

RMA Diffusion Paths and Patterns in South Korea's Military Modernization

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Notwithstanding the perennial body of literature covering the Revolution in Military Affairs (RMA) debate over the past two decades, the vast majority of writings have been silent or ignored the implications of the RMA diffusion on the security and defense policies of advanced small states and middle powers. This paper bridges this knowledge gap by tracing the impact of the RMA diffusion and its adaptation in the Republic of Korea's military modernization processes. The principal argument is that for over two decades South Korea has been rethinking its defense strategies, while searching for relevant operational concepts that would allow greater flexibility, adaptability, and autonomy that address existing as well as future-oriented defense requirements. In the process, the ROK military has pursued RMA-oriented force modernization in order to acquire advanced military capabilities to counter the widening spectrum of threats, mitigate technological and interoperability gaps with U.S. forces, and eventually attain a self-reliant defense posture. In this context, South Korea's RMA trajectory shows patterns of speculation and experimentation in terms of concepts, doctrine, and technology; however, with relatively incremental implementation in the use of force. Accordingly, there has not been a distinct Korean RMA-oriented conceptual strategic innovation toward a new theory of war; nor has the Korean RMA trajectory reflected a disruptive paradigm shift in warfare.

South Korea and the RMA Debate

Notwithstanding the perennial body of literature covering the Revolution in Military Affairs (RMA) debate over the past two decades, the vast majority of writings have been silent or ignored the implications of the RMA diffusion on the security and defense policies of advanced small states and middle powers. The intellectual thrust in exploring the RMA over the past two decades has focused on the U.S.-centered RMA debate that has evolved in concert with shifts in U.S. military strategy and use of force. In particular, there have been at least five progressive stages or "RMA waves" in the ongoing debate¹: (1) Initial intellectual discovery by the Soviet military thinkers in the early 1980s, (2) Conceptual adaptation, modification, and integration in U.S. strategic thought during the early 1990s, (3) Climax of the RMA debate during

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the mid-to-late 1990s, (4) A shift to the broader “defense transformation” and its partial empirical investigation in the early 2000s, (5) A shift to “modernization-plus” in conjunction with second and third thoughts questioning the RMA paradigm from 2005 onwards. With the persisting focus on the American RMA debate there is a significant deficit in the existing literature, particularly in the doctrinal, organizational, and technological dynamics surrounding the RMA diffusion in the international transmission and strategic interaction of RMA-oriented concepts and technologies in divergent geostrategic settings and environments.

This paper bridges this knowledge gap by tracing the impact of the RMA diffusion and its adaptation in the Republic of Korea’s (ROK, South Korea) military modernization processes. It starts with the assumption that South Korea represents a relevant case for the study of RMA diffusion primarily for the progressive complexity of its security dilemmas, increasing sophistication of its defense-industrial base, robust combat capabilities, and its strategic alliance with the United States. South Korea’s security environment has been traditionally characterized by a state of unnatural conditions with the continuous preparation for war and the constant expectation of war. However, South Korea’s threat envelope has become more fluid and multifaceted since the early 1990s. In addition to the prevailing conventional threats, the country’s conflict spectrum has increasingly faced “hybrid” threat assessments that include a range of asymmetric and non-linear security challenges.² These have converged two extreme threats on a threat scale. One is North Korea’s continuously advancing ballistic missile program coupled with its WMD (nuclear, chemical, and biological) development.³ The other is the specter of a failed North Korean state due to its progressively worsening economic situation, gradual decay, accompanied by internal structural erosion, and prolonged international diplomatic isolation that have broadened the risks of potential instability and volatility; i.e. scenarios ranging “from implosion to explosion.”⁴

Simultaneously, South Korea’s defense planners have taken into account regional strategic changes, military modernization initiatives, and the enhanced power projection capabilities of its neighbors. East Asia’s current and potential economic and technological growth is propelled by the rise of China and India, but also juxtaposed by the pervasive geostrategic regional uncertainties, unresolved political and historical legacies, and intensifying competition over emerging issues such as energy security has led to larger military expenditures and different forms of military modernization.⁵ Ongoing regional force modernization trends show the procurement of advanced air assets, air-defense systems, missiles, naval assets, stealth technologies, and upgrade and modernizations of C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance). In terms of military expenditures, for example, over a 10-year period (1999–2008) defense spending in East Asia increased by 56 percent with many countries planning major military purchases.⁶ As Richard Bitzinger noted, nearly every country in the Asia-Pacific currently possesses at least some “fourth-generation” fighter aircraft that provide greater lethality, precision, range, and overall power projection capabilities.⁷

With the changing security dynamics, South Korea has been rethinking its defense strategies, while searching for relevant operational concepts that would allow greater flexibility, adaptability, and autonomy that address existing as well as future-oriented defense requirements. The widening operational imperatives have also shaped the direction and character of the ROK-U.S. alliance, and propelled a

realignment of the U.S. Forces deployed in Korea, which are being gradually reconfigured toward supporting regional or even global missions rather than addressing traditional static peninsular defense.⁸ Under the revamped alliance system, the ROK forces are required to strengthen their qualitative edge, assume greater autonomy and responsibility in defense of the country, and provide operational support to U.S. forces.⁹ All these developments shaped the rationale for acquiring advanced RMA-oriented capabilities through a comprehensive force modernization of South Korea's military in areas of air-defense, strategic and tactical surveillance, early warning, command, control, communications, computer and information, battle management, target acquisition, stand-off, precision-strike, and network-centric warfare. However, the diffusion and adaptation of RMA-related concepts in South Korea can be traced to the mid-1990s, when the ROK Army, Navy, and Air Force first published conceptual visions of the RMA and future warfare.

Conceptualizing RMA Diffusion Trajectories

Prior to the analysis, a brief theoretical overview of the RMA is in order. The RMA has been conceptualized simultaneously as a theory, process, and debate. Notwithstanding the existence of often diverging definitions and schools of thought that have evolved since its early inception as a *Military-Technical Revolution* theory by Soviet strategic thinkers in the early 1980s, its underlying premise has converged on three key arguments: (1) The application of new information technologies into military systems coupled with innovative operational concepts and organizational adaptation that will fundamentally alter the character and conduct of warfare by producing a dramatic increase in combat potential and effectiveness.¹⁰ (2) States and military organizations adopting RMA-oriented concepts, technologies, and relevant force structures will possess a considerable strategic advantage over those that do not.¹¹ (3) When embedded in broader military revolutions, RMAs may lead to profound changes in the framework of war, altering the state capacity to create and project military power for political ends.¹²

RMA theory has been largely characterized in the context of a “discontinuous” or “disruptive” paradigm shift in warfare; however, in practice, it has been more synonymous with a continuous conceptual, technological, organizational, and operational military innovation.¹³ Most military innovations have been distinctly less than revolutionary or transformational and have consisted of incremental or often near-continuous improvements in existing capabilities. The RMA has been more profound in shaping the direction and character of military modernization processes, “the relevant upgrades or improvements of existing military capabilities through the acquisition of newly imported or indigenously developed weapons systems and supporting assets, the incorporation of new doctrines, the creation of new organizational structure, and the institutionalization of new manpower management and combat training regimes.”¹⁴ Subsequently, the transmission, interaction, and transformation of RMA-related ideas and knowledge into military products and processes through a range of strategic, institutional, technological, and cultural drivers has defined the spectrum of RMA diffusion.

RMA diffusion trajectories can be measured along: (1) *paths*—emulation, adaptation, and innovation; (2) *patterns*—speculation, experimentation, and implementa-

tion; and (3) *magnitude*—exploration, modernization, and transformation. According to Farrell and Terriff, military emulation involves importing new tools and ways of war through imitation of other military organizations. Adaptation is defined through adjustments of existing military means and methods where multiple adaptations over time may lead to innovation. Military innovation involves developing new military technologies, tactics, strategies, and structures.¹⁵ By adapting RMA-oriented concepts, technologies, and organizations, military organizations may modify existing tactics, concepts, and weapon technologies. At the same time, military organizations may explore the RMA by developing new modes and means of operations. If exploration transcends into innovative doctrinal or structural changes, it crosses the threshold of innovation.¹⁶

Thomas Mahnken argues that military services develop new approaches to combat in three distinct, but often overlapping patterns: speculation; experimentation; and implementation.¹⁷ Speculation, involves identifying novel ways for solving existing operational problems or acknowledging the potential of emerging technologies. As speculation turns into greater awareness, military services establish experimental organizations, battle laboratories, and units tasked with experimenting with new concepts, force structures, weapons technologies, and warfare methods. With broadening and deepening experimentation processes, a consensus emerges when the military leadership and services decide to adopt, adapt, and refine selected experimental operational concepts, combat tactics, organizational force structures, or new generations of weapons systems and technologies. The implementation phase may include a range of indicators: the establishment of new military formations, doctrinal revision to accommodate new ways of war, resource allocation supporting new concepts,

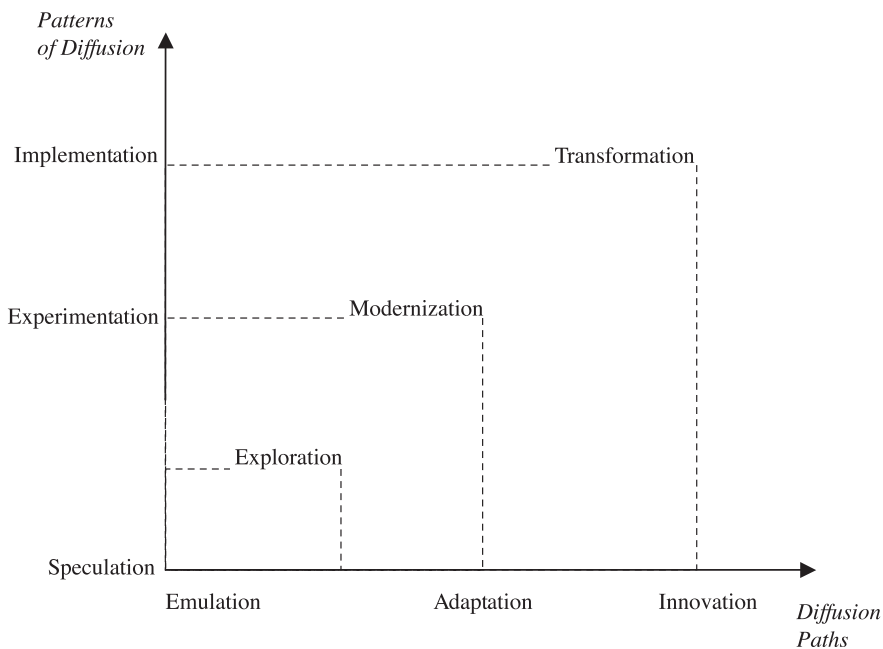


Figure 1. Conceptualizing RMA Diffusion Trajectories
 Source: Raska; Based on Mahnken (1999); Farrel, Terriff (2002); Ross (2010).

development of a formal transformation strategy, establishment of innovative military units, new branches and career paths; and field-training exercises that include new doctrines, organizations, or technology.¹⁸

The pace, magnitude, and direction of RMA diffusion is shaped by the character of strategic drivers, opportunities and threats, that provide motives and triggers to pursue the RMA. These may include structural realist drivers such as the emergence of new strategic and operational challenges, existing security dilemmas and predicaments that may be required to meet new alliance obligations. Economic drivers include the interests of military-industrial complexes that may shape specific defense-industrial innovation processes, as well as defense policies and military practices, to adopt selected RMA concepts and technologies. Technological drivers underscore the comparative advantages of adopting and adapting specific commercial-civilian technologies into military domains. Institutional drivers emphasize the role of bureaucratic interpretations of the RMA as well as norms, forms, and practices pursued abroad. In addition, there are cultural drivers that amplify the role of strategic culture and learning within a broader civil-military relations and its impact on the use of force.

There are a number of constraints, limitations, and barriers that may preclude RMA diffusion at strategic, operational, and tactical levels. For example, defense planners in RMA-oriented states must revise national security strategies, formulate joint and inter-service doctrines, define new terms of reference, and identify potential risks. Simultaneously, they need to synchronize selected RMA concepts and technologies with defense management and planning processes that include various acquisition and procurement programs, training, and exercises. Notwithstanding the range of defense management problems, perhaps the most compelling impediments to an RMA is the broader strategic context of changing global security dynamics and emerging threats. Conflicts in the 21st century are characterized by unconventional, unforeseen, and unpredictable methods of warfare. A number of low-tech and relatively inexpensive asymmetric responses and countermeasures can mitigate advantages of RMA-oriented forces. Non-RMA states or non-state actors may achieve a relatively high level of effectiveness or political leverage by relying on a mix of high-tech and low-cost technologies, limitless asymmetric strategies, and irregular operations that do not restrict the nature of conflict. They may attempt to subvert the technological advantages of RMA-oriented states through prolonged unstructured tactics, seeking to exploit the political and strategic vulnerabilities of their opponent. Similarly, states with outdated conventional armies that can neither finance nor develop modern weapon technologies may opt for asymmetric responses, operational or technical, by pursuing the development and production of WMDs and ballistic missiles.

South Korea's RMA Paths, Patterns, and Drivers

This paper argues that the trajectory of RMA diffusion in South Korea's military modernization over the past two decades shows patterns of speculation and experimentation in terms of concepts, doctrine, and technology; however, with a relatively limited implementation of the use of force. In particular, the South Korean RMA diffusion path proceeded on two parallel, and in many ways overlapping, levels: (1)

external/adaptive, shaped by the changes in South Korea’s threat spectrum as well as shifts in the U.S. defense transformation, (2) internal/emulative, embedded in South Korea’s changing strategic assessments and policy-imperatives to develop self-reliant military capabilities. The external path has shaped the internal path by providing benchmarks for defense planning, interoperability requirements, and training of the ROK military. Selected U.S. RMA-oriented defense transformation concepts such as information superiority, precision-strike, and battlefield situational awareness, network-centric warfare have gradually permeated into ROK-U.S. combined training and operations that have subsequently shaped the character and direction of South Korea’s RMA conceptual drive, organizational reforms, and defense-technology development, acquisition, and procurement.

The compelling and relatively ambitious character of Korean RMA-oriented defense plans have been in sharp contrast to the prevailing structural and political realities coupled with historical legacies that have sustained the relevance of traditional security concepts and operational conduct. Notwithstanding concerted efforts to create a smaller but smarter RMA-oriented “advanced elite force,” the Korean RMA drive has not fully eradicated the power of the old paradigm that has been sustained by the convergence of strategic legacies, economic and budgetary constraints, and political conservatism that has inherently precluded a greater flexibility and adaptability in implementing selected defense reforms. This argument can be seen in the historical trajectory of Korean RMA-oriented military modernization. While by no means complete, the following review sketches South Korea’s RMA patterns, drivers, and constraints in two phases: (1) Initial Exploration and Adoption in the 1990s, (2) Emulation and Adaptation in the 2000s.

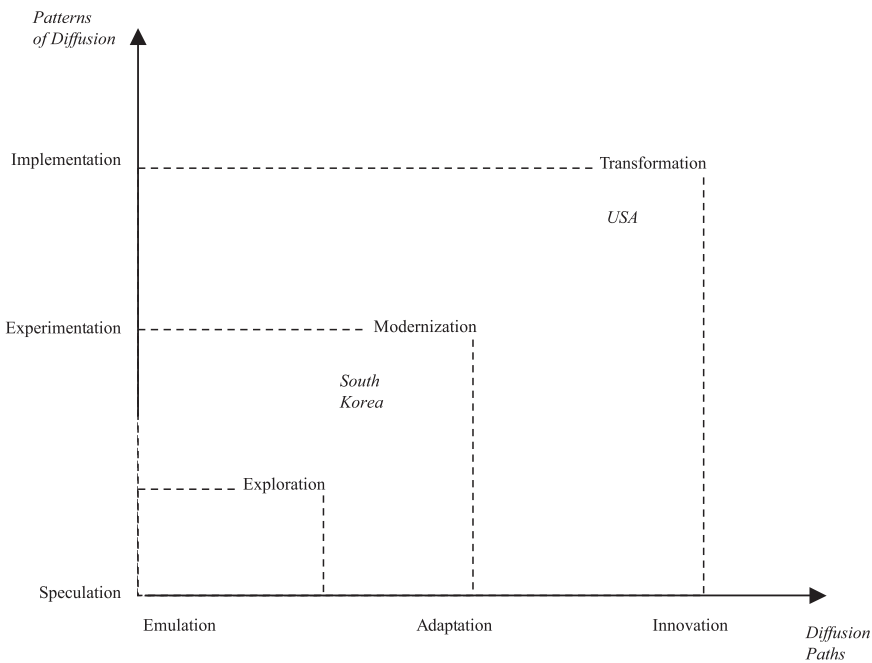


Figure 2. South Korea’s RMA Trajectory

Source: Raska; Based on Mahnken (1999); Farrel, Terriff (2002); Ross (2010).

1990s Speculation and Exploration: Korean "Future Battlefield" Concepts

Since the early-1990s, the ROK Ministry of Defense (MND), ROK Armed Forces, and a small number of Korean/U.S. defense analysts began to conceptualize long-term force modernization visions based on the evolving strategic priorities and increasing scope of defense requirements that have propelled the need for new thinking, innovation, and military reforms beyond traditional defense paradigms.¹⁹ These reports emphasized the need to streamline the ROK's force structure, enhance defense management, and build a more technologically-oriented force to adjust to the changes in the global and regional security environment in the post-Cold War era.²⁰ However, this offered only limited policy choices that have not translated into an adequate momentum that would stimulate the traditional institutional conservatism within the ROK armed forces, as well as a range of political constraints precluding military reforms.²¹

Since the mid-1990s, selected American RMA concepts began to permeate into the Korean theater that have shaped the character and direction of the U.S.-ROK forces.²² The CFC periodically revised its operational concepts in accordance with changes in North Korea's force structure and deployment as well as doctrinal shifts and lessons learned in the U.S. military. Internal CFC publications such as *The Deep Operations Primer-Korea*²³; *Air Ground Operations-Korea*²⁴; *Joint/Combined Fires-Korea* have emulated selected U.S. information-superiority, network-centric, and precision-fire concepts (i.e. "Deep Battle," "Joint Fires," "Network-Centric Warfare"), which were adapted to the Korean peninsula.²⁵ In the late 1990s, the Korean theater served as an important testing ground for experimenting with RMA-oriented activities. The various U.S. inter-service components (Army, Air Force, Navy, and Marines) experimented with new systems, technologies, and concepts in accordance with the Joint Vision 2010 they use Korea as one of the key simulation environments for modeling, war gaming, joint experimentation, and fleet battle experiments.²⁶

With the accelerating RMA drive in the U.S. military, the ROK political and military echelons began to explore the changes in the dynamics of modern warfare, the implications of the RMA, and devise new strategies for comprehensive defense reforms. In April 1998, the ROK MND created the *National Defense Reform Committee* (NDRC) tasked to rethink nearly every aspect of the Korean defense establishment that included force structure, defense management, operational concepts and strategic culture.²⁷ The NDRC aimed to provide a comprehensive strategic blueprint to transform the ROK military into a high-technology defense force that would be capable to leverage selected RMA technologies and maximize integrated military power against a range of threats with efficient use of limited defense resources.²⁸

In April 1999, the NDRC set up the *Revolution in Military Affairs Planning Group* (RMAPG) to oversee short, mid, and long term defense reforms in accordance with global and regional security dynamics and military modernization trends that would provide specific recommendations.²⁹ Finnegan and Kim argue that the RMAPG, with its comprehensive, long-term focus, "signaled an earnest effort to truly transform the [Korean] defense establishment."³⁰ The three-year charter focused on (1) Conceptualize the long-term future security environment 20 to 30 years in advance that would include the formation of baseline assumptions for Korean unification scenarios, (2) Define the conceptual foundation for a Korean RMA, (3) Provide recommenda-

tions and developing action plans for its implementation, (4) Institutionalize changes by updating policies and plans.³¹

The group included selected officers from each ROK military service, tasked to benchmark service-specific RMA force modernization programs, capabilities, and operational concepts of advanced militaries that would be relevant for adoption by the ROK military.³² While many of the recommendations by the group and actual findings remained classified, its main ideas permeated into selected MND publications that include the 2000 *Defense White Paper*, which provided a snapshot of the Korean RMA-oriented vision at that time.³³ In order to prepare for unspecified future threats, the RMAPG recommended that the ROK military should build a slimmed-down core force with advanced and adaptable “*omni-directional*” military capabilities to transform the ROK forces into a viable “*combat-capable force*” able to meet a spectrum of military threats from North Korea, as well as a range of uncertain and ambiguous threats beyond the Korean peninsula. This would mean developing elite, *digitized* armed forces, equipped with selected high-tech weapons systems and platforms that would be able to maximize integrated military power. At the same time, the ROK military should become a *rationalized* force with advanced defense management capacity to maximize savings and efficiency in weapons procurement, R&D, testing and evaluation, and acquisition systems and processes.

Parallel to the MND-driven initiatives, the specific ROK military services (ROK Air Force, Army, and Navy) also began conceptualizing their long-term strategic blueprints, developing visions of the future battlefield and potential future defense strategies with a time span up to 2025.³⁴ Among the ROK military services, the ROKAF has arguably been the most forward-looking service in promoting the Korean RMA drive, benchmarking, adopting and adapting selected U.S. information superiority, network-centric, and precision-strike concepts while enhancing its airpower modernization drive. In 1998, the ROKAF pioneered the process with the publication of the *Air Force Vision 2030 (Daehankongkun)* that called for attaining advanced Korean aerospace capabilities in two phases: (I) evolutionary design up to the year 2015, and (II) revolutionary design up to the year 2025.³⁵ The *AFV 2030* envisioned a fundamental paradigm shift in the ROK military: from a land-based force to an air power and naval centered force, from a functional force toward a mission-based force, and from a service-based to force-based defense planning.³⁶

The various service-specific Korean RMA concepts and visions of the 1990s represented an early phase of speculation, exploration, and experimentation with selected RMA concepts. In the process, South Korean defense planners assessed key issues, areas, and implications of modern warfare, particularly studying the evolving American RMA, and adapting selected concepts into their long-term defense plans and force improvement programs. The conceptual emphasis on attaining an “*omni-directional, advanced force*” became the cornerstone of the Korean RMA drive. While the concept did not represent a unique theoretical or conceptual innovation with regard to the RMA, it stimulated a broader national security debate on the current status and potential future direction of the ROK forces as well as the ROK-U.S. alliance. Proponents of the Korean RMA emphasized the need to move beyond traditional threat-based defense planning in order to attain comprehensive self-reliant defense capabilities vis-à-vis North Korea as well as undefined future threats; specifically, RMA proponents pointed to the outdated force structure of South Korea that is dominated by conventional ground forces.³⁷

Notwithstanding the increasing awareness and acknowledgment of the RMA, the ROK defense establishment continued to face structural, political, and budgetary constraints coupled with inter-service rivalries that precluded significant shifts in the military force structure, resource allocation, training, and operational conduct. The early Korean RMA visions and concepts of the 1990s have not translated into a disruptive paradigm shift; rather they reflected an incremental process of adaptation to new strategic realities.

2000s U.S. Defense Transformation & South Korea's Adaptation

After 9/11, the United States and South Korea embarked on a process of adapting the alliance to the changes in the U.S. global defense posture that led to a reconfiguration of the roles, missions, and existing command structures.³⁸ In this context, the largely techno-oriented RMA conceptualization in the U.S. military morphed into a much broader process of defense transformation that aspired beyond changes in operational concepts, force structures, and equipment. The George W. Bush administration increasingly realized that while the emergence of advanced RMA-oriented technologies may enable a defense transformation processes, the progressive complexity and new set of global security challenges make transformation necessary.³⁹ The U.S. defense transformation became a ubiquitous and comprehensive enterprise propelling changes in America's defense management and use of force. Strategic and operational flexibility, agility, and lethality coupled with enhanced expeditionary capabilities and the development of a new generation of weapons technologies underscored the various transformation imperatives.

The ensuing shifts in direction and character of defense transformation in the early 2000s had a significant global impact on U.S. allies and coalition partners that included the ROK-U.S. alliance. The U.S. defense transformation stipulated the need for the realignment of U.S. Forces deployed in Korea that would be gradually reconfigured toward supporting regional or even global missions rather than addressing a traditional static peninsular defense.⁴⁰ At the Korea-U.S. Security Consultative Meeting in 2002, Washington and Seoul launched the "Future of the ROK-U.S. Alliance Policy Initiative" (FOTA) in order to devise a mutually acceptable plan to reassign existing missions, command structures. During the ensuing FOTA talks in 2004 and 2005, the United States and South Korea agreed to transform the U.S. strategic presence and operational conduct in Korea.⁴¹ This unprecedented reshaping of the ROK-U.S. alliance generated significant political debate between its proponents and objectors in Korea, particularly with regard to the implications and operational effects on South Korea's deterrence capabilities. The debate created uncertainties and concerns within the South Korean military establishment on the potentially increasing technological, organizational, and conceptual interoperability gaps between the U.S. and ROK militaries. Under the revamped alliance system, the ROK forces would be required to increase qualitative combat capabilities that would entail greater autonomy and responsibility in national defense as well as provide operational support to increasingly RMA-oriented U.S. forces.

The strategic uncertainties in the ROK-U.S. security debates propelled shifts in South Korea's defense policies. Under the Roh Moo-hyun administration, South Korea's defense policy focused on "co-operative self-reliant defense" a long-antici-

pated goal of South Korea's defense policy dating back to the early 1970s.⁴² The policy emphasized the need for "the simultaneous development of the U.S.-ROK alliance, but more importantly, a self-reliant national defense...[when] South Korea will be equipped with capabilities and systems to play a leading role in repulsing any potential provocation."⁴³ While the strategic bedrock of South Korea's security would remain anchored in the U.S.-ROK alliance, South Korea would mitigate its dependence on the United States by gradually developing advanced military capabilities. With enhanced self-reliance, ROK defense planners envisioned a long-term "sufficient defense" that would have an independent capability to deter any existing threats from North Korea while preparing for unspecified future threats.⁴⁴ Under-scoring the policy became the vision of transforming the ROK military into a smaller, increasingly networked, balanced, and digitized standing force with independent surveillance and reconnaissance platforms, real-time integrated C4I systems covering a variety of tactical, operational and strategic echelons, and long-range precision strike capabilities.⁴⁵

Subsequently, the *Mid-Term Force Improvement Plan 2003–2007*, updated in April 2002, revived the "Advanced Elite Defense" concept of a 21st century combat force based on the twin pillars of "Information Dominance" and "Omni-Directional Defense" capable to meet a range of current uncertain as well as future-oriented threats. In contrast to the ongoing debates in South Korea's political spectrum regarding the credibility of North Korean threats mitigated by the accelerated engagement of the Roh Moo-hyun administration with Pyongyang, the report clearly identified North Korea as the principal military threat with no change in the KPA's military configuration. It also stated that the ROK is moving to an era of an "uncertain security environment" marked by the "coexistence of South-North cooperation and simultaneous military confrontation." ROK forces should acquire and field, "high-performance weapon systems at a reasonable cost within the requested time frame; and obtain R&D capabilities for certain key weapon systems and thus realizing a revolution in military affairs (RMA) pertaining to defense technology."⁴⁶

While previous South Korean force modernization plans reflected rather an evolutionary and "largely reactive adaptation to the changing security environment as well as shifts in the ROK-U.S. alliance"⁴⁷ the *Defense Reform Plan 2020* (DRP 2020) has been conceptualized in a highly ambitious scope in terms of its aim, content, time span, and required budget.⁴⁸ The original plan, drafted by the *Committee on Defense Reform* under former Defense Minister Yoon Kwang-ung, was published in September 2005 and later modified in 2008, 2009, and 2010. The plan was influenced by the French military modernization initiatives that were perceived as the most relevant and optimal for the South Korean case and aimed to transform South Korea's military forces from a manpower-intensive force to a capability-based RMA oriented future force.⁴⁹ The plan assumed that North Korean threats would inherently diminish by 2020, while potential intra-regional threats coupled with East Asian force modernization drives may create greater security challenges for South Korea. The plan also considered South Korea's declining birthrate that would provide insufficient numbers of conscripts to sustain the current force size by the year 2020. Accordingly, the original DRP 2020 plan envisioned a gradual three-phased reduction in the quantity of South Korean military manpower by 27 percent from 690,000 soldiers to 500,000 soldiers by the year 2020.⁵⁰

The DRP 2020 also proposed a long-debated reorganization of the command struc-

ture: the 1st ROK Army and the 3rd ROK Army would merge under a new Ground Operations Command (GOC), while the 2nd ROK Army would be transformed into a new Rear Area Operations Command. In addition, the DRP 2020 suggested the creation of a new Missile Command to address the threats posed by North Korean long-range artillery and ballistic missiles. The ROK Air Force and Navy would also streamline their command systems from the existing four layers of command to three. Existing ROK Army infantry formations would be converted into mechanized forces with significantly enhanced mobility and firepower, improved tactical C3I, and transforming traditional division structures into more flexible division and brigade task forces with combined and joint capabilities for a rapid crisis-response.⁵¹

South Korea's forces would significantly enhance their military capabilities, expanding the scope and reach of their operational horizons.⁵² About one-third to one-half of existing but largely outdated major weapon systems would be effectively replaced with next-generation weapons platforms, systems, and technologies in order to counter a wide range of threats as well as to match capabilities of regional neighbors.⁵³ Key force modernization programs included the development, procurement, and integration of next-generation tanks (K-1A1, K2), multirole fighter aircrafts (F15Ks), multirole helicopters (KMH), submarines, destroyer experimental vessels (KDX), surface-to-air missiles (SAM-X), early warning systems (EX), independent precision-strike assets, and the integration of digital C4ISR infrastructure (DDN).⁵⁴ Many platforms as well as their components and sub-systems would be based on Korea's indigenous R&D defense industrial base, with foreign sources associated with the supply of major items and leading-edge technologies.⁵⁵ In order to accelerate the force development, South Korea's defense budget would increase by 11.1 percent annually through 2015, and 7.1 percent through 2020, totaling about 621 trillion won (US\$ 431 billion at 2008 monetary rates) between 2006 and 2020. This would include 272 trillion won for force investment (about 40 times the 2005 force investment budget) and 349 trillion won for personnel and operations.⁵⁶

With its ambitious scope, required timeline, and relatively high costs, the DRP 2020 stimulated internal policy debates on the feasibility, affordability, pace, direction, character, and implementation of South Korea's defense transformation. The debate centered on the five key enduring challenges to South Korea's defense planning and management: (1) How to balance and prioritize South Korea's current operational requirements vis-à-vis North Korea with future-oriented and relatively uncertain regional threats, (2) How to ensure budgetary support and sustain projected increase in defense resource allocation required for implementing the defense reform, and subsequently, (3) How to streamline and reduce the ROK force structure without mitigating its capabilities, (4) How and when to transfer current wartime operational control (OPCON) from the U.S. forces to South Korea, and ultimately, (5) How to shape the future strategic template of the U.S.-ROK alliance.

These questions have stimulated continuing political debates, amplified by unexpected developments that led to adjustments, revisions, and delays in the original DRP 2020. The DRP 2020 underwent three major revisions in 2008, 2009, and 2010 with the Lee Myung-bak administration shifting South Korea's military modernization priorities from the previous long-term oriented air and naval build-up aimed at potential regional threats, to capabilities countering specific North Korean conventional and asymmetric threats; particularly, after the 2006 North Korean nuclear test. On November 24, 2008, the ROK MND presented a draft revision of the defense

reform, stating that “[the ROK] military will readjust its arms acquisition and restricting schemes to properly deal with an imminent threat, namely North Korea.”⁵⁷ The decision was also influenced by the impact of the 2008 Asian financial crisis and subsequent economic downturn that proved baseline defense spending assumptions for DRP 2020 as unrealistic.⁵⁸ The revised draft downsized selected procurement programs such as the K2 main battle tanks, readjusted the timeline and size of troop reductions, placed an emphasis on gradual and balanced defense spending, and focused on North Korea’s nuclear and missile threats. These modifications were formalized in the 2009 official revision, presented on June 26 by Defense Minister Lee Sang-hee. Under the modified plan, South Korean military would shift the emphasis toward capabilities in four key areas: (1) surveillance and reconnaissance (2) precision strike (3) interception and (4) force protection that would enable pre-emptive precision-strike capabilities vis-à-vis North Korean nuclear and missiles sites.⁵⁹

In 2010, two unprecedented incidents further reshaped the character and direction of South Korea’s DRP 2020. The first was the deliberate sinking of the 1,200 ton South Korean corvette *Cheonan* in the Yellow Sea near the disputed Northern Limit Line (NLL) on March 26 by a torpedo attack originating from a North Korean submarine. The incident raised new questions about South Korea’s combat readiness, particularly regarding its naval combat capabilities in anti-submarine command, control, and communications warfare. The attack caught the ROK Navy by surprise; the anti-submarine detection systems (sonar and early-warning systems) coupled with existing operational concepts proved ineffective in spotting a North Korean submarine operating in shallow waters. More importantly, the ROK Joint Chiefs of Staff were criticized for their relatively slow and uncoordinated response to the attack. After the attack, on May 4, President Lee Myung-bak announced a military-wide review of the ROK’s defense posture.

The second major incident pointing to the ROK’s lack of military readiness was North Korea’s coordinated dual artillery/rocket attack on South Korea’s Yeonpyeong Island on November 23, 2010. North Korea fired about 170 artillery shells toward the island in one of the most serious confrontations since the end of the Korean War. The return fire from ROK Army units on the island was directed at North’s coastal artillery bases at Mudo that targeted command posts and barracks, rather than the actual sites of mobile rocket launchers.⁶⁰ The lack of early-warning and command-and-control system capabilities coupled with North Korea’s actions, including the testing of a long-range missile in April 2009 and second nuclear test in May 2009, eventually prompted South Korea to request postponement of the planned transfer of the Operational Control (OPCON) to Seoul until December 2015.

The decision to delay the OPCON transfer subsequently led to the concept of “*Strategic Alliance 2015*” (SA2015), a short-term five-year ROK-U.S. roadmap that would “enable better synchronization of the alliance transformation efforts.”⁶¹ The SA2015 reiterated the need to address existing operational deficiencies, update war-fighting concepts, adjust weapons procurement and training to maximize the operational effectiveness of the ROK-U.S. alliance and prepare for a wider range of contingencies. In 2011, South Korea launched a new force modernization *Defense Reform 307 Plan*, primarily addressing medium-to-long term defense requirements to counter potential North Korean provocations and attacks similar to the sinking of the *Cheonan* and artillery attack on Yeonpyeong Island. Based on available reports, the “307 Plan” is based on recommendations of the 2010 National Security Review, and

includes provisions to enhance ISR capabilities, ballistic missile defenses, extending training, and streamline command and control.⁶²

Conclusion: Theoretical and Policy Implications

Since the early 1990s, South Korea's security dilemmas have become progressively more complex. In addition to conventional threats, South Korea has increasingly faced a hybrid conflict spectrum of the amalgamation of asymmetric, low-intensity and non-linear security challenges. The difficulties in ascertaining North Korea's intentions and politico-military strategies have amplified security uncertainties and risks of potential miscalculations and superpower involvement. Amid the transformation in the nature and character of North Korean security challenges, South Korean defense planners have been increasingly constrained by the risks and costs of potential confrontations, spillovers, or crises. The complex security dynamics on the Korean peninsula have arguably decreased the effectiveness of South Korea's traditional deterrence and defense strategies. With the changing strategic realities, the ROK military has pursued RMA-oriented comprehensive force modernization in order to acquire advanced military capabilities to counter the widening spectrum of threats, mitigate technological and interoperability gaps with U.S. forces, and eventually attain a self-reliant defense posture.

From the mid-1990s onwards, the ROK military began to acknowledge changes in the dynamics of modern warfare and study the evolving RMA debate so as to enable the formulation of strategies and concepts for comprehensive defense reforms. In the process, however, one could argue that there has not been a distinct Korean RMA-oriented conceptual innovation toward a new theory of war. Nor has the Korean RMA trajectory reflected a disruptive paradigm shift in warfare. South Korea's military modernization over the past two decades reflected patterns of RMA-oriented speculation and experimentation in an adaptive/emulative path shaped primarily by the interoperability needs with the evolving U.S. defense transformation. However, notwithstanding the military-to-military contacts and joint military training with the United States, South Korea's military has faced a range of constraints in translating or leveraging its RMA concepts in its use of force. Theoretically, this is puzzling as spatial theories of diffusion processes predict that military innovation will proceed rapidly among geographically, culturally, and politically proximate states or states with an established sense of regional identification created by similar political traditions, structures, or alliances.⁶³

From a policy-oriented perspective, the South Korean case shows that enhanced military effectiveness cannot be achieved by simply buying new hardware.⁶⁴ Technological innovation is a necessary, but insufficient condition for the pursuit of RMA-oriented defense transformation, military modernization, or innovation. As Adamsky noted, "RMAs are driven by more than breakthroughs in technology, which in themselves do not guarantee successful innovation."⁶⁵ If South Korean national security planners are to make appropriate strategic decisions, they need to understand the limitations in integrating selected RMA-related technologies into existing force structures and operational concepts. This is because "RMAs involve putting together the complex pieces of tactical, societal, political, organizational, or even technological changes in new conceptual approaches to war."⁶⁶ Its outcome depends on a number

of variables that include the ability of the state to recognize, anticipate, exploit, and sustain a comprehensive RMA-oriented military innovation coupled with organizational adaptation at virtually all levels.

Ultimately, the future of South Korea's RMA drive will be shaped by regional strategic developments, Korean unification paths, as well as the future direction and character of the U.S.-ROK alliance. Assuming the strategic imperative and the long-term continuity of the Alliance, both the U.S. and ROK forces must continue to focus their efforts on the synchronization of joint operational concepts, doctrines and training programs, which would amplify the advantages of allied interoperability. In this context, South Korea should create a reverse asymmetry in the operational conduct of the alliance by addressing organizational, structural and operational deficiencies and pursuing persisting military-technological innovation propelled by operational experience. In time, constant multiple adaptations may lead to military innovation.

Notes

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