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THE REPUBLIC OF KOREA'S COUNTER-ASYMMETRIC STRATEGY

Lessons from ROKS *Cheonan* and Yeonpyeong Island

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Since its provocations against Yeonpyeong Island on 23 November 2010, North Korea's asymmetric threats have emerged as one of the most momentous security issues for the Republic of Korea (ROK).¹ After bitter defeats in the First and Second Yeonpyeong Sea Battles, as well as in the Daechung Sea Battle of November 2009, North Korea recognized its disadvantage in symmetric surface-ship provocations. It resorted instead to new and unexpected tactics, utilizing its latest small submarine to torpedo ROKS *Cheonan* on 26 March 2010.

Considered to be the North's severest military provocation since the Korean War armistice, the sinking of ROKS *Cheonan* gravely shocked every aspect of Korean society—political, diplomatic, psychological, and military—and

caused deep ripples across the range of Northeast Asian security. China, which had been adhering to a neutral stance, commenced shuttle diplomacy, dispatching Wu Bangguo, head of the National People's Congress, to both Koreas. However, although much time has passed since the incident, in which the North might have taken a different path, it has instead underscored its nuclear threat by enriching uranium, and China has safeguarded Pyongyang by proposing guidelines for a resumption of the Six Party Talks that would be difficult for the United States, Japan, or Russia to accept. The result has been a further cooling of North Korean–South Korean relations, and conflicts between the United States and China have also surfaced.

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The problem that besets the Korean Peninsula lies in the unavoidable fact that the ROK's vulnerability has increased as North Korea's asymmetric threat has expanded and diversified. The current threat is a conventional weapon-based war capability that includes chemical, biological, and radiological (CBR) weapons, long-range artillery (LRA), special operations units, and underground tunnels. However, it is rapidly expanding to one of nuclear and high-technology weaponry (e.g., cyberwarfare, electronic warfare, hovercraft, and air-cushion stealth warships).² When these separate asymmetric assets are combined, the North's capabilities and military options will be greatly strengthened. They will pose a serious threat to the ROK military, because they can be used both as core means of attack during wartime and for localized provocations in peacetime.

The ROK is currently facing the difficult question of how to cope with the development of these asymmetric capabilities. Based on lessons it learned from these most recent attacks, the ROK has focused on not only reshaping its military strategies but also strengthening its capabilities to deal with the North's asymmetric threats and enhancing "jointness" (합동성) among its services.

The strategic challenge posed by an asymmetric strategy concerns the relationship between the weak/poor and strong/wealthy. Regardless of how strong and wealthy a state is, if it fails to comprehend the strengths of the weak and poor, it is destined to fail. Asymmetric solutions of "yisojaedae" (以小制大, "conquering large forces with small ones") always exist, enabling the weak and poor to exploit vulnerabilities of the strong and wealthy. The former can undermine and debilitate the latter's military superiority by means of a diplomatic strategy that capitalizes on that very superiority through "yiyijaeyi" (以夷制夷, "using the enemy against itself"). Globalization and networking have been pillars of strength for the strong/wealthy, but they offer opportunities against them for the weak/poor; weaknesses within globalization and networking can be cleverly used to nullify the strengths of their intended beneficiaries. Finally, though major twenty-first-century militaries have been revolutionized by information technology, their new capabilities for battlefield awareness, information sharing, and long-range precision strikes are ineffective against irregular and guerrilla warfare, subversion, and destabilization.

To explore these issues in some detail, this article will analyze the North's asymmetric threat from various dimensions and propose counter-asymmetric concepts and strategies for the South.

A NEW ASYMMETRIC THREAT FROM NORTH KOREA

North Korea was one of the early exponents of asymmetric warfare. Combining Soviet conventional doctrine (operations by mechanized units in the enemy's depth) and Mao Zedong's concepts of irregular struggle (People's War, guerrilla

and political-psychological warfare), the North has developed a bold form of combined regular/irregular warfare for the purpose of rapidly conquering the South, before U.S. reinforcements can be deployed on the peninsula. The North's methods emphasize the speed of regular warfare but at the same time recognize its limitations.

Background and Development

Having observed the ineffectiveness of America's high-tech forces in Vietnam, Pyongyang aspired to re-create Vietnam and its armed unification on the Korean Peninsula. It drastically increased its military in 1970 and greatly improved its conventional and asymmetric capabilities. The latter included tunnels, which allow the North to infiltrate the Demilitarized Zone.

The end of the Cold War, the ROK's creation of diplomatic ties with Russia and China, an increasing gap in national power, the death of Kim Il-sung, and its own deteriorating economy, along with other foreign and domestic issues in the 1990s, led North Korea to enhance its capabilities for asymmetric warfare as its new survival strategy. At a political level, the North adopted the concept of "kangung daeguk" (강성대국, "strong and prosperous nation") and the "sungun jeungchi" (선군정치, "military-first politics"). At the military level it brought out nuclear weapons, missiles, and threats to envelop Seoul in flames. The North has actively played its political cards to realize its military goals, and despite numerous difficulties, it has done so successfully. The nation has staged a continuous series of armed demonstrations: launching a long-range ballistic missile on 5 April 2009, conducting a second nuclear test on 25 May that year, initiating a distributed-denial-of-service (DDOS) cyber attack on 7 July 2009, and firing short-ranged missiles on several occasions. Later the North changed its strategy to one of "miso" (미소, "little smile," a false suggestion of reconciliation), but receiving only a meager response from the ROK, decided to make a new move, torpedoing ROKS *Cheonan* on 26 March 2010, killing forty-six crew members, and bombarding the inhabited island of Yeonpyeong on 23 November, killing four people. Experts believe that this series of provocations was initiated on the basis of its confidence in the development and possession of nuclear weapons.

A Hypothetical Scenario: Mixed and Full-Scale Warfare

As a countermeasure to North Korea's asymmetric strategies, the South has focused on nurturing an elite army of superior quality and strengthening the ROK-U.S. Joint Defense System and Rear Integrated Defense System. Meanwhile, the North has continuously developed new asymmetric threats that include nuclear and CBR weapons, missiles, LRA, special operations units, cyber weapons, electromagnetic pulse (EMP) weapons, Global Positioning System (GPS)-disturbance devices, submarines and minisubs, and online political and psychological warfare.

For limited provocations the North will apply these tactics, separately or combined, to a modest degree, but in the case of full-scale war we expect it to employ its assets fully through integration, combination, and mixing. The speed, pressure, shock, scale, and intensity of destruction would be immense.³

It is expected that the North Korean regime will first conduct a simultaneous and multifarious cyber offensive on the Republic of Korea's society and basic infrastructure, government agencies, and major military command centers while at the same time suppressing the ROK government and its domestic allies and supporters with nuclear weapons. If the North succeeds in developing and deploying its EMP weapons, it will be able to paralyze electronic functions as well. Moreover, the North will launch an offensive with its diverse collection of missiles (including the recently developed KN-01 and KN-02) and long-range artillery against the strategic center of the ROK, inflicting terror and realizing its threats to make Seoul an ocean of flames.

The North Korean regime will conduct a rapid front-and-rear combined operation to seize and conquer the Greater Seoul Metropolitan Area while carefully monitoring the ROK's and international community's response. Furthermore, it will infiltrate the South by deploying special operations units by land, sea, and air in multiple ways not only to disturb and disperse ROK forces but also to conquer Seoul and use it for bargaining leverage. Should the South decline its terms, the North will immediately expand its operations to sweep and conquer the entire nation, seeking to do so before U.S. reinforcements arrive. At this point North Korean forces will not be greatly concerned with logistic support, since they expect to be able to use the South's resources, especially in Greater Seoul.

Even if the North's invasion operation does not progress as planned and encounters a ROK-U.S. counteroffensive, North Korea has no reason to be pessimistic, since it expects the South to accept an armistice immediately if threatened by nuclear missiles. In fact, it will be difficult for the United States to intervene actively at all should the North threaten nuclear employment. Moreover, North Korea calculates that against a backdrop of nuclear threats, pro-North leftists in South Korean society will stir anti-American sentiments, warning of nuclear attacks if the United States intervenes. When the Northern regime initially declares war, these parties may create a dangerous possibility of proactive sympathizing forces emerging within South Korean society.

Although this hypothetical scenario is gravely pessimistic, it is neither ungrounded nor irrelevant. From the perspective of preparing for the worst, it is crucial that the South increase interest in how to counter not only combined and full-scale campaigns but also separate, fragmented, and local asymmetric threats.

Hubris and overconfidence represent serious risks for the Republic of Korea. Seoul must not underestimate the strength of Pyongyang's military just because

of its own absolute economic superiority. Moreover, we must not disparage North Korean soldiers and surmise that they lack combat abilities merely because their country is poor and small, uses ageing and obsolete weapons, and lacks sustainment capabilities. In addition to its variety of asymmetric assets and employment methods, North Korea has been analyzing lessons from the 2003 Iraq war, instructing its people in firearms and suicide bombing, and indoctrinating them in the idea of defending the “great leader” with their lives and in an ideology that combines these concepts.

THE ROK'S COUNTER-ASYMMETRIC STRATEGIES: ANALYSIS

The South's overall national power currently surpasses that of the North. Although the North's territory is about twenty thousand square kilometers larger than the South's, the population of the South is nearly double that of the North, and its economic strength is about thirty times superior. Furthermore, the South's foundational regime and governing system are far better than those of the North. Whereas the South has pursued a liberal democracy, a market economy, and a social welfare system, the North has maintained a communist dictatorship, a hereditary regime, and national militarization based on “kangsong daeguk,” “sungun” (선군), and “juche” (주체).⁴ While the South has established neighborly relationships with other nations around the world, acting as befits a major economic power and serving as host of a Group of Twenty 2010 summit, the Northern regime has been criticized and isolated for its development of nuclear weapons, proliferation of weapons of mass destruction (WMDs), counterfeiting of U.S. dollars, trafficking in drugs, smuggling, and other internationally outlawed activities.

At the military level, despite the fact that the South's military spending is between a tenth and fifteenth of the North's as a percentage of its gross domestic product, the ROK military's actual size surpasses the North's by approximately four times. The ROK has been developing a force of superior quality, whereas North Korea has been nurturing quantitative superiority. An overall comparative assessment of asymmetric quality and quantity shows that the two sides are roughly equivalent. The ROK is weaker with regard to field artillery and submarines but maintains similar levels in tanks, surface warships, and fighter jets. Furthermore, the South has continuously developed its quality-based capabilities in network-centric warfare (NCW), whereas the North has focused on nuclear weapons and other WMDs.⁵ Where the South has concentrated on deterrence and proactive-defense through combined ROK-U.S. forces, the North has pursued preemptive surprise-attack and lightning-war strategies. The ROK forces are controlled by the people and operate under an integrated system. The North's military lacks comparable training opportunities due to the nation's deteriorating

economy, but it has been told that long-term service and “sungun” military-first policies have kept individual training levels high.⁶

The South’s counter-asymmetric strategies can be subjected to “SWOT analysis,” a tool that—focusing on strength, weakness, opportunity, and threat—is widely used for future planning by corporations. From this perspective, North Korea’s greatest weakness lies in its internal inconsistency stemming from economic problems (insufficient food, energy, and foreign currency reserves), a hereditary dictatorship, and the “sungun” policy. In its current system, market competition is impossible, and there is a growing likelihood of implosion were it to open its economy to the world. Accordingly, the North Korean regime has exploited Greater Seoul’s proximity to the armistice line to hold it hostage to nuclear blackmail and so strategically counterbalance its weaknesses all at once.

It is crucial that South Korea take into consideration the two main aspects—conventional and irregular—of the North’s asymmetric strategies and develop proper responses to them. The ROK’s national power is superior to that of the North. The ROK must utilize this crucial asset by achieving the status of an advanced military power, through human and hardware reserves, while not excessively burdening the people. This will achieve deterrence at low cost. The ROK must also heighten and strengthen the ROK-U.S. relationship into a comprehensive security alliance. Cooperation with China is essential, but not at the cost of damaging the U.S. alliance. Lastly, the ROK must maintain friendly relations with neighboring powers (especially China), promoting a favorable environment for ROK-led deterrence and reunification.

Active protection of Greater Seoul from North Korean WMDs is difficult due to its proximity to the front line. Therefore, the ROK must be able to prevent and deter North Korean WMD threats by means of its high-tech NCW assets. First, taking advantage of its budgetary and technological capacity, the South must secure asymmetry in long-distance, detailed surveillance and reconnaissance as well as in multilevel missile defense. Second, the ROK must transform Greater Seoul’s locational weakness into a strength, by nurturing and developing its mobile reserve forces (especially assets already in the area) along with standing forces, under a “total force” concept. Third, with nuclear, intelligence, and missile-defense support from the United States and relying on a solid alliance, the South must build, maintain, and operate an independent, superior, and high-tech military.

Finally, the South would do well to reconsider how it rotates high military officials on a two-year cycle. Although an excellent system in terms of work, this two-year cycle is simply too short to allow officials to contrive innovative ideas of asymmetry, and it results in a lack of professional knowledge and motivation. The North, in contrast, maintains a long-term-service system, relying on a small number of skilled military elites.

TABLE 1
MAJOR NORTH KOREAN ASYMMETRIC THREATS

Category	Threat	Intensity	Frequency
Core	Nuclear blackmail, hostage threats	A	B
	Threats to turn Seoul into sea of flames	A	B
Major	Threats on Five West Sea Islands	A	A
	Rear disturbance, infiltration threats	B	B
	Cyber-attack threats (DDOS, etc.)	C	A
	Electromagnetic-attack threats	C	B
	Political-psychological offensive threats	C	A
Mixed	Symmetric-asymmetric mixed-attack threats	A	D

Note: A = high; B = medium; C = low; D = very low.

DIRECTIONS FOR ROK COUNTER-ASYMMETRIC STRATEGIES

Seoul has adopted a “proactive deterrence strategy” to replace the previous passive and defensive-oriented strategy, which was shown to be ineffective by the two deadly attacks of 2010.⁷ Table 1 summarizes, in order of importance, the major North Korean asymmetric threats, including recent ones—nuclear, missile, and high-tech assets (cyber- and electronic-warfare units, air-cushion stealth warships, etc.).

Responses to Nuclear and Missile Threats

The North’s nuclear and missile assets are expected to increase, in both performance and quantity, and to be used to maximize strategic superiority.⁸ The South’s counter-asymmetry response is to rely on extended deterrence by the United States while independently pursuing a four-stage nonnuclear deterrence strategy (surveillance/reconnaissance, precision strike, interception, protection) based on high-tech network-centric warfare. Because the political and psychological shock of nuclear weapons is substantial, “nuclear versus nuclear” deterrence is accepted relatively easily but concepts of nonnuclear deterrence through technology seem hollow and ineffective. However, conventional, high-tech NCW has the potential for precise destruction of the enemy’s nuclear weapons and missiles before they are fired and for their rapid and accurate interception in flight.

First, we assess the feasibility of the former—offensive deterrence through network-centric assets. If the South secures a sufficient variety of NCW assets at a strategic level, it will be able to conduct simultaneous strikes on nuclear and missile facilities and other centers of gravity in parallel with “deep” decapitating and surgical strikes. The effects of such attacks in the Iraq war have been compared to those of nuclear weapons. Preemptive strikes in self-defense must be fully considered, since even one nuclear missile attack will have catastrophic consequences. It

is up to surveillance and reconnaissance assets to determine whether indications of nuclear missile strike are sufficient to the nation and its leaders to gain legal recognition of preemptive strikes as legitimate self-defense.

To implement an offensive deterrence strategy based on high-tech NCW, the ROK must first, at a joint level, design and gradually construct, improve, and expand a system of platforms (satellites, aircraft, manned and unmanned aerial vehicles), high-resolution sensors (electro-optical, infrared, synthetic aperture radar), and missiles (ballistic, cruise, and long-range precision-guided). Second, it must construct a fast and accurate command-and-control network and minimize decision-making time. Third, in the longer term, it must pioneer development of such innovative approaches as directed energy, nonfatal, and robot weapons.⁹ The ROK must also reevaluate the current ROK-U.S. missile agreement with regard to range and payload, increase efforts toward the agreement's modification and supplementation, and expand national defense research and development (R&D), in order to select, concentrate on, and amass relevant core technology.

To make feasible the latter defensive aspect of deterrence, the South must initiate a complex Korean missile-defense system. At the national defense level, it is vital that the South reexamine and redesign its missile-defense architecture, and at the joint level conduct—and, vitally, institutionalize—a three-dimensional assessment of its current programs. At the ROK-U.S. level, optimization of the missile-defense system, excellence in command and control, and intimate connection with regional American missile defenses are imperative.

It is important that the ROK take note of the Israeli missile-defense experience. The United States, with its expeditionary forces deployed around the world, has been developing its missile-defense system based on three major axes, for ground-based, sea-based, and air-based interception. Israel, in contrast, has been formulating and developing systems for short-range rocket defense (Iron Dome), lower-tier missile defense, and upper-tier defense (Arrow-2, Arrow-3/Block-2, -3, -4). This multilevel Israeli defense system is centered on a single axis (ground), as best suited to its local forces and as the most economically feasible option.

In terms of hardware, the core asymmetry between the North and South today is one of network-centric warfare versus weapons of mass destruction, and at its center lies competition in technological development. Therefore, in order to secure a strategic, long-range NCW system, the South needs to foster national-defense R&D, committing itself to the accumulation of core technology. Furthermore, it must construct a cooperative relationship between the people and the military at a national level.

Responses to Long-Range Artillery and Conventional Missile Threats

The Greater Seoul Metropolitan Area is the heart of the South; its population density is high, and over 70 percent of the nation's wealth is concentrated there.

Meanwhile, military experts assume that the North, while threatening to turn the city into a sea of flames, will in fact attempt to solve its weaknesses in sustainment capabilities by seizing Greater Seoul early on so as to utilize its human and physical resources.

As a matter of defensive deterrence, the ROK must reevaluate and enhance its counterfirepower capabilities in three dimensions. North Korea not only has recently moved its LRA to reverse slopes and concealed it in camouflaged tunnels but has also continued development and production of KN-01/02 short-range missiles.¹⁰ The ROK must be able to strike LRA batteries within ten minutes after they emerge for firing and restrike until they retreat back to their tunnels. Hence, further decreases in the time required for the battle cycle (target identification, command and control, precision strike) at a joint level are unavoidable.

In terms of offensive deterrence, the ROK must secure capabilities to launch precision strikes against Pyongyang in response to threats to Seoul. Although the range of conventional weapons in the past was insufficient, Seoul is now able to acquire large quantities of various guided weapons that can reach Pyongyang. With such weapons, it can develop effective, simultaneous, and integrated tactics for parallel warfare tactics and decapitation directly threatening the Pyongyang national command. Pyongyang strike assets were once categorized as strategic; now they have become tactical. The relative geographical distances of Seoul and Pyongyang from the armistice line have been made irrelevant by long-range weapon systems.

A proactive defensive readiness posture that combines the above defensive and offensive deterrent measures is urgently needed.¹¹ As the South's population has increasingly become concentrated in Seoul, the city's strategic value has grown. The people, for whom the value of life and property has increased in proportion to the nation's economic and social development, demand the strengthening of national security.¹² Further, Greater Seoul has recently expanded northward; the distance from the demilitarized zone has decreased from between thirty and forty kilometers to between fifteen and twenty, and this trend is expected to continue in the future. This newly urbanized region was originally an operation area for frontal corps; it has become imperative that these units hold the current front without conceding territory.¹³

In order to achieve a state of proactive defense readiness, the ROK must be able to manage Greater Seoul's resources in multidimensional respects. Otherwise it will be merely a burden and obstacle for ROK forces and a crucial strategic resource for the North Koreans. The South must convert Greater Seoul's proximity to the front line from an asymmetric weakness into a strategic advantage by organizing and husbanding its human and material resources so that they can be, when necessary, rapidly converted into powerful, forward-deployed combat

units. Therefore, South Korea must implement a rapid Greater Seoul mobilization plan that, while minimizing the burden on the people, can nevertheless be activated in case of imminent threats. It is important that the ROK review its current reserve-force and industrial mobilization programs and bring them to levels matching those of the United States and Israel.

Responses to Threats to the “Five West Sea Islands”

The North’s recent provocations against Yeonpyeong Island demonstrated how vulnerable the Five West Sea Islands are. In fact, however, the Five West Sea Islands represent a geographic asymmetric disadvantage for the North, which hence may consider them a serious strategic threat.¹⁴ In fact, the South, by positioning forces forwardly on the islands and in the surrounding waters, can, during peacetime, impose a strategic blockade (serving to protect Greater Seoul) around the coasts of Hwanghae Province (one of the nearest land provinces from the Northern Limit Line [NLL] in North Korea). In wartime, the South can prevent sudden infiltration of Greater Seoul through the coastal region and can also strike western North Korea. Military strategists anticipate that the North will continue to monitor the strategic situation on the Korean Peninsula and contrive new methods to offset the NLL. At the current stage, thorough preparation and defense of the

West Sea NLL and the Five Islands—the front lines of the Republic of Korea—are urgent.

First, defensive deterrence against provocations is necessary. The North has continued to devise various provocation and threat scenarios, identifying its own weaknesses in each relevant factor (operational doctrine, organization, leadership, education, training, logistics, etc.) through simulation exercises and establishing specific responses for every possible situation. ROK forces must strengthen and demonstrate proportionate

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retaliatory capabilities in order to deter North Korean provocations effectively. It appears that the North will now reduce provocations against vessels at sea, but the South must remain vigilant as intelligence shows the North's ambition of developing and deploying, in collaboration with Iran, new "patrol killer" craft and submarines equipped with stealth technology. Seoul expects further provocations using submarines and remains highly sensitive to mixed provocations, such as those from both artillery and antiship/land-attack missiles. Therefore, a thorough review of naval and marine forces required for proportional retaliation against various types of provocations from the North is necessary at a joint level, along with accurate forecasting.¹⁵ With regard to the possibility of the North developing stealth patrol killers and small submarines, the need for further R&D is urgent.

Next, with respect to provocation deterrence, it is necessary to develop and examine scenarios requiring various types of proportional retaliation, assessing whether the ROK should not respond in certain situations, so as to avoid escalation, while at the same time providing active support, and to accumulate "combat" experience through simulation exercises. Furthermore, the ROK must consider hypothetical situations in which the North provokes the South with a combination of various methods, and the ROK must also prepare for proportional retaliation along valid lines of self-defense.

Additionally, the South should also examine deterrence measures against offensive actions—that is, more serious provocations. The Five West Sea Islands are highly vulnerable now, but should the South convert them into unconquerable fortresses, their vulnerability could become a strategic advantage due to their closeness to the North. Baekryong Island, from the North's perspective, is similar to Taiwan's Jinmen Dao (Quemoy Island) (金門島) in China's eyes in the years of tension and confrontation in the Taiwan Strait. Jinmen's strategic value has long since dissipated, but Baekryong, the ROK's eighth-largest island and the country's northernmost territory, 180 kilometers from Incheon City, lies only twenty-nine kilometers from North Korea's Hwanghae Province and 150 kilometers from Pyongyang, as shown in the map. For its part, Jinmen Dao, 250 kilometers from Taiwan but less than ten from mainland China, was originally in a weaker position than Baekryong, but Taiwan was able to transform it into a strategic fortress that defended itself against 470,000 artillery shells fired on it from 23 August to 5 October 1958. It is now a tourist site, governed by its people.¹⁶ If Seoul is able to do the same with Baekryong and the other West Sea Islands, they will deter North Korean violations of the NLL and, if necessary, threaten the North's middle region. Moreover, the islands will compel the North to reposition frontal forces to the rear areas, in effect deterring North Korean threats of turning Seoul into a sea of flames.

Responses to Special Operations (Light Infantry) Threats

North Korea is known to possess superior irregular-warfare capabilities (special-operation, mountain, night, and depth-infiltration warfare, etc.) and to combine them effectively with regular-warfare tactics. Moreover, it has recently greatly increased its light infantry units;¹⁷ intelligence shows that the North has increased its special warfare force to approximately two hundred thousand men, apparently intended to execute guerrilla-type depth infiltration warfare by exploiting the weaknesses of high-tech forces in mountainous regions. In order to counter such asymmetric threats, the South must consider two measures—defensive and offensive.

With regard to defensive counter-asymmetric measures in this area, the ROK must develop night-surveillance, reconnaissance, and identification equipment, along with night-targeting and precision-strike weapons, in order to “light up the night.” Scientists have noted that current technology is sufficient for this purpose. Moreover, with aerial surveillance and reinforcement and unmanned air reconnaissance methods, as well as helicopter-based mobility and strike, the ROK will be able to “flatten the mountains.” Considering the lack of resources, the South should strongly consider prioritizing aerial methods and decreasing procurement of tanks and other ground mobility and strike forces.

Next, the ROK must bolster its mobile reserves and homeland defense systems. As previously stated, the South must actively prepare against rear infiltration by the North’s frontal units by upgrading various reserve divisions to match the standards of standing forces. The South must establish a counter-infiltration operation system, with a combined effort from civil society, government, and the military, to improve major current vulnerabilities. This system would review countermeasures and strengthen weaknesses against not only ground but also underground, aerial, and sea/underwater infiltration. The South should especially apply lessons learned from the ROKS *Cheonan* and Yeonpyeong Island shelling incidents and prepare forces and operational concepts to effectively counter underwater infiltration attempts, and, moreover, develop its capabilities against submarines as well as against small, high-speed, stealth patrol killers. The ROK forces must perceive North Korean infiltration capabilities as asymmetric assets no less dangerous than WMDs, and should continuously review, supplement, and develop counter-infiltration measures (policy, strategy, doctrine, weapons/equipment, organization, exercises, support, etc.) in various aspects at a joint operational level.

The ROK can also sharply improve its own depth-infiltration special-operation capabilities by capitalizing on the strengths of a “net-centric operational environment” (NCOE). Today, most advanced military powers are actively utilizing the nonlinear decentralization capabilities offered by NCOE for unconventional

warfare. NCOE has continuously expanded the purpose and range of special operations at a strategic level, by virtue of the ability it gives units to be deployed in enemy territory and carry out their missions while maintaining close network connections with friendly forces and rear services.¹⁸ These special operation forces will not only become a strategic liability to the North itself but also restrain and deter enemy infiltration attempts and play an indispensable role in achieving victory in war. An organic combination of NCOE, “blitz” warfare by regular ground and air forces, and special forces could produce a counter-asymmetric force far superior to North Korea’s regular-irregular/mixed-warfare tactics.¹⁹

Responses to Cyberwarfare Threats

North Korea’s cyberwarfare should not be ignored. The North perceives cyberwarfare tactics to be as important as WMDs and has concentrated on their development.²⁰ The regime selects young students of ages twelve and thirteen, enrolls them in computer courses for the gifted at the First and Second Geumseong Senior-Middle Schools, and then matriculates them in either Kim Il-sung University or the Command Automation University (formerly known as Mirim University) after graduation. The Command Automation University selects around a hundred talented students for an intensive five-year course and then sends graduates to cyber-related institutions and military units. Also, as illustrated in table 2, the 121st Unit, originally under the Korean People’s Army General Staff Reconnaissance Bureau, was reorganized in 2008 into technical reconnaissance teams, with a mission that includes infiltrating computer networks, hacking secret information, and planting viruses to paralyze enemy networks. Other such organizations—the 204th Unit, under the Operations Department of the Unification Bureau, and the Psychological Operations Department of the North Korea Defense Commission—are primarily focused on cyber-psychological warfare.

North Korea is known to operate and manage directly websites—for instance, *The North Korea Official Page*, in collaboration with pro-North and civil organizations within the South—that execute psychological warfare and organized espionage.²¹ According to a report submitted to parliament by the National Police Agency in September 2008, the agency had by that date blocked forty-two foreign-based, pro-North websites out of a total of seventy-two that propagandize *juche* ideology and the North’s unique socialist state while at the same time inciting anti-South and anti-American sentiments. North Korea has also utilized websites operated by sympathizing parties in order to initiate espionage. By the end of 2008 North Korea possessed twenty-four websites, including “Gugukjeonson” (구국전선), and the numbers continue to increase. Recently, pro-North civil organizations digitized posters and leaflets used in the 1980s by activist students and uploaded them to their websites, where they have been highly effective.²²

TABLE 2
CYBER- AND CYBER-PSYCHOLOGICAL WARFARE UNIT

Institution/Unit	Composition	Mission and Activities
121st Unit (Intelligence Bureau)	Approx. 300 persons, 10 combat teams, 110 research teams	Hacking, virus-planting in military units related to cyberwarfare
Central Party Investigative Group	Approx. 500 persons, 10 technical teams	Technical education and training
Unification Bureau Operations Department	50 persons	Cyber-psychological warfare, organizational espionage
204th Unit (Operations Department, of the Unification Bureau)	Approx. 100 persons, 5 espionage teams	Cyber-psychological warfare planning, execution, and research on techniques and technology

The South's security will be seriously threatened should it lose the battle to control cyberspace. However, it has not been easy to devise innovative counter-strategies, because of the special conditions of cyberspace and the substantial investment and effort required. The best policy available at this point is, first, to upgrade, as a strategic matter, the ROK Cyber Command, established in early 2010. This command will open the way for cooperation among existing national cyberwarfare institutions and for collaboration in new policies and connections. It can also formulate a system that will enable cyberwarfare operations led by the military in time of war; connect and conduct integrated intelligence and regular operations; and design an overall cyberwarfare structure, including the concepts, doctrine, requirements, education, and training methods needed for the command to operate effectively.

Countermeasures at the government level are also necessary. The Republic of Korea is an information-technology powerhouse. Its world-class "cyber geniuses," technological abilities, investment capital, and infrastructure make it asymmetrically superior to the North. The problem lies with the government's lack of effort and will to organize and systemize such potential for effective use in the field of national security. It is urgent that we resolve such an ironic contradiction. At a policy level, solutions may include establishing norms for the cyber realm, obliging real-name usage, creating a cyber "shinmungo" (신문고, a big drum that was struck by petitioners against the government during the Joseon dynasty, 1392–1897) to allow the people to report suspicious activities, formulating a voluntary cyber reserve force and a mobile civil-defense unit, commending regions that have greatly contributed to cyber protection, and holding cyber-protection technology competitions.

Furthermore, the ROK must establish and strengthen legal and systematic devices that can block North Korea's unusual cyber-infiltration tactics and sever its

connections with sympathizers within the South. Although it is important that the government protect its citizens' freedom in cyberspace, irresponsible, antisocial, and antinational behavior must be constrained. Cyberspace has now become the fifth battlefield, where an important "nonwar" must be fought and victory won through a "minimal damage" strategy.²³

Responses to High-Technology Threats

Along with its nuclear weapons and missiles, North Korea is also developing high technology relevant to conventional weapons. Electromagnetic-pulse, GPS-disturbance, stealth technologies represent a few of its latest asymmetric programs intended to offset the South's developing NCW forces by targeting its weaknesses.

The 2008 ROK national defense white paper stressed that North Korea has developed various GPS-disturbance and deception devices and was contemplating measures against precision-guided weapons.²⁴ It has been discovered that the North attempted to export to Iran, Syria, and other Middle East nations GPS-disturbance devices that can jam high-tech missiles and precision-guided bombs; in May 2010, ROK government officials discovered in a North Korean weapon export catalogue information indicating that the CHT-02D, the type of torpedo that sank ROKS *Cheonan*, contained a GPS-disturbance device.

The situation may further deteriorate if North Korean jamming devices are, or will be, able to affect the ROK's precision-guided weapons, such as the Joint Direct Attack Munition (JDAM), its wind-corrected munition dispenser, and other systems intended to counter long-range artillery threats against Greater Seoul.²⁵ In the second Gulf War in 2003, there were cases in which the Iraqi army deployed Russian GPS-disturbance devices against U.S. precision-guided weapons, resulting in ineffectual explosions. The National Defense and Science Institute has reportedly invested a great deal of ROK currency—more than forty billion won—over the past six years to develop a Korean guided-glide weapon, the Korean GPS-Guided Bomb, which is known to perform better than JDAM.²⁶ Its range is from seventy to a hundred kilometers (JDAM's current range is twenty kilometers) and can accurately target underground LRA tunnels with entrances less than three meters across (ten meters for JDAM) from a safe distance. The successful development of the Korean GPS-Guided Bomb is indeed good news and will greatly contribute to national security, but adequate countermeasures against North Korean GPS jamming are still pending and continue to require scientific and technological effort.

A recent article stated that North Korea has developed and employed stealth and camouflage technologies.²⁷ It reported that an exclusively obtained, eighty-page North Korean military manual on electronic warfare explained various camouflage and deception methods in detail, such as that radar-wave-absorption paint of 1.4

to 1.8 mm thickness achieves a wave-absorption rate of 95 percent for three to five years. This manual suggests that anti-wave and anti-infrared paint has been applied to the entrances of LRA tunnels, obtaining an absorption rate of 99.8 percent of radio waves and 99.9 percent of infrared. Further, the manual is reported as stating that fake tunnel entrances have been created about 150 to 300 meters away from the real ones, with nearby angled reflectors to draw enemy radar. The manual also includes graphs that analyze differences in facility concealment from various distances and heights (such as the twelve-kilometer flight altitude of the U.S. Army's RC-135 and ROK Army's Hawk 800XP) and suggests that the ROK's ground-surveillance radars deployed in the frontal region can be deceived by walking at less than one kilometer per hour at five-meter intervals.

North Korea has also developed small stealth submarines. In May 2005, Iran publicly announced the production of its first domestically produced submarine, "a craft capable of operating stealthily."²⁸ Witnesses have judged that this submarine, which the Iranian Ministry of Defense and Armed Forces Logistics calls *Ghadir*, is similar in appearance to the North Korean *Yugo* (유고) class; other experts believe that *Ghadir* is about 50 percent longer than the *Yugo* class and therefore is more like the North Korean *Sang-o* (상어, "Shark") class. On 8 August 2010, Agence France-Presse and the Associated Press reported that the Iranian navy had launched four domestically produced small submarines, of the "*Ghadi* [*sic*]" class, that were based on the North Korean *Yeon-o* (연어, "Salmon") type, and possessed stealth features enabling them to evade sonar and sonobuoys.²⁹

The Persian Gulf is shallow, with an average depth of twenty-five meters and a maximum of 170. The West Sea (or Yellow Sea, west of the Korean Peninsula) has an average depth of forty-five meters and a maximum of a hundred. This similarity of numbers, against the background of the torpedoing of ROKS *Cheonan*, seems profoundly significant. Bruce Bechtol, an American expert on the Korean Peninsula, has stated that "North Korean *Yugo*-class submarines may become a potential threat to the South in the West Sea area since they are able to operate in shallow waters" and that "the North Korean submarines provided to Iran are most likely *Yugo* class."³⁰ From such opinions and statements of experts, we can surmise that the Iranian *Ghadir* submarine is based on the same prototype as North Korea's newly developed submarine that operates off the Nampo Naval Base in the West Sea.

A TURNING POINT

Despite its severe economic crisis, the North has managed to develop nuclear weapons and missile technologies and conduct pioneering research on the means to counter the South's network-centric warfare assets. The North has

astutely selected and concentrated on low-cost weapons and assets that can effectively penetrate the South. A strategy to counter these asymmetric threats is needed, and the answer is to both develop high-tech NCW assets and maintain superiority in counterstealth, counter-submarine, counterelectronic, and counter-cyberwarfare capabilities. The Republic of Korea possesses all the resources and capabilities required. What the ROK needs, and urgently, is an understanding of its situation and a collective will to solve its problems and push forward with its plans.

Today, the two nations on the Korean Peninsula compete under different ideologies, government systems, and strategies. South Korea, with its superior national power, strives to achieve an asymmetric superiority based on high-tech, networked forces, assets of superior quality, and a robust alliance with the United States—its core asymmetric factor. Meanwhile, the North, in severe economic crisis and suffering the effects of a hereditary dictatorship, pursues quantitative superiority along with a focus on nuclear and other weapons of mass destruction, as well as on tactical asymmetric measures that exploit the South's weaknesses.

Until now, the North has consistently aspired to achieve an armed reunification of the two Koreas. However, against South Korea, a nation boasting a thriving economy thirty times greater than its own and a superpower ally, the North had no choice but to complement its conventional warfare doctrine with asymmetric concepts. The North Korean underground tunnels, tunnel bases, mixed warfare, infiltration tactics, long-range artillery, nuclear weapons, CBR weapons, missiles, GPS disturbance, stealth, small submarines (like that which torpedoed ROKS *Cheonan*), and other assets yet unknown are all examples of the North's asymmetric strategy and methods.

Our ancestors applied the "porcupine strategy," "yiyijaeyi," and "yisojaedae" as examples of what we now call asymmetric strategies. The great commander Admiral Yi Sun Shin invented the "turtle ship" and the "crane wing formation" and employed them successfully in battle during the Japanese invasions of 1592 and 1597.³¹ As his proud descendants, it is time for the citizens of the Republic of Korea to shift to a new paradigm, reassess the strengths and weaknesses of their national defense, and develop counter-asymmetry strategies against the North. Like the attacks of 9/11 against the United States, the tragic sinking of ROKS *Cheonan* and the shelling of Yeonpyong Island must together mark a turning point in the history of the South's national defense.

The policy directions suggested here call for an increase in the national defense budget, the cooperation and coordination of the people, and determination in the political sphere. The words of the Roman strategist Vegetius, *Si vis pacem, para bellum*—should you desire peace, prepare for war—are still valid today.

NOTES

The opinions in this article are the personal views of the author and do not necessarily reflect the policies and strategies of the ROK Ministry of National Defense, Joint Chiefs of Staff, armed forces, or government. Additionally, this article does not reflect the position of the U.S. government.

1. North Korea's torpedoing of ROKS *Cheonan* and bombarding of Yeonpyeong Island can be understood as efforts to create achievements for Kim Jung-eun (the apparent prospective successor to Kim Jong-il); to induce direct, bilateral North Korean-U.S. talks and resumption of Six Party Talks; and to elicit support from China. See 조성율 [Cho Seung Ryul], "북한의 연평도 포격도발 및 한반도 미래 전망" [Intentions behind North Korea's Bombardment of Yeonpyeong Island and Future Prospects on the Korean Peninsula] (a paper presented at Korea Institute for Maritime Strategy [KIMS]-Research Institute for Maritime Strategy [RIMS] seminar, 9 December 2010, Seoul), pp. 9-14.
2. At this writing it is expected that North Korea will complete a base for hovercraft and stealth air-cushion warships at Koampo, Hwanghae Province, only fifty kilometers from the South's northwestern islands, in December 2011. See "Stealth Hovercraft Armada Poised to Invade South Korea," 31 May 2011, available at www.lucianne.com/; and 윤성원 [Yoon Sung Won], "NLL 인접 북한 고ampo 해군기지 완공 단계" [Construction of Koampo Naval Base near NLL Nearing Completion], 29 May 2011, available at www.asiatoday.com.kr/.
3. 이윤규 [Lee Yoon Kyu], "북한의 사이버 심리전 실체와 대응방안" [The Essence of North Korea's Cyber-Psychological Warfare and Appropriate Counter-measures], 육군 [The Army, monthly magazine], August 2009, pp. 1-6. North Korea pursues a hybrid concept involving preemptive surprise attacks and lightning, combined-arms warfare combining regular and irregular forces, cyber- and psychological warfare, terrorism, etc., to offset its technological inferiority against conventional ROK-U.S. forces.
4. "Juche" [주체], or the "juche ideology" [주체사상], is an ideology of national "self-reliance," developed in the Kim Il-sung era and now used as the theoretical foundation of the regime; see www.globalsecurity.org/, s.v. "Juche [주체, Self-Reliance or Self-Dependence]."
5. 남만권 [Nam Man Kwon], "최근 화생무기 현안의 문제점과 우리의 과제" [Current Issues and Tasks on the Latest CBR Weapons], *Korea Institute for Defense Analyses Weekly*, 29 May 2000.
6. In 2010, according to a comparison of flight time, South Korean fighter pilots flew about 140 hours and North Korean pilots less than ten.
7. Song Sang-ho, "ROKS *Cheonan* Sinking Reshapes Military Strategies," *Korea Herald*, 21 March 2011, pp. 4 and 15.
8. 변창섭 [Chang Sup Byun] and Bruce Bechtol, "북한, 기존의 국가체제론 변화 어렵다" [Change Expected to Be Difficult for North Korea under Current Regime], 내가 보는 북한-30 [My View of North Korea-30], *Radio Free Asia*, 11 August 2010, available at www.rfa.org/. They offered several reasons for North Korea's nuclear program. First, because North Korea can attain high military status by possessing nuclear weapons, Kim Jong-il is developing them as a means to maintain his own power. Second, they argue, the North Korean regime is believed to have received at least two billion dollars from Syria for plutonium, and a substantial amount of diesel fuel as well as petroleum from Iran for cooperating with that nation's highly enriched uranium program. Lastly, North Korea desires highly enriched uranium and plutonium weapons as a deterrent or offensive weapon against the ROK-U.S. alliance and Japan.
9. National plans refer to required core assets in terms of stages. The first stage is surveillance and control, including multipurpose satellites, high-altitude unmanned reconnaissance aircraft (Global Hawk), early-warning radar for ballistic guided missiles, early-warning control aircraft (E-737), and a combined firepower-employment system (JOFOS-K). The second is precision strike: combined long-range attack missiles (JASSM), direct precision missiles (JDAM), and bunker busters (BGU-28). The third stage, interception,

- involves air-defense missile control centers (ADM-Cell), surface interception guided missiles (SM-6), and ground-based Patriot missiles (PAC-II/III). The fourth stage is nuclear protection: EMP defense systems and individual/unit defenses.
10. 유용원 [Yoo Yong Won], “북한군 비밀교범 단독입수: 북한 위장 전술, 레이저 전파 까지 흡수한다” [Exclusive Obtainment of Confidential North Korean Military Manual: North Korean Camouflage Tactics Able to Absorb Radar Waves], *조선일보* [Chosun Ilbo], 23 August 2010, available at news.chosun.com/. Recently, North Korea has developed and deployed enhanced Scud missiles, along with the new KN-01 ground-to-surface missile and KN-02 ground-to-ground missile. Replacing the outdated Chinese Silkworm (with a range of 83–95 kilometers and vacuum-tube circuitry), the KN-01 ranges 120–160 kilometers and has improved accuracy. The short-range (120 kilometers) KN-02 uses solid fuel, is mobile, has an accuracy (circular error probable) of a hundred to two hundred meters, and can be launched within five minutes.
 11. 권태영 [Kwon Tae Young] and 노훈 [Roh Hoon], *21세기 군사혁신과 미래전* [21st Century Military Reform and Future Warfare] (Seoul: 법문사 [Beobmusa], 2008), pp. 361–62.
 12. The ROK Ministry of National Defense (MND), *한국적 군사혁신의 비전과 방책* [Visions and Measures of Korean Military Reforms] (Seoul: ROK MND, 2003), p. 30. In 2030, South Korea's economy is expected to be placed among the “G7” industrialized nations and its information index to enter the “G5” (meaning advanced countries in terms of information technology, including the United States, Japan, the People's Republic of China, and the EU).
 13. 김정익 [Kim Jung Ik], “미래 합동작전에서 지상군의 중심적 역할” [The Central Role of Ground Forces in Future Combined Operations], in Korea Research Institute for Strategy (KRIS), *2008년 육군 전투발전: 대전환기 정예화 선진육군의 비전과 전략* [2008 Army Combat Development: Visions and Strategies for an Advanced Elite Army during Times of Transition] (Seoul: KRIS, September 2008), pp. 491–92 and 525.
 14. As shown in the map, the five islands are Baekryong Do, Daechung Do, Sochung Do, Yeonpyeong Do, and Woo Do. “Do” [도] means “island” (for example, Yeonpyeong Do is Yeonpyeong Island).
 15. Jung Sung-ki, “S. Korean Navy to Boost Precision Weapons and Surveillance Aircraft,” *Defense News*, 10 January 2011, pp. 11–12.
 16. On the second Taiwan Strait crisis and Jinmen (Quemoy) and Matsu (Matsu) Islands, see “Second Taiwan Strait Crisis Quemoy and Matsu Islands 12 August 1958–01 January 1959,” available at www.globalsecurity.org/.
 17. North Korea has reorganized its frontal corps structure, increasing its light infantry divisions and elevating infantry battalions to regiments.
 18. This tactic involves employment of special units against strategic targets deep in enemy territory to radiate them with directed-energy weapons and target them with long-range precision weapons launched from the land, sea, and air. Success requires high confidence of air supremacy and real-time precision strike support.
 19. 권태영 [Kwon Tae Young], *육군비전 2030 연구* [Research on Army Vision 2030 Research] (Seoul: KRIS, November 2009), pp. 298–302.
 20. On 7 July 2009 and 4 March 2011, South Korea and the United States suffered concentrated DDOS cyber attacks; because North Korea was identified as the source of these attacks, experts began to reevaluate North Korea's cyberwarfare capabilities. North Korea currently operates technical reconnaissance teams consisting of approximately a thousand members under the People's Army General Staff Reconnaissance Bureau; professional North Korean hackers have usually been placed in China, from where they continuously attempt to hack the internet sites of major South Korean government institutions.
 21. *The North Korea Official Page*, available at www.korea-dpr.com; Gugukjeonseon [국국전선], available at www.ndfsk.dynds.org.
 22. Lee, “The Essence of North Korea's Cyber-Psychological Warfare and Appropriate Counter-measures.”

23. Conventionally speaking, first-generation warfare is the destruction of enemy forces in nearby areas through concentrated fires (e.g., the Napoleonic Wars); second-generation warfare is the destruction of enemy forces located farther away through concentrated fires (i.e., artillery) (e.g., the First World War); and third-generation warfare is characterized by short-term maneuver battles involving “shock and awe” tactics. Fourth-generation warfare is political conflict in which available asymmetric tools of warfare are utilized to defeat the enemy resolve to carry on the fight (e.g., Mao Zedong’s People’s War against the Kuomintang, the Vietnam War, etc.). In the fifth generation, attacks are launched to weaken enemy soft power. For more details, Andrew Mack, “Why Big Nations Lose Small Wars,” *World Politics* 27, no. 2 (January 1975), pp. 175–200; New Military Paradigm, 제4세대전쟁 [Fourth-Generation Warfare] (Seoul: 집문당 [Jimmundang], 2010); 전중순 [Jun Chong Soon], “전쟁없는 전쟁: 제4세대전쟁” [Fourth Generation: Warfare without Warfare], *군사연구* [Military History Studies], no. 125 (August 2008); and 양욱 [Yang Wook], “제4세대 전쟁: 한국의 대비책은?” [Fourth-Generation Warfare: What Is the ROK’s Preparation?], *시스저널* [Sisa Journal], no. 1108 (12 January 2011), available at www.sisapress.com/.
24. ROK MND, *Defense White Paper 2008* (Seoul: ROK MND, 2008), p. 27.
25. “북한 장사정포대에 대한 공격은 GPS 방해시 어렵다” [Precision Strike of North Korean Long-Range Artillery May Be Difficult When GPS Is Disrupted], 16 October 2006, available at www.dailynk.com/; 고광섭 [Ko Kwang Sup], “만약 한국의 GPS 항해 신호가 불가능하게 된다면” [If It Becomes Impossible to Use GPS Navigation Signals], *국방일보* [Kookbang Ilbo], 10 October 2008. North Korea has attempted to export its GPS-jamming devices, which are enhanced versions of Russian models, to Middle East nations, including Iran and Syria. The South is correcting this shortfall with a wind-compensated munition dispenser that uses inertial guidance only; it includes the CBU-87 combined effects munition, CBU-99 Gator antitank/antipersonnel mine, and CBU-97 sensor fused weapon. See “Wind Corrected Munition Dispenser (WCMD),” *FAS Military Analysis Network*, available at www.fas.org/.
26. 안성규 [Ahn Sung-kyu] and 김병기 [Kim Byung-ki], “산 뒤 숨긴 북한 장사정포 잡는 한국형 JDAM 개발” [Development of Korean JDAMs That Can Destroy North Korean Long-Range Artillery Hidden behind Mountains], *중앙선데이* [JoongAng Sunday], 29 August 2010.
27. Yoo, “Exclusive Obtainment of Confidential North Korean Military Manual.”
28. 김필재 [Kim Pil Jae], “북한과 이란의 슈퍼 어뢰를 가진 스텔스 잠수함 협력” [North Korea–Iran Connections Regarding Stealth Submarine Super Torpedoes], *Independence Newspaper*, 6 April 2010.
29. 이인목 [Lee In Muk], “이란, 북한기술도입해 새로운 잠수함 완성” [Iran Completed New Submarine with North Korean Technology], *조선일보* [Chosun Ilbo], 9 August 2010, available at news.chosun.com/.
30. “북한 어뢰의 남한 해군함정 폭침” [North Korea Torpedo Sinks South’s Navy Ship], *DemocracyForums*, May 2010, available at www.democracyforums.com/.
31. For the turtle ship, see the cover illustration and caption of the Spring 2010 *Naval War College Review* and, for the Japanese invasion, Yoji Koda, “The Emerging Republic of Korea Navy: A Japanese Perspective,” in the same issue (pp. 13–34).