which the ROK, the US, and the UNC respond with one voice based on a strong ROK-US alliance.

4.6. Innovation in future UNC missions and roles

After the declaration of the end of the war and the signing of the peace treaty, the existence of the UNC could be an issue. In fact, the declaration of an end to the war is a political agreement and does not affect the existence of the UNC. However, if the armistice agreement is replaced by a peace treaty, the existence, mission and role of the UNC may be substantially affected.

Although the legal status of the UNC is expected to remain unchanged even if the armistice agreement is replaced by a peace treaty, it is likely that its status, mission, and role will be affected in some way in reality. Therefore, caution should be exercised when discussing the dissolution of the UNC in connection with the declaration of the end of the war or the conclusion of a peace treaty[6][12].

Once a peace treaty is signed, it is necessary to review measures such as managing the ROK's peace regime on the Korean Peninsula, deterring and maintaining stability in military conflicts in Korea Peninsula and East Asia, and converting and operating a multinational peacekeeping force to respond to disasters in East Asia. In this process, it is strategically important to seek an agreement from China and Russia, which are permanent members of the UN Security Council.

5. Conclusion and Implication

It is estimated that the US is eager to revitalize the mission and role of the UNC as a multinational peacekeeping force that can support the ROK's peace regime on the Korean Peninsula while maintaining its influence in East Asia by pursuing evolutionary activities beyond the current armistice management and force provision of UNC member states.

The UNC's contribution to peace on the Korean Peninsula can be summarized in three major areas. First, the UNC contributed to the restoration of liberal democracy on Korean peninsula by helping ROK overcome the crisis of the Korean War. Second, by firmly defending the ROK's security, the UNC helped its grow from one of the world's poorest countries during the Korean War in 1950s to the world's 10th largest economy in 70 years. Third, as the armistice manager, the UNC has managed the unstable situation on the Korean Peninsula by monitoring the implementation of the armistice agreement between the two Koreas along the Military Demarcation Line(MDL) and the Northern Limit Line(NLL). The UNC is also helping to mitigate military tensions through on-site inspections, maintaining dialogue channels with North Korea, and responding to provocations or military conflicts.

Revitalization of the UNC should be approached in conjunction with the ROK's national security after reunification, as well as the transition of wartime operational control. During the Korean War, President Rhee Syngman, the first president of the Republic of Korea, opposed the armistice agreement for the reunification of the two Koreas. As a result, North Korea has denied that ROK is a signatory to the armistice agreement.

Therefore, although ROK is not a UNC founding country, it is very important for ROK to actively participate in the UNC revitalization blueprint from the perspective of future national interest.

The UNC must continue to support the liberal democracy of the Republic of Korea on the Korean Peninsula and evolve into a multinational peacekeeping force in East Asia. In 2004, Secretary of Defense Rumsfeld expressed the hope that with the wartime operational control transition initiative, United States Forces Korea(USFK) and Republic of Korea(ROK) Armed Forces would work together for future peace and security in East Asia.

When transitioning wartime operational control, Secretary of Defense Rumsfeld mentioned in 2004 that the United States Forces Korea(USFK) and the ROK military would shoulder their responsibilities together to ensure peace and security in East Asia. In conclusion, it is expected that the ROK should actively participate in the revitalization of the UNC while maintaining strategic clarity based on the solid ROK-US alliance for practical national interests.

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7. Appendix

7.1. Author's contribution

	Initial name	Contribution
		-Set of concepts 🔽
		-Design 🗹
Lead	SP SP	-Getting results 🔽
Author		-Analysis 🗹
		-Make a significant contribution to collection 🛛
		-Final approval of the paper <i></i>
		-Corresponding 🔽
		-Play a decisive role in modification $\ igside{ u}$
Corresponding	НС	-Significant contributions to concepts, designs,
Author*	ne	practices, analysis and interpretation of data $\ oxdot$
		-Participants in Drafting and Revising Papers 🛛
		-Someone who can explain all aspects of the paper $ \!$

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International Journal of Military Affairs

Publisher: J-INSTITUTE ISSN: 2423-8775

Website: j-institute.org Editor: admin@j-institute.org

Corresponding author* E-mail: yyun0916@naver.com

DOI Address: dx.doi.org/10.22471/military.2023.8.25

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Literary View towards Unresolved Territorial Conflicts in Northeast Asia: Focusing on Inherent Community Memory between South Korea and Japan and Collective Perception of South Korean

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Abstract

Purpose: This article is to explore to understand the realistic background of the territorial conflicts, it has limitations in the understanding and resolution of the territorial conflicts at a more fundamental level regarding the humanities approach. In this respect, it is important to analyze the unresolved territorial conflicts based on the literary view from a humanistic approach based on a political and cultural perspective rather than a confrontation based on the logic of power.

Method: The humanities approach is especially literature, contains the conflict generation and resolution process at the human level. The literary works representing each country, especially novels and tales, uniquely demonstrate the origin and development of the conflicts through their own plots. Based on which, it will be possible to understand how the territorial disputes will develop by country at the cultural level.

Results: This article has not suggested a fundamental resolution for the territorial conflicts of Northeast Asia, and especially the historical issues of Dokdo between South Korea and Japan. However, it is important to take a humanistic approach focusing on the literary works as ideological, economic, cultural, and nationalist conflicts. This is because the memory of intersecting harms and damages as ideological, economic, cultural, and nationalistic confrontations are repeated with a focus on the Korean Peninsula and Manchuria are the factors that continue the conflict.

Conclusion: As the historical contexts are different, the cultural and psychological tendencies are also unique, and the territorial disputes develop through the combination of such factors. In order to analyze the collective psychology and conflict of the South Koreans who experienced the loss of sovereignty and division due to Japan's forced annexation, and the territorial and historical issues surrounding the Island of Dokdo, which has been an obstacle to the normalization of the South Korea-Japan relations to this day, the culture of the time literature works dealing with modern and contemporary history that reflect the culture and language have been considered.

Keywords: Territorial Conflicts of Northeast Asia, Humanities Approach, Community of Memory, Inherent Conflicts Between Korea and Japan, Collective Perception of South Korean

1. Introduction

From the 19th century to the present, political and diplomatic disputes have not ceased in Northeast Asia given the unresolved territorial conflicts. After Japan's Meiji Restoration, Japan accelerated its modernization, and there was no country that had not suffered a large-scaled war with Japan in all conflicts in Northeast Asia towards the end of the 19th and early 20th centuries[1]. In Northeast Asia, political and diplomatic disputes has continued given the unresolved territorial disputes which arose during the 19th century. Most of the researches on the territorial disputes have been limitations in the understanding and resolution of the territorial conflicts at the fundamental level.

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There has been a territorial conflict between China and Japan over Diaoyu Dao(Senkaku Islands in Japanese), Russia and Japan over the Four Southern Kuril Islands(Northern Territory in Japanese), and South Korea and Japan over Dokdo(Takeshima in Japanese). While territorial conflicts are a problem between the individual countries, it is also true that a macroscopic understanding of Northeast Asia is needed to resolve the intertwined territorial disputes [2]. Each and every time territorial and historical conflicts arose, the countries in Northeast Asia, except for Japan, have voiced the same criticism despite acute differences in terms of their interests among realistic countries.

As such, the previous studies conducted on the territorial conflicts including South Korea and other Northeast Asian countries(Japan, China, and Russia) were primarily developed in terms of history, politics, and diplomacy. Some of the most representative studies of the territorial conflicts in Northeast Asia in Korea and overseas are as follows. John J Stephen J, The Kuril Islands(1974); Andrew Mack and Martin O'Hare, "Moscow-Tokyo and the Northern Territories Dispute," Asian Survey(1990); Okuyama Yukata, "The Dispute over the Kurile Islands between Russia and Japan in the 1990s," Pacific Affairs (2003); Palm Coast, "Japan's New Nationalism-Ever Since World War II," Foreign Affairs (2003); Valencia Mark "Domestic Politics Fuels Northeast Asian Maritime Disputes," Asia Pacific Issues (2000); Woon-do Choi, "Nationalism and Territorial Disputes," Northeast Asian Historical Issues (2011); Dong-myeong Kim, Territorial Disputes and International Cooperation(2014); Ji-won Yun, South Korea's National Security & Diplomacy in the Global Era: Challenge and Vision(2019)[3][4][5][6][7][8][9][10].

Most of such previous studies have demonstrated that the political approach is appropriate for analyzing the reality of the territorial conflicts of Northeast Asia, where the diplomacy of power and economic cooperation intersect. It is important that the historical context and political and military conflicts contribute to strengthening one's position. In this context, this article is a humanistic approach taken based on a political and cultural point of view and analyzes it with a focus on literary perspective. In this respect, mainly this article is to deal with the modern and contemporary history of the South Koreans' collective awareness and conflict with the territorial issues surrounding the Island of Dokdo <Figure 1> and the historical issues between South Korea and Japan, which experienced the loss of sovereignty and division due to Japan's forced annexation.



Figure 1. Korean island, Dokdo.

Note: https://blog.naver.com/monikadrtoth/222405287929 (June 21, 2023).

2. Historical Conflicts of Territorial Conflicts in Northeast Asia

After the defeat of the Crimean War(1854-1855), Russia advanced into Asia full fledgedly to gain an ice free port. In this process, collisions with China and Japan were inevitable. In China,

it was important for Russia to promote the modernization movement and nationalism that emerged in the process of the invasion of interests by the imperialist powers that deepened from the end of the 19th century. In particular, in the process of confronting the Japanese aggression, Manchuria was transformed into a multi-layered region where nationalism, socialism, and imperialism collide[11][12].

The unique names of 'Manchuria,' 'Siberia,' and 'Korean Peninsula,' which were the spaces of acute confrontation in the 20th century, exist as the spaces of common wounds, conflicts and remorse where the memory of countless people from the past to the present are buried. The repeated territorial conflicts of Northeast Asia have always resulted in political conflict or military competition because they have insisted on or impose their own national interests on the other countries[13].

The power to relocate Manchuria, which was a space of remorse and dreams for the Koreans who dreamed of independence during the colonial period, to a symbolic space of reconciliation in Northeast Asia, would also originate from the respect for the wounds of others. Furthermore, with the mobilization of the state, which was one of the pillars of modernity, the people of Northeast Asian countries in the 20th century are remembered as a space where they share the scars of war, mobilization, and colonial rule. To further elaborate, historically, from the beginning of the 20th century, China, Russia, and Korea had have to experience major collisions and territorial aggressions with Japan. In particular, after the Sino-Japanese War(1894-1895), the Russo-Japanese War(1904-1905), and World War II, China, Korea and Russia in Northeast Asia all experienced warfare with Japan, and suffered enormous human and material damages in the process. Even to this day, the historical recognition and historical issues could not avoid continuous collisions, and it has been a major factor in confrontation and dispute between countries and between peoples. Unfortunately, after the end of World War II and the defeat of Japan, due to the conflicts between liberal democracy and socialist ideology, the Northeast Asian countries have had to fight each other as 'enemy' due to the Korean War(1950-1953). Unfortunately, the Korean War became a tragedy in which China, the former Soviet Union, and Korea, which had fought together with Japan, had to retaliate against each other as enemies [14].

Under a large framework, the main factors of the territorial conflicts of Northeast Asia are classified into a number of ancillary issues such as the clearing of the past history, history textbooks, territorial conflicts, and the other countries' political leadership and people's tendencies. Seong-woo Kwon(1999) defined that 'literature and history are a kind of twin relationship.' This is because many literary works are not entirely free from the historical contexts. Even if it is a creative and extraordinary imagination, its concrete form is connected to the state in which the real world and historical aspects are reversed[15]. Heon-young Yim(2014) claimed that such conflicts and issues could be solved secondarily if the past history problems are properly resolved. In this sense, Northeast Asia will not be able to resolve the current chain of conflicts unless Japan, which is a party to the aggression, does not properly resolve its past history based on the peaceful and humanitarian principles[16].

3. Origin of Anti-Japanese Sentiment and Conflicts Memory towards Manchuria

As noted earlier, to remember the past is to travel back in time towards 'history' and encounter the present again, and hence, 'remembering' would never be a static act such as self-reflection or retrospection. Hwa-seon Kim(2005) said, "This was why it is necessary to recall the painful memory of piecing together the fragmented past in order to understand the trauma of the present. This was the modern meaning of the act of remembering the past, and the politically of the past as it is live"[17].

Since the late 19th century, the conflicts China and Japan, and Russia and Japan have all been the conflicts for the domination of Chosun. The experiences from the late 19th century to the

early 20th century, when they were treated as spoils of the struggle for superiority between great powers, but could not even resist, acted as a great wound to the inside of the Koreans. The modern era, which was met by external shocks after the opening of port in 1876, was a difficult one for the Koreans. As the Sino-Japanese War and the Russo-Japanese War from the second half of the 19th century, the Koreans' perception of Japan as the formula of modernization equaled to westernization becomes unstable and uncomfortable. Daehan Maeil Daily, a representative newspaper of Chosun at the time, recorded the Japanese as follows:

In our view, it was natural for a country like Japan to rise to a high position very fast and must be proud, and thinks itself to stand shoulder to shoulder with other powers, and to be better than any other country. There was no doubt that now, Japan's pride would be educated by the efficacy of winning the unwise Anglo-Japanese alliance and the Russo-Japanese war. "See, you the Japanese people. Now, I declared that annexing Korea was by no means an advantage, and that, no matter how much you tried to satisfy your greed, Korea would never fall[18].

As recorded in Daehan Maeil Daily, the Koreans at the time regarded the Japanese as a proud and distrustful people. This recognition was expressed in a way that repeatedly emphasized the superiority of our people and history. However, no matter how intense the hostility and hatred towards Japan, which had subdued and encroached on the neighboring powers based on a meticulous plan, it was not enough to protect its territory and sovereignty.

Primarily the modern nationalism in Korea was formed in the process of imitating and excluding the other, primarily Japan. A serious sense of crisis and a strong sense of nationalism were the two sides of the same coin. Hence, in order to inquire on the factors that strengthened the nationalist consciousness, it would first be necessary to examine the cause of the sense of crisis that caused it[19]. Chosun was forcibly annexed by Japan in 1910, and the suffering was too large for the Koreans. At the time, the following two concepts were established inside the Chosun people who met the contemporary era as follows:

The modern(present) era was 'me(subject)' and 'another(another person)' approaching 'me', and the other was 'new good (modern, western)' and 'old bad(feudal, traditional)' as a matter of concept. The two different stemmed intersect each other to form a number of possible paradigms(...) The modern era emerged vaguely as a sign of escaping from the nightmare of oppression and barbarism(...) 'Efflorescence' and the paradigm of improvement and enlightenment had changed into something that should offer more power[20].

The longer the colonial rule by the Japanese imperialists, the more the worldview of the survival of the fittest took root among the Koreans, and the economic and social oppression of the colonial situation accelerated it. The dichotomy of resistance versus cooperation did not allow for the delicacy of staring at class, gender and race. For example, the trains during the Japanese colonial period were both a blessing of the modern civilization and a prelude to imperialist violence. The railways built by Japan were not only a passageway to the modern civilization, but also a passageway to extort the blood and sweat of the people. The colonial people parted from the pre-modern mythical world while riding the train, wonderfully gazing at the panoramic land-scape of the modern civilization and violence like a baggage. Likely it was the case. For the Koreans, the railroad is a dangerous and fascinating race that crosses modernity and colonialism, and has been interpreted as a compressed modern historical symbol experienced by the Korean society[21].

As Jongh-yeon Jung(2005) noted "Manchuria was realistically a life sphere for the Koreans during the Japanese colonial period, and historically it was a space imprinted with the reality of the nation in a state of exile, and politically it was the origin of resistance against Japanese

Empire." Conversely it was also a land of opportunity for successful migration under the protection of Japan. It was not only domination and resistance under the colonial empire. In many cases, the relationship between domination and control coexisted with domination and resistance as well as assimilation and repulsion, and it was difficult to distinguish[22]. Yang-soo Kim(2004) said in regards to Manchuria that was the most important space for the Japanese imperialism to stand shoulder to shoulder with the western modern civilization, and Manchuria's material wealth and advanced western culture were all the share of the Japanese, and Chinese and Koreans in Manchuria where all marginalized, merely forming the peripheries of the material wealth[23].

If one examines some literary works recorded based on the memory of Korea focused on Manchuria, one could discover the possibility of creating a small crack in the harsh reality and emotions. Set in Manchuria in the 1930s, Yeon-soo Kim's 'Night Sings' marked one reflect on the common tragic reality experienced by Korea and even China. 'Night Sings' was a work of conflict between the former Soviet Union, China, Japan, and the Koreans. The novel was set in Manchuria in the 1930s. This novel dealt with the 'Minsaengdan Incident' which occurred between the Chinese and Koreans in Manchuria at the time who cooperated in the development of anti-Japanese independence. The migration of the Koreans to Manchuria began in the mid to late 19th century, and with the exile in 1910, Manchuria emerged as an important area and region for the Korean national history. Thereafter, in the thought of colonial Koreans, Manchuria had become a space that represents various implications [24].

4. Effect on Collective Memory and Perception of South Korean

After the liberation, through the war and military dictatorship, the worldview of 'survival of the fittest' and 'law of the jungle' was internalized increasingly and blatantly, and it has been expressed as a driving force that continuously pressured the people. Combined with the violence of the ruling power, the driving force increasingly gained acceleration. The development of capitalism has been also made visible following the emergence of a sensuous and fantastic world of commodities that goes beyond simple physical objects [25].

Byeong-cheol Na(2016) noted that the experience of phantasmagoria of the displayed product was the emergence of a new spectacle value that goes beyond the exchange value as well as the use value of the product itself. The emergence of the modern world has been visibly materialized by such a spectacular exhibition. However, this was actually an action of invisible emotional power that endlessly seduces people while hiding the social relationships behind the product. The crowd forgets about the relationship between the capitalist and the worker who produced the product and the relationship in the distribution process, and was drawn to the illusionary experience that the arcade creates. For such reason, the modern visionary experience was inevitably dualistic. Capitalism and the world of commodities endlessly tempt us, yet behind the scenes were the contradictions that were difficult to resolve. The modern illusionary experience fascinates us, and at the same time, unconsciously accompanies anxiety, boredom, and depression[26].

As such, as noted by Byeong-cheol Na(2016), it would not be incorrect to say that the history of Korea after its liberation was the 'process of consistently becoming more ornate.' In order to avoid the anxiety, boredom, and depression that deepen as the fantasies become more glamorous, we chose 'galloping.' Young-min Kim(2016) noted this galloping phenomenon as follows:

Certain violent experiences sometimes decided the fate of a country. For example, Korea had to accept the colonial rule. In the twilight of a tribute country invaded by imperialism, the imperialists who broke in said, "You did not have the capacity to create a modern public order on your own, so we would rule for you" (...) Since the primordial violence had given the Koreans a common assignment that was difficult to repel, the Koreans must exhaust the modern history by

doing the assignment. (...) They started galloping to avoid the invasion and insults of the imperialists, and they could not stop until the government is established, the war of kinship was over, and the appearance of a modern nation was in place[27].

In the process of galloping as such, Korea abandoned many things. Korea's industrial modernization after the Korean War was a continuation of the developmental projects and the process of mobilizing cheap and replaceable labor. The places where the rapid economic development projects and the exploitative labor force were most evident were the battlefields. After the liberation, the territorial perception projected in the Korean literature primarily did not take on the form of direct conflict or physical occupation, but was transformed into a form of controlling, managing, and subsuming the body and interior of a subject inferior to themselves. Sometimes in the reverse direction, those who wish to be seized and managed by others in exchange for willingly giving up their subjectivity often appear in the Korean literature. For example, in Seokyoung Hwang's novels 'Tower' dealing with the Vietnam War, the contradiction of developmentalism combined with militarism was well expressed. In 'Tower,' a short story from the author's Vietnam War experience, the story of a South Korean military unit that was annihilated while protecting a temple in Vietnam at the request of the U.S. military appeared. It clearly visualized that for the U.S. military, the lives of the soldiers of allies of the East were merely mobilizable and replaceable materials[28][29].

As a result, the Koreans who survived through the colonial oppression reproduced their own experiences of colonialism by oppressing and ignoring the minorities. Naturally, such reproductions, remnants of colonialism, were not exclusive to the Korean literature. The power to relocate Manchuria, which was a space of remorse and dreams for the Koreans who dreamed of achieving independence during the colonial period, to a symbolic space of reconciliation in Northeast Asia, will also come from the respect for the wounds of others. This is because understanding others becomes possible only by recognizing the other person's wounds [30][31].

5. Conclusion

As noted earlier, literature carries and reflects the process of conflict generation and resolution at the human level. Based on which, it would also be possible to understand how the territorial conflicts would develop in each country at the cultural level. Thus, the policies on the territorial issues have not largely escaped national boundaries and desires. Each country has not given up its political and economic gains, and the arms race to occupy an advantageous position in the conflict has continued, and further demonstrates a dual attitude of maintaining cooperation and exchanges despite the strategic diplomatic frictions[32][33].

This has been because each country's unique 'memory' exist at the foundation of such attitude. From the end of the 19th century to the present, the conflicts caused by territorial disputes in Northeast Asia have been among the most important conflict factors between countries. China, which had been reduced to a semi-colonial state in the west, underwent a long war with Japan and suffered from tremendous damages. As emphasized earlier, Manchuria was a key space of the Northeast Asian conflicts such as the Sino-Japanese War, Russo-Japanese War, the anti-Japanese independence movement, and the Sino-Japanese War[34].

Specifically once the discussions or debates begin with the historical facts of the Island of Dokdo's territorial conflicts between South Korea and Japan presented, the vicious cycle has been repeated itself where the issue of interpretation grows and the interpretation ends up in the logic of power[35]. Constantly South Korea has been at odds with Japan, recalling the unresolved memory of the colonial rule. Perhaps it has been because the remembrances of the inner being dominated for so long is far more tenacious and stronger than the loss of actual territory. The issue of interpretation of the historical facts about the territorial disputes between South Korea and Japan, or between Japan and Northeast Asian countries, will likely remain unresolved for a longer period of time.

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7. Appendix

7.1. Author's contribution

	Initial name	Contribution
		-Set of concepts 🗵
		-Design 🔽
Lead	JL	-Getting results 🔽
Author		-Analysis 🔽
		-Make a significant contribution to collection $ igside \nabla$
		-Final approval of the paper 🛛
		-Corresponding 🗹
		-Play a decisive role in modification 🔽
Corresponding	JΥ	-Significant contributions to concepts, designs,
Author*	JT	practices, analysis and interpretation of data $\ igsidemode{ u}$
		-Participants in Drafting and Revising Papers 🛛
		-Someone who can explain all aspects of the paper $arsigma$

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International Journal of Military Affairs

Publisher: J-INSTITUTE ISSN: 2423-8775

Website: j-institute.org Editor: admin@j-institute.org

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DOI Address: dx.doi.org/10.22471/military.2023.8.33



Electronic Warfare Theory and Strategy: Focusing on the Threat of North Korea's Electronic Warfare

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Abstract

Purpose: The importance of electronic warfare in modern warfare is increasing day by day. In particular, North Korea has a relative weakness of conventional weapons systems, and has focused on developing asymmetric weapons systems and electronic warfare as a way to overcome them. North Korea is currently expected to further expand its application to some aircraft and guided weapons operations under satellite navigation systems such as GPS, GLONASS, COMPASS and Beidou.

Method: This study studied the prior theory of electronic warfare at home and abroad. Prior research examined the military doctrines of the United States and trends in Europe. In particular, I studied the doctrines of the United States Joint Navigation Center (Navigation Warfare Center, JNWC) and the Education Command. Based on these prior research materials and literature reviews, I wanted to specifically review North Korea's electronic warfare cases and present our response in terms of legal and institutional aspects.

Results: The South Korean military should recognize the importance of navigation warfare (part of electronic warfare) that protects our troops' location, navigation and square information so that they can be used without interruption, prevent the enemy's use of related information, and ensure the peaceful use of such information outside the light bulb In addition, we need to build an electronic warfare simulator and continue to promote training based on various scenarios.

Conclusion: Efforts to train and support professionals are urgently needed. In parallel with these efforts, joint efforts to develop electronic technologies between the civilian and military should be preceded. To win a high-tech war in the 21st century, it is essential, among other things, to have precision weapons and original electronic warfare support capabilities. In addition, it is necessary to foster R&D and defense companies to secure domestic technology.

Keywords: Electronic Warfare, Navigation, Jammers, Satellite Navigation Systems, PNT

1. Introduction

Most of human life today depends on information received from satellites [1].

It uses satellite information not only in the private sector but also militarily, such as taking off and landing aircraft and operating ships. Therefore, it is hard to imagine the possible damage caused by GPS disturbances[2].

For example, even though the aircraft is landing normally, is there a situation in which the aircraft computer system is not aware of this and the emergency warning lamp flashes?

In particular, if such incidents occur in fishing boats and ferries operating near the NLL in the West Sea, they are likely to be abused as means of kidnapping. In such cases, the military's

damage is likely to be serious. In other words, when intercepting enemy missiles or attacking with allies' missiles on the contrary, it would be necessary to calculate the landing point, but it would be impossible to calculate the exact point of attack in case of GPS jamming[3].

Today's war patterns are changing from the past to network warfare and high-tech information warfare using advanced science and technology and information technology. In this situation, the importance of electronic warfare is increasing day by day [4].

In particular, North Korea has a relative weakness of conventional weapons systems, and has focused on developing asymmetric weapons systems and electronic warfare as a way to overcome them[5]. North Korea launches a full-fledged radio disturbance, it is expected that there will be great confusion not only in military operations of air and naval forces but also in the private sector such as telecommunications and transportation. It is known that the North Korean military has been preparing for electronic warfare more than a decade ahead of South Korea.

North Korea is expected to further expand its application to GPS, GLONASS, COMPASS and Beidou satellite navigation systems when operating some aircraft and guided weapons [6]. In particular, the importance of electronic warfare and navigation warfare by satellite navigation system is increasing day by day [7].

Electronic warfare will play an important role in keeping the enemy under control and winning victory in the first place by blocking the eyes and ears of the enemy and maximizing our allies' full power with this non-lethal operation without damage to life and property caused by physical strikes.

2. Theoretical Discussion on Electronic Warfare

2.1. Concept of electronic warfare

Electronic warfare is a non-destructive electronic attack, and electronic jamming and electronic devices, which are mainly aimed at undermining and incapacitating the enemy's weapons functions, are essential in carrying out efficient electronic warfare. Electronic warfare in the military sense means military action that paralyzes or disables the functions of the enemy's C4I (command control system) and the electronic weapons system. Electronic warfare is also defined as a military operation that controls the low magnetic spectrum[8].

In other words, it means using electromagnetic waves in military operations to support smooth operation. It is also regarded as an activity that utilizes electromagnetic waves to ensure the efficient operation of the friendly electronic weapons system and to prevent the efficient operation of the enemy's electronic weapons system.

Recently, there have been incidents in the government and private sector that have been highly dependent on GPS or GNSS use[9].

Many accidents have occurred due to so-called electronic warfare attacks such as Jamming, Spoofing and Mi coning. Electronic attacks, which form part of an integrated navigation battle, are expensive attacks that require high-tech skills and high power[10].

Electronic warfare attacks are heavily influenced by the use of GNSS's measurements, navigation, and visual information before and during use of any kinetic energy weapon[11].

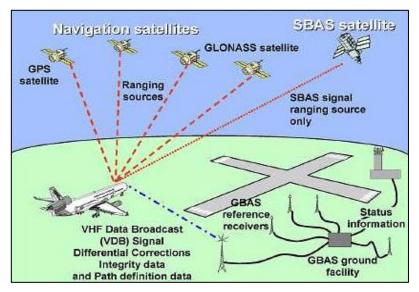


Figure 1. Ground-based augmentation system(GBAS)[12].

Such cases also occurred in Ukraine and South Korea. Many fighter jets and ships were confused in August 2010 and May 2013 when GPS signals caused confusion due to jamming from North Korea[13].

In Ukraine, the European Organization for Security and Cooperation reported that there was GPS Jamming during drone operations.

On November 8, 2018, during NATO military exercises in Finland and Norway, a navigation system failure caused the aircraft carrier to crash into a tank[14].

Incidental damage also resulted in civil aviation, car and cargo ships, smartphone operation and similar mix-ups. However, for civil airlines, navigation devices are used optionally. The U.S. Department of Defense told CNN that Jamming had little or no impact on U.S. military equipment. This effect is due to the use of military P/Y codes - rarely affected by jamming.

On the other hand, electronic warfare attacks can be extensive, with cheap, low-powered electronic warfare attacks called the so-called Personal Defense Agency (PPD). Personal protection is a small, low-cost, lightweight jammers that can be easily purchased on the Internet.

The use of such jammers is prohibited in most countries, but their ownership is not strictly limited to the same level as that of use.

2.2. Classification of electronic warfare

Electronic warfare is divided into electronic attack, electronic reporting, and electronic warfare support depending on utilization patterns and performance [15].

2.2.1. Electronic Attack (EA)

It refers to the act of attacking radar, communications and electronic weapons systems using radio waves to destroy and reduce enemy combat capabilities. These include physical electronic attacks that physically destroy the enemy's electronic warfare systems with anti-radiation missiles (ARMs) and non-physical electronic attacks such as jamming and deception.

2.2.2. Electronic Protection (EP)

As an act of defending our electronic system, there is a great electronic warfare support such as electronic radiation control, avoidance, and electronic camouflage to donate the enemy's electronic information collection, and a great electronic attack, an activity that minimizes our military's influence from the enemy's electronic attack.

2.2.3. Electronic Warfare Support (ES)

It means comprehensive activities such as collecting information and supporting operations for planning and implementing electronic warfare.

2.3. Electronic Warfare Cases in Modern War

2.3.1. Gulf War Case

Electronic warfare operations were carried out in the Gulf War, divided into operational readiness and execution stages. Prior to the start of the operation, the top priority for the multinational force is to identify the capabilities of the Iraqi forces and the Electronic Order of Battle, and to focus on the weapons systems in the field of electronic warfare.

EF-111A, EA-6B aircraft carried out electronic jamming on early warning radar and groundbased control stations, and EC-130H Compass Call aircraft conducted disturbances on the air defense network's command, control and communication systems. In order to carry out effective anti-aircraft suppression missions in the early stages of the operation, non-destructive radio disturbances were essential to prevent the enemy's main system from operating normally [16].

2.3.2. Case of Iraq War

In the Iraq war, radio disturbances were carried out in the "Protection of Sovereignty" phase. It began jamming and paralyzing operations through electronic attacks on Iraq's air defense network, war leadership and command, control and communications systems. As part of the non-destructive electronic attack, radio disturbance operations were carried out. EC-130H Compass[17].

Case of disturbance foreign include Moss Landing Port in the United States in 2001, SanDiego in 2007, and German Airport in Germany In the form of radio disturbance around the Newark airport in 2010, a Personal Privacy Devices (PPD) was used inside the vehicle to prevent some private users from exposing their location.

2.4.Current status of domestic and foreign satellite navigation system disturbance technology and equipment

2.4.1. Domestic and foreign global navigation system disturbance techniques and levels

Satellites in the global positioning system transmit signals at a distance of about 20,000 kilometers from Earth, so they are weak in reception and very vulnerable to interference(interference). Accordingly, the enemy will use the following three disturbing techniques to prevent satellite navigation signal reception in military situations using the vulnerabilities of these GPS signals[18].

(1) Jamming (jamming, noise)

It interferes with satellite navigation by approving the same frequency signal of strong power in the frequency band to which the global navigation signal is used.

(2) Mi Conning(meaconing, rerun)

This is a technique in which a disturbing transmitter intentionally receives and stores a global navigation signal and then reruns it at a time lag to cause confusion in the receiver.

(3) Spoofing(spoofing, propagation deception)

It is a technique that mimics the commercial GPS signal structure (signal frame) open to the general public to generate high-power satellite navigation signals containing false signal information so that the global navigation receiver can recognize the wrong location. Among them, jamming can easily produce jammers (radio jamming devices) with low cost and simple technology to deploy attacks. Because the range of jamming in electronic warfare is very wide, and like

windows and shields, the possibilities of jamming and anti-jamming exist simultaneously, and the technological development of jamming and anti-jamming can be carried out at the same time, attention is focused on the development of various anti-jamming satellite navigation system technologies to cope with jamming attacks worldwide. For a large-scale electronic attack, it is necessary to ensure continuous use by minimizing the impact of electronic equipment of our allies due to enemy electronic jamming or deception. Various anti-jamming technologies have been studied to efficiently remove or suppress interference and jamming signals entering the global navigation receiver. Jamming and anti-jamming are like spears and shields, so Pia will have to attack the opponent by surpassing the opponent's skills, and the technique of avoiding the jamming attack will have to proceed at the same time.

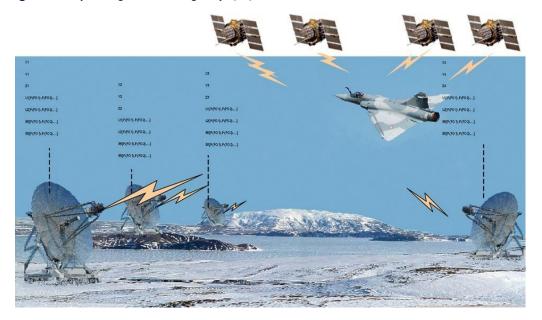


Figure 2. The jamming situation of fighter jet[19].

Types of anti-jamming techniques are as follows. Antenna technology This is a technology that uses an adaptive array antenna (adaptive array antenna), and there is a beam arrangement (beam-steered array) technology that increases profit by forming a very narrow beam-width beam in the direction of the satellite signal and null steered array technology that forms a null in the direction of the jamming signal to suppress the jamming signal. Front-end (front-end) filtering technology It is a technology that blocks jamming power that flows strongly into the receiver and uses a band filter with sharp cut-off characteristics that suppresses the jamming signal other than the global navigation signal band and passes only the global navigation signal. AGC (Automatic Gain Control) technology Under the roaming environment, the global navigation signal is distorted, and if the satellite signal is tracked using the wrong signal, the signal is lost (synchronization). Therefore, not transmitting signals to the receiver when jamming is present is one way to respond to jamming. Advanced satellite navigation receivers with anti-jamming functions have a mode transition function, so they control the capture (acquisition) and tracking of receivers according to the power level of the jamming signal. Digital anti-jamming signal processing technology It is a representative preprocessing anti-jamming satellite navigation system technology that removes jamming and interference signals using digitized signal samples before the satellite navigation reception signal is copied.

3. North Korea's Electronic Warfare Capability

3.1. North Korea's electronic warfare capability

North Korea has relative weaknesses in its conventional weapons system, and has focused on developing asymmetric weapons systems as a way to overcome them [20][21].

In particular, the military aims to strengthen its military power by acquiring asymmetric weapons and technologies, such as cyber warfare and radio disturbances, in order to cope with the advanced weapons system in the West. North Korea has been on the Military Demarcation Line since 2010.

Some advanced weapons systems (guide weapons, drones, missiles and aircraft) currently operated by North Korea are believed to be equipped with GPS, GLONASS, COMPASS and Beidou receivers, and North Korea is expected to further increase its dependence on satellite navigation systems in the near future, focusing on advanced weapons systems. North Korean troops are equipped with 100W portable radio disturbance equipment and above 1,000W [22].

North Korea started preparing and developing electronic warfare in the 1970s. Currently, North Korea is known to be operating dozens of bases charge of conducting electronic warfare south of the plain, and Haeju and Kaesong are also believed to have electronic warfare bases. North Korea has introduced Russian-made jamming equipment to mount vehicles capable of jamming GPS signals in a range of 50 to 100 kilometers, thus providing a military demarcation line.

Figure3. Pattern of disturbance of North Korea.



Note:https://m.blog.naver.com/(2011).

Recently, it is believed to have introduced a new 24-W jamming device to Russia that could hinder the use of GPS receivers within 400 kilometers of the Korean Peninsula. It is expected that electronic warfare capabilities will continue to be improved by installing and operating electronic information collection bases and radio interference bases near the mid- and western regions where South Korea's radio waves can be detected. North Korea was under the General Staff's Office of Information Control in 2001.

Commanded by the Center for Information Control, 121 reconnaissance stations and 204 red air stations are organized specializing in cyber warfare. North Korea is expected to develop EMP missiles that will neutralize the enemy's electronic device system by creating high-energy Electro-magnetic pulses in the future.

 Table 1. Cases of radio disturbance in North Korea.

	First case (2010.8.23.~26)	Second case (2011.3.4.~14)	Third case (2012.4.28.~5.13)	
Location	Gaesung	Gaesung, Haezu	Gaesung	
Signal strength	-70~-60dBm	-60dBm	-80~-60dBm	
Signal inflow area facilities, Etc.	Northwest of the Seoul metropolitan area such as Gimpo and Paju	Northwestern part of the Seoul metropolitan area, such as Gimpo and Paju, and Gangwon Province	Northwest of the Seoul metropolitan area such as Gimpo and Paju	
	2G and WiBro base stations 181 stations			
	15 air craft twenty-one aircraft	106 aircraft	21 aircraft	
	Naval ship One ship	Naval ship One ship, seven ships	Two ships	

4. Conclusion and Policy Suggestions

Future warfare is changing into network warfare and advanced information warfare, and the importance of electronic warfare and navigation warfare by satellite navigation system is increasing day by day. In particular, the importance of electronic warfare plays an important role in defeating the enemy in the first place and winning the victory by covering the enemy's eyes and ears with non-lethal operations and maximizing our allies' power, without the damage to life and property caused by physical strikes. The recent war between Ukraine and Russia is well illustrated[23].

North's weapons systems and technologies are imported from Russia and China, the satellite navigation system available to the North is estimated to be GPS in the U.S., GLONASS in Russia and COM-PASS in China, and the advanced weapons system is expected to be equipped with the satellite navigation system in general to enhance its precision.

North Korea has a relative weakness in its conventional weapons system, and has focused on developing an asymmetric weapons system as a way to overcome it, and will try to counter the enemy by acquiring asymmetric weapons and technologies, such as cyber warfare and radio disturbances, in particular to counter the advanced Western weapons system.

In future warfare, the enemy's command and control system (C4I) and precision guided weapons system should be broken, operated in a way that could neutralize the enemy's war will be in the early stages of the war, and electronic and navigation warfare will be necessary as part of our efforts to deal a blow to the enemy who is focusing on nuclear tests and missile development. To prevent nuclear and missile launches in advance, which are part of the asymmetric forces the enemy is preparing for.

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6. Appendix

6.1. Author's contribution

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

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