

Power Dynamics of Weapons of Mass Destruction on the Korean Peninsula

Problems and Remedies

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Introduction

A decade after the Cold War ended, the world still seems to be in a transitional period. It is a dynamic time with drastic changes. There are opportunities that can consolidate sustained peace and future stability. There are also risks that could generate new instabilities and even conflicts in a fast-changing world. Northeast Asia, and the Korean peninsula in particular, is perhaps the best place to illustrate the uncertain situation.

Unlike some other regions of the world, Weapons of Mass Destruction (WMD) have been a central element in Northeast Asia.¹ Despite the reduced danger of a major nuclear exchange among the major powers, the proliferation of mass destructive warheads and their delivery systems is emerging as a new source of insecurity for almost all countries concerned. In particular, the Democratic People's Republic of Korea (DPRK: North Korea) has allocated a tremendous amount of resources over the past decades to develop WMD. This has consequently altered the delicate security balance on the Korean peninsula as well as all of Northeast Asia. How to address the issue best has become a common priority on the regional agenda.

How Does North Korea Develop Weapons of Mass Destruction?

Nuclear Development

North Korea has pursued a nuclear capability since the 1950s, when

it began to receive technological support from the former Soviet Union. In the mid-1960s, North Korea established a large-scale atomic energy research complex in Yongbyon, staffed with trained specialists who had studied in the Soviet Union. Under a cooperative agreement with the Soviet Union, North Korea launched its ambitious nuclear weapon program by assembling a Soviet IRT-2M research reactor in 1965. Throughout the 1960s, North Korea focused on modernizing Soviet reactors on the one hand, and building a new gas-graphite reactor to separate and produce plutonium on the other.²

In the 1970s, North Korea concentrated its nuclear research on the nuclear fuel cycle-refining, conversion, and processing technologies. It successfully increased the power generation capacity of the research atomic reactor through its own technology, and in 1980 started the construction of a 5MW-level research reactor.

In the 1980s, the North focused on the practical uses of atomic energy and completed the nuclear research and development infrastructure by 1986. Subsequently, it began to operate uranium refining and conversion facilities. In 1989, Pyongyang embarked on the construction of a 200MW-atomic energy power plant and large reprocessing facilities in Taechon and Yongbyon. Additionally, the North conducted detonations to test triggering devices with high explosives.

It is estimated that by the early 1990s, North Korea completed the entire nuclear fuel cycle from the acquisition of nuclear fuel to its reprocessing. Due to difficulties in developing detonation devices and delivery systems that require advanced precision technologies, it is uncertain whether Pyongyang has actually finished production or now possesses usable nuclear weapons. However, considering its capability to extract plutonium from used nuclear fuel, North Korea is estimated to be capable of assembling and producing one or two crude nuclear weapons.

The next task for North Korea would be to develop nuclear warheads small enough to load on a missile. Specific missile technologies for the North to focus on are: technology for stabilization of the inertial navigation system; technology for automatic adjustment of warhead weight; and technology related to fuel injection and combustion systems.³

Chemical and Biological Weapons

North Korean chemical weapons present a major challenge because a few can be assembled with widely available chemical agents and commercial equipment. Easily produced and potentially very destructive, they have been called "the poor man's atomic bomb."⁴

North Korea's chemical warfare capabilities include the ability to produce bulk quantities of nerve, blister, choking, and blood agents, using its sizeable, although aging, chemical industry.

Some chemical agents like tear gas are commonly used in riot-control, but those used in chemical warfare are more nefarious, attacking the body's nervous system, blood, skin, or lungs. North Korea long ago recognized the importance of chemical warfare and issued a "Declaration for Chemicalization" at the end of 1961. North Korea has since begun to build research and production facilities in a sustained and concerted effort to produce chemical weapons.

Eight different factories in North Korea have produced lethal chemicals, such as nerve, blister, blood, and vomiting agents, as well as tear gas, and at present they are stored in six different facilities.⁵ Their quantity is estimated to be around 2,500-5,000 tons, which could be employed should there be renewed fighting on the Korean peninsula.⁶

The North is also suspected of maintaining numerous facilities for cultivating and producing the anthrax bacteria and other forms of biological weapons.⁷ In the 1980s, the military turned to the development of biological weapons according to Kim Il-Sung's directive that "poisonous gas and bacteria can be used effectively in war."⁸

Biological agents consist of living organisms (bacteria and fungi) and viruses, as well as the toxins derived from them, that cause disease and death to humans, livestock, or agricultural crops. Biological weapons have perhaps acquired a more sinister reputation than chemical weapons due to their potential to produce frightening effects on the cheap.⁹

In addition, the North possesses various vehicles and equipment for launching chemical munitions. These include not only ballistic missiles, but also artillery and aircraft and possibly unconventional means. In fact, it is believed that North Korea has some long-range artillery deployed along the demilitarized zone (DMZ) and ballistic missiles, some of which could deliver chemical warfare agents against forward-based forces, as well as against rear-area targets. The North may also dare to launch a secret attack in the rear through its Special Operation Forces armed with biological weapons.

North Korean forces are prepared to operate in a contaminated environment; they train regularly in chemical defense operations and are taught that South Korean and U.S. forces will employ chemical munitions. To enhance its nuclear, biological and chemical (NBC) operations, the North Korean military has organic chemical platoons down to the regimental level. Furthermore, North Korea has provided

protective masks to the entire population. Not only military personnel but para-military personnel and civilians must participate in regular NBC defense drills.

North Korea has not signed the Chemical Weapons Convention (CWC), nor is it expected to do so in the near future.¹⁰ North Korea will attempt to maintain its chemical and biological weapon production capabilities despite its serious economic difficulties and the global pressure to ban chemical and biological weapons. North Korea will continue this policy because these weapons can be produced at a low cost. They are effective, and it is relatively easy to destroy the evidence of such programs.

Mid- and Long-range Missiles

During the last several years, North Korea has made substantial progress with its ballistic missile forces in the areas of research and development, testing, deployment, and exports. Despite the efforts of the U.S. and its allies to constrain North Korea's missile development, Pyongyang continues to move ahead. The North Korean missile development program can be divided into four distinguishable phases.¹¹ In the first phase, North Korea imported manufactured missiles and technologies from China and the Soviet Union for indigenous development of a missile program through reverse engineering. Pyongyang received Frog-7s and 60km range Frog-5 tactical rockets from the Soviet Union in 1969. The Soviets also furnished high-explosive shell warheads with rockets. From this beginning, North Korea developed its own chemical projectile warheads for the Frog-5 and Frog-7A.

Reportedly, Scud-B missiles were received from Egypt in mid-1976, in return for North Korean assistance to Egypt during the Yom Kippur War.¹² North Korea is now thought to be producing Scuds indigenously and to have exported their own versions to Iran during the Gulf War. North Korea also provided some assistance to Egypt with its indigenous production of a Scud clone. Chemical and biological warhead development is also being pursued in the Scud-B missile production program. The North Korean arsenal is believed to have at least 12-15 Scud launchers.

During the second phase, North Korea was mostly concerned with the modification of the Scud missile. A program to modify the Scud-B (300 km/1,000 kg) was known to have begun in 1988. The modified missile was referred to as the Scud-PIP (product improvement program), or Scud-C (500 km/700-800 kg). It achieved longer ranges than its predecessors due to a reduced payload and an extended length of the rocket body. Production of the Scud-C was estimated at four to

eight per month.

Reportedly, Pyongyang has hundreds of Scuds in its inventory, and they are available for use by its missile forces or for export. In 1990, Iran was reported to have arranged for a delivery of Scud-Cs, as well as North Korean assistance in setting up an assembly and manufacturing facility. Syria also has received shipments of the Scud-C along with launchers beginning in April 1991.¹³

In the third phase, North Korea poured its energy in the extensive redesigning of Scud technology. The new missile named Nodong-1 or Scud-D is thought to have a potential range/payload capability of 1,000-1,350 km / 800-1,200 kg. The higher range would cover a wide swath of cities from Tokyo to Taipei.¹⁴ The Nodong-1 represents a significant departure from the prior North Korean practice of incremental improvements on the basic single-engine Scud design, and this departure is reflected in the protracted development history of the system.¹⁵ The closely related Iranian Shahab-3 and the Pakistani Ghauri-2 reflect this design. A prototype was detected on a launch pad in May 1990, but test flights did not begin until May 1993, with an apparently successful launch of 500 km into the Sea of Japan. The operational status of the Nodong-1 design remains unclear, but the Rumsfeld Report (1998) concluded that "the Nodong was operationally deployed long before the U.S. Government recognized that fact. There is ample evidence that North Korea has created a sizable missile production infrastructure, and therefore it is highly likely that considerable numbers of Nodongs have been produced and deployed."¹⁶ According to the ROK's *Defense White Paper 1998*, North Korean Scud and Nodong-1 missiles are already in service and deployed near the Demilitarized Zone. South Korean government officials have announced that North Korea is also operating four Nodong missile brigades of nine launchers each.¹⁷

In the fourth phase, North Korea test fired a Taepodong-1 (Nodong-2 or Scud Mod E, and Scud X) on August 31, 1998. The Taepodong-1 is said to be a two-stage missile with an estimated range of 2,200-2,672 km and a payload of an estimated 700-1,000 kg.¹⁸ This vehicle apparently consists of a Nodong-1 as its first stage and a second stage based on the North Korean Scud-C missile. Currently, North Korea is developing the Taepodong-2, which could deliver a several-hundred kilogram payload to Alaska or Hawaii and a lighter payload to the western half of the U.S. North Korea is much more likely to weaponize the more capable Taepodong-2 than the Taepodong-1.

Since 1996, the U.S. and North Korea have proceeded with missile talks concerning North Korean participation in the Missile Technology Control Regime (MTCR). During the talks, the U.S. has pressured the

North to suspend its production and export of missiles. The talks, however, still have not produced any significant results. After the Taepodong missile incident in August 1998, the two renewed efforts to seek comprehensive compromises. During the top-level talks with the United States on September 24, 1999, North Korea's Ministry of Foreign Affairs agreed to a moratorium on its missile test firing. A year later, the First Vice Chairman of the National Defense Committee, Cho Myung-rok, reconfirmed the announcement in the "US-North Korea Joint Communiqué" issued at the end of the talks held on October 12, 2000, in Washington D.C.¹⁹ In May 2001, after his visit to Pyongyang, the Swedish Prime Minister Persson said that North Korea seemed to have an intention to extend the moratorium on halting missile tests until 2003. However, North Korea didn't miss the warning that it would take strong countermeasure if the U.S. tries to build an anti-missile shield program. North Korea also warned that South Korea would be doomed to "ruin and death" if it participates in the U.S. program.²⁰

North Korean WMD Strategy

The reasons for producing and possessing mass destructive warheads and mid- and long-range missiles are simple. They provide the means for North Korea to respond to the expanding military influence of South Korea, the U.S., and Japan and use them as bargaining chips at negotiation tables. WMD is a diplomatic tool for regime survival, while posing a military threat to other countries. Above all, these weapons can also perform decisive tactical and operational roles during a contingency. By using these weapons to attack the South's major cities and other strategic targets, the North will attempt to realize its military blitzkrieg strategy.

North Korea's WMD strategy is closely linked to its offensive war strategy, which consists of three phases. The objective of the first phase will be to breach the defenses along the DMZ and destroy the forward deployed forces. The objective of the second phase will be to isolate Seoul and consolidate gains. The objective of the third phase will be to pursue and destroy remaining forces and occupy the remainder of the peninsula. As the attack against the forward defenses along the DMZ begins, the North Korean forces will probably initiate SCUD and FROG missile attacks with high explosives and possibly nonpersistent chemical warheads against airfields, lines of communications, and logistics facilities.²¹

Reflecting Soviet military doctrine, North Korea has traditionally viewed chemical weapons as an integral part of any military offensive. There are no indications that this view has altered since the end of the Cold War. North Korean chemical weapons would complement conventional military power. In a surprise attack, North Korean forces

are expected to use chemical weapons to demoralize defending forces, reduce their effectiveness, and deny use of mobilization centers, storage areas, and military bases without physically destroying facilities and equipment. Nonpersistent chemical agents could be used to break through defensive lines or to hinder a CFC counterattack. Persistent chemical agents could be used against fixed targets in rear areas, including command and control elements, major LOCs, logistic depots, air bases, and ports.

It is likely that chemical weapons would be used early in the conflict rather than be held in strategic reserve. Virtually every stage of South Korean and U.S. military operations, including mobilization, deployment, and staging, would be made more complicated in a chemical environment. Thus, as far as North Korea is concerned, chemical weapons may be a weapon of first resort rather than last.

The introduction of chemical weapons in a conflict would have profound political consequences, potentially increasing the likelihood of a nuclear response. Admittedly, U.S. nuclear weapons might play only a limited role in deterring North Korean chemical weapons use against military targets in the South. While a nuclear response may be seen as credible in retaliation for use of nuclear or biological weapons against urban populations, such a response could be seen as disproportionate in the event of nuclear retaliation for battlefield chemical use. However, South Korea is so congested that chemical attacks against strategic nodes such as ports and airfields would be virtually indistinguishable from intentional attacks against population centers.

Essentially nothing is directly known about the North Korean nuclear strategy, doctrine, or war plans, except that North Korea's collaborations with Soviet and Chinese military and nuclear programs probably influenced Pyongyang's approach toward nuclear weapons development and policy. It is also quite certain that North Korea has closely studied the U.S. nuclear doctrine.

In the face of a credible threat to use nuclear weapons, the United States and its coalition partners could be forced to change the way the U.S. would conduct operations. North Korea may see the threat to use nuclear weapons against U.S. coalition partners or allies as a powerful tool in undermining U.S. options for coalition warfare, or in seeking through coercion to undermine U.S. basing or other support for operations. North Korea must also perceive that it would gain enormous value from threatening Japan in order to deny the United States access to key ports and airfields in that country.

Nuclear weapons could also deter the United States from launching a counter-offensive into North Korea. If one accepts the view that the

North Koreans are indeed worried about U.S. or ROK aggression that precipitates a war, then North Korean WMD may have a defensive, as well as offensive, character.

In addition to the military value of WMD, North Korea apparently views the development and possession of WMD to provide short- and long-term economic benefits. North Korea has produced and sold large numbers of various models of missiles for significant amounts of money to customers like Iran and Pakistan. North Korea has also found development of WMD an effective means of extracting money from the Western nations, notably the United States and Japan.

Fundamentally, however, the North Korean WMD strategy is not simply military or economic; it is also political. North Korea has effectively manipulated American concerns about their nuclear and missile programs as a means of advancing their broader agenda. The North Koreans have been remarkably clear in their demands, and when the West has done a poor job of listening, manipulation of the status of their nuclear or missile programs has served as an effective attention-getter.

What are the Problems of North Korean WMD?

Nuclear Weapon Proliferations

There has been a considerable effort to curb the North Korean nuclear program. North and South Korea signed the "Joint Declaration on the Denuclearization of the Korean Peninsula" in 1992. This declaration stated that the two sides "shall not test, manufacture, produce, receive, possess, store, deploy, or use nuclear weapons," and they "shall not possess nuclear reprocessing and uranium enrichment facilities." North Korea also signed a nuclear safeguard agreement with the International Atomic Energy Agency (IAEA) to allow inspections. This activity stalled when the North refused to allow special inspections of two unreported facilities in January 1993, however, and subsequently it withdrew from the Nuclear Non-Proliferation Treaty (NPT) in March 1993.

To freeze North Korea's nuclear weapons development program, the United States and North Korea signed the Geneva Agreed Framework in October 1994 after on-and-off bilateral negotiations which altogether had lasted for more than a year and a half. Under the Agreed Framework, the North would freeze and eventually dismantle its existing suspected nuclear programs, including the 50MW and 200MW graphite-moderated reactors under construction, as well as its existing 5MW reactor and nuclear fuel reprocessing facilities. In return, the North would be provided with alternative energy, such as two Light-Water (LWR) reactors and 500,000 tons of heavy oil each year

until the completion of the first reactor. The agreement also included gradual improvement of relations between the U.S. and North Korea, and committed North Korea to engage in South-North dialogue. Under the agreement of the Korean Peninsula Energy Development Organization"(KEDO), North Korea went on to sign the Light-Water Reactor Supply Agreement in December 1995. The construction of the reactor is currently under way.

Limited success or ultimate failure in containing or freezing North Korea's nuclear programs are big concerns to South Korea, Japan, and the U.S. Even though the 1994 Agreed Framework has considerably curbed North Korea's development of plutonium-based nuclear weapons, it did not remove all nuclear suspicions. North Korea still has four million tons of high-quality natural uranium deposits. If it successfully develops uranium enrichment technologies, then an unlimited number of nuclear weapons could be built even while North Korea adheres to the 1994 Agreed Framework.

Furthermore, the Agreed Framework had no provision to control plutonium that is presumed to have already been produced. According to U.S. data on North Korea and testimony disclosed by North Korean defectors, Pyongyang has already acquired the technologies for the initial explosive devices necessary to assemble plutonium-based nuclear weapons.²² Estimates of North Korea's accumulated plutonium inventory range from a minimum of ten kilograms to a maximum of eighty kilograms. According to analyses by the ROK-U.S. joint nuclear inspection team—based on U.S. Central Intelligence Agency data—the amount of plutonium North Korea has accumulated was estimated to be about forty kilograms.²³ If North Korea, as is presumed, has the technology to assemble tactical nuclear weapons, then it is quite possible that the North could have up to ten nuclear weapons so far.²⁴

Although it is not clear that current non-nuclear states of Northeast Asia will embark on their own nuclear programs, such a development would have significant repercussions. North Korea already can be considered a "virtual nuclear weapon state" even though it is extremely difficult to verify whether it has succeeded in developing a small number of nuclear warheads. If Pyongyang explicitly or implicitly emphasizes nuclear capabilities as a key element of its military strategy regardless of international pressure, South Korea and Japan could begin to reevaluate their own policies regarding nuclear weapons and delivery vehicles. To date, and into the foreseeable future, however, it is highly unlikely that either Japan or South Korea would begin a concerted nuclear program, particularly since these two states form core security alliances with the U.S. But any widespread proliferation of nuclear technology in the region with advanced delivery systems would, at

minimum, have the following repercussions: (1) it would encumber, if not significantly constrain, U.S. power projection operations including rapid reinforcements in an acute crisis; (2) it would result in increased vulnerability among states that do not have the ability to field such systems; (3) it would weaken U.S. conventional deterrence and defense capabilities; (4) it would increase the cost of mounting conventional operations against states possessing nuclear capabilities; and (5) it would result in increased pressure toward even greater horizontal nuclear weapon proliferation.²⁵

North Korean Missile Threat

The North Korean missile program is widely viewed as a major threat to international security not only because of its inventory of short and long-range missiles which can threaten neighboring countries, but also because of missile sales to countries in conflict-ridden regions such as the Middle East. Concern over the program is a primary rationale for missile defense programs in affected countries. In many ways it epitomizes fears about the proliferation of weapons of mass destruction and their delivery systems. The U.S. and Japan's reiteration of their earlier decision to conduct joint research on a ballistic missile defense system is an illustrative product of this concern.

The North may forego its plan to fire a new missile due to stern opposition from neighboring countries. The evidentiary record suggests, however, that North Korea will not easily abandon its missile program. If it would, why is North Korea pushing for a missile program and hinting about another missile launch in the face of strong pressure from neighboring countries? The program is simply too valuable to North Korea. First of all, the missile program gives prestige. Most analysts believe the Pyongyang regime is counting on the missile program as a last resort to preserve its system, and the North Korean leadership likely believes that a successful missile launch will reinforce North Korean psychological confidence in the regime. It is said that the launch of August 1998 was timed to coincide with the 50th anniversary celebration of North Korea and the promotion of Kim Jong-II as chairman of the National Defense Commission.²⁶ Thus, North Korean Vice Foreign Minister Kim Gye-Kwan, the chief delegate to the Four-way Peace Talks and the Berlin Missile Talk, argued that the missile test is a "sovereign right," and the North would test fire a missile at "anytime if necessary."²⁷

Second, the program gives a significant military capability to a regime that prizes military power above all else. Whether for offensive or deterrent purposes, North Korea wants to demonstrate its capability to strike Japanese and U.S. military facilities in Northeast Asia. If North Korean missiles were tipped with nuclear, biological, or chemical

warheads, they could strike both population centers and sensitive military facilities. Furthermore, the North Korean missile might work to offset the deterioration of the North Korean conventional military forces, which was clearly confirmed by the West Sea Naval engagement in June 1999. With the growing disparity of conventional military forces and the widening gap of military investment between the North and South, Pyongyang might have no choice but to rely on weapons of mass destruction.

Third, the missile program has been North Korea's favorite diplomatic trump card. Pyongyang is attempting to gain leverage in its negotiations with the U.S., and it likely believes that the program is the main reason for the U.S. to negotiate, and that it makes the U.S. more compliant during negotiations. Without the program, North Korea would probably just be ignored. North Korea typically offers to suspend missile tests in return for economic compensation, and has suggested that \$500 million annually would be an appropriate sum. Many critics consequently argue that the North is engaging in brinkmanship or blackmail to gain economic and diplomatic benefit.

Lastly, the missile program is North Korea's most successful economic enterprise. In recent years, North Korea has emerged as an important missile supplier, and commerce has become an increasingly significant motivation for the program. It is selling missiles to Pakistan, Egypt, Iran, and other Middle East countries. This kind of missile trade has increased the tension in South Asia and the Middle East, already characterized by political instability, terrorism, and civil war. In this vein, missile launches are advertising events that demonstrate North Korea's technologies to potential importers. As long as customers are willing to pay for the missile, North Korea has never hesitated in supplying even the most sophisticated version of missiles in its arsenal.²⁵

With North Korea's missile threat as a justification, the Bush Administration declared a new global missile defense (MD) program in May 2001. However, most of the international community is responding nervously to this new defense architecture. In addition to widespread concerns regarding "burden-sharing" costs and the feasibility of striking down missiles from "rogue states" including North Korea, many are also worried about a costly arms race, particularly among the major powers, that could hurt stability.

Despite the prohibitive costs, feasibility questions, and lackluster support both at home and abroad, Washington appears set to push ahead with its missile shield scheme, either through persuasion or coercion. That in turn would exert further pressure on South Korea's already narrow diplomatic maneuvering room as it pursues its own more

compelling agenda to lure a recalcitrant North Korea back to the dialogue table, while enlisting China's active support for reconciliation on the peninsula.

What are the Remedies for North Korean WMD?

Objectively, North Korea's missile threat is less formidable militarily than it is politically. In strictly military terms, its ballistic missiles are not likely to be armed with nuclear weapons, and ballistic missiles themselves are generally ineffective delivery vehicles for releasing biological and chemical agents over wide areas.²⁹ Nonetheless, taking advantage of the secretiveness in its technology, North Korea may threaten to employ its ballistic missiles under the pretence of being armed with BC weapons to intimidate South Korea and Japan.

Besides developing a missile defense shield, there are other means to counter ballistic missiles armed with NBC warheads. The first alternative is to attain an Asian version of the Intermediate-range Nuclear Forces Treaty (INF) and/or to strengthen the existing Missile Technology Control Regime (MTCR). To conclude an INF Treaty-type agreement, however, the countries must perceive that any military advantages from missiles are only temporary and that ownership of the missiles would be unacceptably destabilizing.

It is true that the MTCR has delayed missile development programs in various countries because of the cumulative weight of multilateral and national export controls. Yet, despite such export controls, determined states can build and accumulate indigenous missile technologies in the long run. The burgeoning scientific and technological complex will become immune to MTCR controls. The MTCR can only buy time and is essentially a supply-side approach that consequently suffers from inherent defects; it does not deal with the motivations underlying proliferation. More importantly, the MTCR can do little to roll back existing ballistic missiles.

The second option is diplomacy. In view of the small prospect that arms control measures can eliminate the ballistic missile threat, however, it is very difficult to visualize a diplomatic option that removes ballistic missiles. As illustrated by recent overtures to dissuade North Korea from test firing its ballistic missiles, diplomacy can at most delay and constrain the development and deployment of ballistic missiles.

Preemptive strikes against missile sites and other suspected WMD sites in a severe crisis may be a third option. This measure, however, runs the risk of violating international law. We have to recall the criticism thrown against Israel when it launched an air attack against

Iraq's nuclear facility in 1981. More importantly, if a preemptive strike fails to eradicate an adversary's WMD or missiles entirely, such an action is likely to invite the very response it sought to prevent and, in the worst case, result in an escalation of hostilities.

Relying on U.S. extended deterrence could be the fourth option. During the Cold War, the U.S. provided its allies with convincing deterrence because regional conflicts ran the risk of escalating into a broader U.S.-Soviet armed conflict. However, post-Cold War regional conflicts, even those involving U.S. allies, are now literally regional conflicts for the U.S., and American stakes in such regional conflicts are not necessarily crucial. Additionally, U.S. self-restraint in threatening the use of nuclear weapons as an instrument for deterring regional conflicts, as pronounced in the 1994 "Nuclear Posture Review,"³⁰ may have generated the impression that American retaliatory options are now limited only to conventional weapons. Nevertheless, it is doubtful that a threat of conventional retaliation alone, even that of high-tech conventional weapons, is frightening enough to deter a risk-prone adversary. The costs associated with conventional weapons tend to be perceived as manageable. In addition, emphasizing high-tech conventional weapons capabilities may risk promoting development and production of WMD and their delivery means, including ballistic and cruise missiles. North Korea and China, which obviously lack the financial and technological capacity to counter U.S. high-tech weapons, may well find it advantageous to strengthen their asymmetrical WMD to offset U.S. conventional weapons superiority.

The last, but not the least, option is to reenergize the 1999 Perry Report. William Perry, former Secretary of Defense and Special Advisor to the President and Secretary of State on North Korea, outlined a revised U.S. strategy in his report of October 1999. The Perry Report asserted that the Agreed Framework should continue in order to prevent North Korea from producing a "significant number of nuclear weapons."³¹ It recommended two sets of new U.S.-North Korea negotiations with the objectives of securing (1) "verifiable assurances" that North Korea does not have a secret nuclear weapon program, and (2) "verifiable cessation" of North Korea's missile program. Perry recommended a step-by-step negotiating process. Perry also proposed that, in return for commitments by North Korea on the nuclear and missile issues, the U.S. should normalize diplomatic relations with North Korea, relax economic sanctions against North Korea, and "take other positive steps" to "provide opportunities" for North Korea. Perry stated that such U.S. initiatives should be coordinated with similar actions by Japan and South Korea.

Conclusion

The North Korean WMD program is indeed a vexing problem that has significant ramifications for the regional political order and strategic balance. With a large missile infrastructure, a formidable biochemical arsenal, suspected nuclear weapons, as well as one of the world's most powerful conventional military forces, concerns over the North Korean military threat are likely to remain. It is not certain, however, that we can completely stop the WMD proliferation and use of ballistic missiles. One must remember that the development and possession of WMD is closely related to the development and possession of ballistic missiles. Put another way, the strengthening of efforts to prevent the proliferation of WMD leads to the arrest of the proliferation and use of missiles. This is why the international community must redouble its collective efforts to prevent the proliferation of nuclear, chemical, and biological weapons on the one hand, and ballistic missiles on the other.

The current approach to curb the proliferation of WMD and ballistic missiles is fragmented. Each component of policy—implementing the Agreed Framework, Four-party talks, missile talks, food aid, etc.—operates largely on its own track without any larger strategy or focus that integrates the separate pieces. Absent a comprehensive policy on the part of its competitors, North Korea has held the initiative, with Seoul, Tokyo, and Washington responding when Pyongyang acts as demandeur.

A successful approach to counter North Korean WMD, therefore, must be comprehensive and integrated, and must address the totality of the security threat. The Bush Administration's recent announcement of a willingness to reopen dialogue could signal a comprehensive approach like that suggested in the Perry Report. After a three-month policy review on North Korea, the U.S.-proposed agenda includes an "improved implementation" of the Agreed Framework relating to the North's nuclear activities and "verifiable constraints" on its missile programs.³²

Washington should pursue this policy in the context of a comprehensive approach that encourages progress in inter-Korean reconciliation, peace on the peninsula, a constructive relationship with the U.S., and greater stability in the region. Many Korean observers agree that the time is ripe to resolve North Korean WMD problems through negotiations and to lead the reclusive regime in the North to open itself to the world community. In any event, raising tensions on the Korean peninsula can only prove counterproductive to the interest of most countries in Northeast Asia.

Notes

1. Nuclear weapons, along with chemical and biological weapons, are aptly referred to as weapons of mass destruction (WMD). These weapons are immensely destructive. But they also are, at least in most cases, designed to distribute their effects over large areas, therefore not discriminating between military and non-military targets. Bruce Russett, Harvey Starr, David Kinsella, *World Politics; the Menu for Choices* (Boston and New York : Bedford/St. Martin's, 2000), p. 221.
2. This reactor was called "Experimental Nuclear Plant No. 1," and was estimated to have a capacity of 20-30MWth. David Albright and Holly Higgins, "Looking Back," in David Albright and Kevin O'Neill, eds., *Solving the North Korean Nuclear Puzzle* (Washington, D.C.: Institute for Science and International Security Press, 2000), p. 15.
3. Shin Sung-tack, "Threats of North Korea's Weapons of Mass Destruction System," *The Quarterly Journal of Defense Analysis*, Vol. 41 (Spring 1998), pp. 243-244.
4. Bruce Russett, et. al., *op. cit.*, p. 226.
5. See <http://www.fas.org/nuke/guide/dprk/facility/cw.htm>
6. The Ministry of National Defense, The ROK, *Defense White Paper 2000* (Seoul: Ministry of National Defense, 2000), p. 58.
7. <http://www.fas.org/nuke/guide/dprk/facility/index.htm>
8. *Defense White Paper 2000*, p. 57.
9. John D. Steinbruner, "Biological Weapons: A Plague upon All Houses," *Foreign Policy*, Vol. 109 (Winter 1997-98), pp. 85-96.
10. Office of the Secretary of Defense, *Proliferation: Threat and Response* (DOD: January 2001), p. 1.
11. Hyun-Kun Yoon, "The North Korean Missile Tests and Its Implications," *KNDU Review*, Vol. 4 (1999), pp. 79-96.
12. *Kugbanggwa Kisul*, No. 127, Sept. 89.
13. *Jane's Intelligence Review*, Special Report No. 2, p. 13.
14. David C. Wright and Timur Kadyshev, "An Analysis of the North Korean Nodong Missile," *Science and Global Security*, No. 93.
15. This single-stage missile apparently incorporates an SS-N-4, Isayev S 2.713M engine with a single larger combustion chamber.
16. Donald H. Rumsfeld, Chairman, *Report of the Commission to Assess the Ballistic Missile Threat to the United States: Executive Summary*, 15 July 1998 (<http://fas.org/irp/threat/misssile/rumsfeld>)
17. *Defense White Paper*, 1998.
18. *Jane's Special Report*, No. 2, *op. cit.*, p. 13.
19. *The Korea Herald*, Oct. 13, 2000.
20. *The Korea Herald*, May 13, 2001.
21. Additionally, the DPRK attacks will be supported by the opening of a "second front" in rear areas by teams of SOF units. These soldiers, some dressed in ROK army uniforms and carrying ROK weapons and equipment, will infiltrate the south by air, sea, and through tunnels under the DMZ to attack CFC airfields, C3, and other key targets.
22. Ju-Hwal Choi, "North Korean Missile Proliferation," Hearing before the Subcommittee on International Security, Proliferation, and Federal Service of the Committee on Governmental Affairs, United States Senate, Oct. 21, 1997.
23. Shin Sung-tack, *op. cit.*, p. 240.
24. *The Korea Herald*, April 17, 1999.

25. Ashley J. Tellis, "Military Technology Acquisition and Regional Stability in East Asia," in Jonathan D. Pollack and Hyung-Dong Kim, eds., *East Asia's Potential for Instability & Crisis* (Santa Monica, CA: Center for Asia-Pacific Policy, RAND/The Sejong Institute, 1996), p. 55.
26. Joseph S. Bermudez, "North Koreans Test Two-stage IRBM over Japan," *Jane's Defense Weekly*, Sept. 9, 1998.
27. *The Korea Herald*, Aug. 10, 1999.
28. Rajiv Nayan, "North Korea and Missile Trade," (<http://www.isda-india.org/an-mar9-6.html>)
29. A comment by Dr. C. Wright at the International Symposium on "East Asian Regional Security Futures: Theater Missile Defense Implications," held at the United Nations University in Tokyo, June 24-25, 2000. Also see *The International Institute for Strategic Studies, Strategic Survey 1996/1997* (London: Oxford University Press, 1997), p. 17.
30. "Results of DOD Nuclear Posture Review," announced on Sept. 22, 1999.
31. *Perry Report 1999*.
32. *The Korea Herald*, June 9, 2001.