VIEWPOINT:

THEATER MISSILE DEFENSE AND NORTHEAST ASIAN SECURITY

by Yan Xuetong

Theater missile defense (TMD) has become one of the most important security issues in Northeast Asia and a major source of contention between the United States and China. This viewpoint seeks to explain some possible concerns about TMD, in hopes of improving the chances for constructive dialogue between Chinese and American students of security. This viewpoint will argue that TMD threatens to undermine Northeast Asian security cooperation, encourage the development of preemptive strike capabilities, and set off a dangerous arms race in the region. These risks could be minimized if Taiwan were excluded from TMD plans, or if US domestic politics lead to the postponement of TMD deployment.

The viewpoint is divided into three major sections. First, it reviews the characteristics of various types of missile defense, concluding that TMD can be considered an offensive as well as a defensive system. Second, it discusses the attitudes of regional actors (the United States, Japan, Taiwan, South Korea, North Korea, Russia, and China) towards TMD, and explains these attitudes in terms of each actor's national resources and military strategy. Finally, the viewpoint outlines some of the potential political consequences of Northeast Asian TMD, including increased suspicions between China and the United States, tensions in the Taiwan Strait, suspicions between China and Japan, and obstacles to nonproliferation. Despite these risks, however, this viewpoint concludes that continued investment in TMD appears to be inevitable.

TMD WEAPONS CHARACTERISTICS

In both name and primary military purpose, TMD is a weapons system for defense, but it can also pose threats to others' security. To illustrate this point, I will attempt to distinguish TMD from national missile defense (NMD), on the one hand, and anti-tactical ballistic missiles (ATBM) on the other. NMD, TMD, and ATBM differ in terms of the geographic scope of their defense and, thus, in their strategic impacts. NMD, in its broadest purpose, is designed to cover the whole nation: its geographic scope for this purpose is thus determined by the size of a country's territory. TMD systems are designed to defend a battlefield as large as several hundred kilometers in diameter. ATBM systems, also known as point defense (PD) systems, are designed to protect small areas (such as airfields, ports, or command and control facilities) within a radius of 50 to 60 kilometers. Due to their different ranges of defense, these three systems have different impacts on international strategic stability.

The deployment of NMD systems could undermine deterrent capabilities and create an incentive to increase strategic nuclear forces. In 1972, the Soviet Union and the United States signed the Anti-Ballistic Missile (ABM) Treaty, which has been one of the fundamental building blocks of US-Soviet and US-Russian arms control efforts. By restricting the deployment of NMD, the ABM Treaty has helped maintain strategic stability between the two nuclear superpowers.

ATBM systems were initially developed by the United States and the Soviet Union during the Cold War. These systems can increase a country's military capability without strategic impact, and are currently deployed by the United States, Russia, China, Japan, South Korea, and Taiwan. The US Army has deployed Patriot Advanced Capability Level-2 (PAC-2) missiles for this purpose, and the US Navy is equipped with Standard Block-4 missiles. The Russian S-300 system is thought to be more advanced than any currently deployed anti-missile sys-

Dr. Yan Xuetong is the Director of the Center for Foreign Policy Studies at the China Institute of Contemporary International Relations in Beijing. He is also a Research Professor at this Institute and an Adjunct Professor at Peking University and the Institute of International Relations. Dr. Yan received a Ph.D. in Political Science from the University of California, Berkeley, in 1992. His book, ***Analysis of China's National Interests*** *(Tianjin Peoples Press, 1996), won the China Book Prize in 1998 and the Tianjin Book Special Prize in 1999.*

tem in the world,[1] but it may be overtaken by the American PAC-3 that is under testing. In the mid-1980s, China successfully conducted a missile intercept test with the HQ-2.[2] A Chinese missile expert predicted that China would possess anti-cruise and anti-tactical ballistic missile systems early in the next century.[3] Japanese troops have deployed Patriot and Aegis/Standard missiles.[4] South Korea-US joint forces have deployed PAC-2 at their military sites in South Korea. And Taiwan has developed the Tien Kung-3—an improved missile defense system based on PAC-2 technology transferred from the United States.[5]

TMD systems became a particular focus of interest in the United States after the Cold War. A US TMD system would likely involve some combination of three intercepting systems: lower-tier defense systems initially designed for point defense, such as PAC-3 and Standard 4; upper-tier defense systems, such as the Navy Theater Wide Defense (NTWD) and the Theater High Altitude Area Defense (THAAD); and boost-phase intercepting systems, such as the Airborne Laser (ABL), once development of this system is completed. The lower-tier defense systems alone are not able to defend a theater, but upper-tier defense systems could have considerable capability against strategic targets. THAAD and NTWD are intended to intercept incoming missiles at an entry speed of 5 km/sec. In order to ensure that capability, its real capability will inevitably be over-designed. That means the eventual capability of THAAD and NTWD might enable interception of an incoming strategic missile. In addition, its geographic scope could be as large as a small nation, although a single THAAD or NTWD system cannot cover nations like the United States, Russia, or China. Deployed in a small country, however, THAAD and NTWD could pose the same dangers as NMD.

Offensive Potential of TMD Technology

There is concern in some countries that TMD could be turned to offensive purposes due to its inherent technical capabilities and the military missions for which it might be used. One of the important distinctions between TMD and NMD is that the former is designed so that it could be used to protect troops on the battlefield, while the latter is designed primarily to protect civilians in their own territory. The TMD system can move with troops around the world. THAAD and NTWD are defensive weapons systems when they are used to protect civilians from foreign attacks, but they may be seen as offensive when deployed abroad to protect forward-based troops who could be used in offensive operations.

The technology of anti-missile systems, whether NMD, TMD, or PD, is mainly based on missile technology, i.e., most TMD systems would intercept incoming missiles with missiles. This basic character of anti-ballistic missile weapons makes them quite different from some other defensive systems, such as anti-tank ditches, air-raid shelters, mines, etc. The essential elements of ballistic missiles and most TMD systems are quite similar: a propulsion system, a guidance system, and a warhead. The differences between TMD interceptors and ballistic missiles are principally in their warheads. A ballistic missile generally uses an explosive payload, whereas TMD interceptors generally carry a smaller payload and may employ techniques other than explosion: for example, an interceptor called a kinetic kill vehicle (KKV) seeks to collide with its target rather than to destroy it by explosion. Aside from warheads, it may be possible for other TMD technology to be applied to ballistic missiles. For instance, the TMD homing system uses infrared technology to find incoming targets. This technology can also be used for air-to-air missiles, air-to-surface missiles, or surface-to-air missiles.

Future achievements in research and development (R&D) of TMD will thus have the potential to improve offensive missile technology. For instance, the technology that enables an interceptor to hit a target-missile traveling at 5 km/sec might be used to improve the accuracy of an offensive missile, increasing its ability to destroy any vehicle moving slower than that velocity on the ground, on water, or in the air.

One factor that might discourage the conversion of TMD technology to offensive missiles is the higher cost of the former. The delivery system of TMD is more advanced and more complicated than that of offensive missiles, and is therefore much more expensive. If, however, the cost of TMD technology were not a factor, or if it declines, the potential for applying some TMD technology to offensive missiles would increase. A country that does not possess advanced offensive missile technology and receives TMD from another state might be tempted to attempt to convert TMD technology to their offensive missiles if this proved a useful way to upgrade their offensive missile capability.

The Importance of Strategic Context

TMD can be a component of a larger offensive weapons system. The defensive or offensive nature of a weapon is generally defined according to its intended military usage. Nevertheless, the fundamental character of a weapon depends on the larger weapons system and military strategy of which it is a part. For instance, the armor of a tank by itself is purely defensive, but it is a part of an offensive weapon when the tank is viewed as a whole weapons system. The same logic could apply to some TMD deployments. The lower-tier Navy TMD interceptor is basically an improved Standard Missile-2 (SM-2) placed on a destroyer or cruiser.[6] In this case, Navy TMD interceptors can be viewed as simply parts of destroyers or cruisers, which can be used as offensive weapons.

From a political point of view, the defensive or offensive nature of TMD is even more controversial. Theorists long ago realized that it is often difficult to distinguish defensive weapons and policies from offensive ones.[7] All weapons and weapons technologies are politically neutral. They can be used for defense or offense. For example, a computer is neutral in nature and it may be used in both missiles and satellites. If we regard missiles as offensive and satellites as defensive, the nature of computers is conditioned by their usage rather than by their technology. A simple machine gun can be used for defending one's border as well as invading another's territory. The complicated TMD system can be similarly used, depending on what it defends. It can become a part of an offensive strategy or capability on a battlefield when it is used to protect weapons and troops in order to launch a general offensive against another party. Even when the announced intention of TMD deployment is defensive, countries it is deployed against cannot be sure that intentions will not change in the future.

TMD ATTITUDES

Attitudes about possible TMD deployment can be related to two factors: the availability of economic and technological resources for TMD, and the strategic effectiveness of TMD. At present, the United States is closest to the possibility of deploying TMD in Northeast Asia. Here, I briefly review current policies regarding this prospective deployment, then discuss how they reflect these two factors.

Current Policies

In the last 15 years, the United States has spent $40-50 billion on all its ballistic missile defense programs.[8] The first stage of a TMD system is expected to be complete by the year 2005, with the total research and development expenditures exceeding $20 billion.[9] Currently, US missile defense funding is reported to be about $3 billion per year, most of which is used to develop and deploy anti-tactical ballistic missiles.[10] In January 1999, the Pentagon decided to request $6.6 billion for TMD deployment over the next six years.[11]

Japan was hesitant to join the US TMD program before 1998, remembering the experience of the FSX project in the 1980s.[12] It worried about losing large amounts of money and gaining very little key technology from the joint TMD R&D program.[13] From 1994-1998, Japan spent only $4.2 million on TMD feasibility studies. After the August 1998 North Korean test of a three-stage rocket, however, the Japanese government decided to join the United States in the long-discussed joint TMD program, seeking Diet approval for an initial TMD budget of 500 million yen (about $3.7 million at the 1998 exchange rate) to one billion yen (about $7.4 million) for the 1999 fiscal year, and a further 20-30 billion yen (about $148-222 million) over the next five years.[14]

Taiwan, on the other hand, immediately welcomed a US congressional suggestion to deploy TMD systems there. On September 30, 1997, the House Committee on International Relations called for the US administration to transfer materials to help Taiwan establish a local-area ballistic missile defense system. Taiwan officially announced its support the next day.[15] Taiwan has decided to purchase lower-tier US TMD systems, but is still studying the feasibility of purchasing upper-tier systems.[16] Taiwan has little chance to join American TMD R&D and it hopes to import US TMD technology if it cannot get the whole system.

South Korea takes a neutral stance on the TMD program. The United States has been trying to persuade South Korea to join the TMD program for years, but South Korea has not yet shown tremendous interest.[17] Although South Korea does not want to join the US TMD project or deploy THAAD on its territory, it also does not oppose American TMD plans.

North Korea is firmly against the US TMD project in Northeast Asia. The United States and Japan have clearly

declared that their TMD systems will be designed against the threat of the North Korean missiles. Therefore, North Korea regards American-Japanese TMD both politically and militarily as an imperialist weapons system serving the interests of American and Japanese military plans against it.

Russia was initially reluctant to agree with the United States on the permissibility of TMD testing. However, before 1999, Russia did not officially oppose the US TMD program, because in September 1997 it had reached an agreement with the United States on a specific threshold below which missile defense tests would not violate the ABM Treaty. This agreement permits TMD testing.[18] But privately, Russian officials and experts complained that the United States imposed this amendment upon them. They believe that the new agreement on the ABM Treaty enables the United States to develop and test NMD systems.[19] In fact, the United States began R&D on the TMD system at Boeing and Hughes no later than 1990, without consultation with the Soviet Union. At that time, the United States planned to test the TMD system in mid-1998.[20] This may be one reason why in 1997 the United States sought to loosen the ABM Treaty's restrictions on anti-missile tests. The United States had conducted at least seven THAAD flight tests before the new agreement on the ABM treaty, and in 1996 it declared that THAAD testing and deployment could "proceed without any ABM Treaty restrictions."[21] Russia was reluctant to revise the restrictions of the ABM Treaty, but felt it had no other choice. The ABM Treaty is a bilateral agreement. Aside from the possible Russian reaction, the United States would face no other international legal consequences if it withdraws from this treaty. Meanwhile, it would be freed from one of the main constraints on its NMD testing. When, in early 1999, the United States suggested revising the ABM Treaty, Russia did become a public opponent of US TMD, realizing that further revision of the ABM Treaty would be no different from American withdrawal from it.

China has opposed US TMD. China regards TMD as an adjustment of the Star Wars idea proposed by the US government in the 1980s. As early as 1985, during former President Richard Nixon's visit to China, Deng Xiaoping told him that China was against the development of all outer space weapons.[22] He also encouraged a joint effort between China and Europe to oppose Star Wars.[23] China has continuously voiced its opposition to TMD, especially proposals that the United States deploy or transfer TMD technology to Taiwan. China has stated that such action would contradict "the basic norms of international law and seriously violates the principles set out in the three Sino-US joint communiques."[24] The three joint communiques, agreed to between 1972 and 1982, established a basis for normalizing US-Chinese relations, and included a commitment by the United States to reduce arms sales to Taiwan. China has also suggested that the decision to develop TMD by the United States would encourage missile proliferation.[25]

Factors behind TMD Policies

The history of weapons development is cyclical: every new weapon system is designed to overcome or reduce the capability of existing weapons. After each new weapons system is invented, new weapons R&D will seek to overcome it again. The TMD program is no different, but at present the United States, as the only superpower, is generally in the lead in TMD R&D.

In this section, I will suggest that the TMD policies of Northeast Asian actors are conditioned by a combination of two factors: (1) the economic and technological resources available for TMD R&D, and (2) the effectiveness of TMD for their national security strategy. Although all the major regional powers are pursuing research and development on at least some forms of missile defense, they differ considerably in their current interest in and potential to deploy TMD. With these two elements as criteria, we can illustrate why China, Russia, North Korea, South Korea, Taiwan, Japan, and the United States have these different TMD policies.

China opposes TMD at present because it has limited economic and technological resources and a counterattack or second-strike-based military strategy. China will

Figure 1: Conditions for TMD Policy

	Resources Available	**Resources Unavailable**
Strategically Effective	USA Japan Taiwan	North Korea
Strategically Ineffective	South Korea	China Russia

continue to attach primary importance to the implementation of its four modernizations (agriculture, industry, science and technology, defense) for the next 50 years. In order to provide an environment favoring the modernization of these sectors, China has advanced a military strategy stressing counterattack over preemptive action. It also emphasizes the subordination of military modernization to economic modernization.[26] Economically, China believes TMD would consume too many resources that should be used for economic development. Militarily, TMD is not required for its counterattack strategy, which rests on the military ability to respond to a first attack. Many methods can protect this second strike capability, including point defense systems, which are much less expensive and technologically demanding than TMD systems.[27]

Russia's TMD policies are also constrained by economic resources and national security strategy priorities. After the demise of the Soviet Union, Russia's economy deteriorated dramatically. According to data from the World Bank, Russia's GDP in 1997 was $492.8 billion, only 6.4 percent of the US GDP the same year.[28] The Russian government does not even have resources to pay its troops regularly, let alone the financial capability to deploy TMD. If START II is implemented, it will outlaw Russian land-based multiple-warhead missiles. In order to prevent its strategic capability from deteriorating further, Russia has given priority to the development of the new Topol-M single-warhead intercontinental ballistic missile.[29] Meanwhile, the major security problem for Russia is domestic instability rather than any external threat. Accordingly, Russian security strategy is becoming more and more internally oriented. TMD fits neither with Russian security needs nor its general military strategy.

North Korea's TMD policy is mainly constrained by its limited economic and technological resources. American air strikes against Iraq in 1998 and Yugoslavia in 1999 should encourage North Korea to develop TMD systems. In late 1998, security officials and policy analysts in Washington, DC, discussed the feasibility of bombing suspected nuclear facilities in North Korea.[30] In terms of military defense, then, possessing TMD technology would provide North Korea with enhanced security. Nevertheless, the country lacks resources for developing or deploying TMD. Its military budget has been kept secret from the public, but some foreign research institutions estimate its defense expenditure is only one-third of South Korea's.[31]

South Korea's TMD policy is constrained mainly by the potential strategic ineffectiveness of TMD for the country. Although South Korea itself does not possess adequate economic and technological resources for conducting TMD R&D, it could join the US TMD program and share research achievements. The problem for South Korea is that TMD technology does not fit with its defense needs. The distance between Seoul and the Demilitarized Zone (DMZ) is only about 40 kilometers. The short distance between Seoul and the DMZ puts the capital within the range of artillery, which makes TMD ineffective to South Korean security strategy. In addition, the designed capability of TMD systems would make it difficult if not impossible to protect Seoul from a North Korean missile attack. If North Korea moved a Scud-B type missile to the DMZ and launched it at Seoul in a surprise attack, the time required to get a TMD system ready for launching, then to respond, and then to finish boosting would, by my calculations, be longer than the time it would take the missile to strike. This means that TMD systems deployed around Seoul could not be counted on to intercept missiles in a surprise attack. Deployment of TMD could not provide sufficient assurance of protection for Seoul to give the South Koreans much motivation to pursue it.

US TMD policy is consistent with both its military strategy and its substantial economic and technological resources. The United States has by far the largest military budget in the world; its annual military expenditure is more than the total sum of all Northeast Asian countries. In 1997, it spent $272.9 billion on its military, nearly seven times more than Japan, 16 times more than Russia, and from 7.7 to 27.5 times more than China.[32]

In terms of military strategy, the United States is willing to initiate attacks against others in circumstances besides an attack by them on the United States or its troops, as the United States has done against Libya, Iraq, and Yugoslavia. In such cases, one role of TMD is to reduce US casualties from military counterattacks by the other side. Awareness of this fact creates concern in China and elsewhere that TMD could be used as part of a US preemptive strike doctrine in other regional conflicts.

Japan does not have the same economic and technological resources for TMD as the United States, but its defense budget is second only to that of the United States. Even if it cannot afford TMD programs itself, Japan, as the major military ally of the United States in Northeast Asia, could join American TMD projects and share the costs and achievements of TMD. According to the Japanese constitution, however, "the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as a means of settling international disputes."[33] Some believe that PD systems would be sufficient to deal with North Korean missiles,[34] in which case TMD would not fit this purely defensive military strategy.

However, 1997 guidelines for Japan-US cooperation require Japan to provide support to the United States when the latter is at war, including conflicts in the Taiwan Strait. After North Korea launched a rocket that traveled over Japan in 1998, the Japanese government agreed to join the United States in TMD research.[35] However, North Korean missile capability might be a pretext used by Japan for its TMD policy. There is concern in China that Japan's participation in TMD could be in preparation to become involved in potential military conflicts in the Taiwan Strait because of the new guidelines signed by Japan and the United States in September 1997.

Further, some Japanese have considered a preemptive strike strategy. For instance, a retired Japanese general argued that it would not contradict the intent of the Japanese constitution to destroy the North Korean missile launching capability by striking its ballistic missile launch sites after diplomatic failure to prevent North Korea from possessing ballistic missiles.[36] Hosei Norota, director-general of the Japanese Defence Agency, claimed that such moves could be "justified" constitutionally.[37] Although the Japanese government recently formally rejected the suggestion of a preemptive strike strategy, even its appearance was suggestive. During the Cold War, it was unimaginable to talk about a preemptive strike strategy in Japan.

Taiwan's TMD policy seems at first glance not to be supported by its resources and defensive strategy. In 1997, Taiwan's defense budget was 262 billion New Taiwan dollars (US$9 billion), even smaller than South Korea's budget of $16 billion (14,014 billion wan).[38] Nevertheless, the Taiwan Relations Act enables Taiwan to have a cheap, if not free, ride on the American TMD project. Taiwan's security strategy relies more on US military protection than on its own military capability. Technically speaking, TMD systems can have only a limited role in improving Taiwan's military capability. In fact, Taiwan needs TMD more for strengthening its strategic relations with the United States than for improving its military capability. Taiwan's leaders also want TMD for domestic political purposes, to show they are capable of providing security for their constituency.

POLITICAL CONSEQUENCES OF TMD

The impact of TMD goes far beyond weapons development. It is likely to have negative political effects upon regional security relationships in East Asia.

Suspicions between China and the United States

TMD exacerbates strategic suspicions between China and the United States. After the collapse of the Soviet Union, China and the United States lost the original basis for their strategic cooperation. In addition, the rapid growth of China's economy worries some American strategists. US defense planners have described China as a potential global competitor in the 21st century.[39] China, on the other hand, views the United States as the main external factor undermining its security environment. According to an official statement on Chinese defense policy:

> Hegemonism and power politics remain the main source of threats to world peace and stability; cold war mentality and its influence still have a certain currency, and the enlargement of military blocs and the strengthening of military alliances have added factors of instability to international security; some countries, by relying on their military advantages, pose military threats to other countries, even resorting to armed intervention.[40]

China believes that TMD systems could be politically or strategically used by the United States to undermine China's efforts at reunification with Taiwan. China has complained that the American Omnibus Appropriation Act of 1998 and the FY1999 Department of Defense Authorization Act interfered in China's internal affairs by including Taiwan in the US TMD program.[41] Meanwhile, China's opposition to TMD could make the United States more suspicious about China's determination to reunify Taiwan by force.

TMD would make Sino-American cooperation on preventing proliferation of weapons of mass destruction (WMD) more difficult. China has long argued that the United States has a double standard when it comes to the export of WMD delivery means because of American arms sales to Taiwan. China regards fighters as a missile delivery means because they carry missiles and are able to attack targets over a range of 300 kilometers. The potential transfer of US TMD technology to Taiwan and Japan would make it more difficult for China and the United States to cooperate on all WMD nonproliferation, including the Missile Technology Control Regime (MTCR), which China has not joined.

Tensions in the Taiwan Strait

TMD in Taiwan may aggravate tensions in the Taiwan Strait because the deployment of TMD could strengthen the political confidence for announcing independence on the island. After People's Liberation Army (PLA) maneuvers in March 1996, which included missile launches, the political groups in favor of independence in Taiwan could no longer argue that the PLA had no capability to attack Taiwan. If TMD systems were deployed in Taiwan, it would enable these groups to pick up the old argument to advocate formal independence. These groups may use TMD to promise people in Taiwan that it would be safe to declare independence, interpreting US TMD sales to Taiwan as a US guarantee of Taiwan's independence. The greater the conviction that TMD would provide a shield for Taiwan from missile attacks, the further Taiwan would move in the direction of formal independence. Mainland China has continuously reiterated its right to use force to achieve reunification. Therefore, the more TMD increases the momentum for formal independence in Taiwan, the greater the likelihood of military conflict in the Taiwan Strait.

Suspicions between China and Japan

There are two reasons for China to suspect Japan's motivation for joining the United States in TMD research. First, Japan's TMD program is linked to potential Japanese involvement in any military conflict in the Taiwan Strait. According to the 1997 United States-Japan Defense Cooperation Guidelines, Japan and the United States would initiate a bilateral coordination mechanism whenever a potential situation in areas surrounding Japan is anticipated. The Japanese Self-Defense Forces will conduct activities to ensure navigational safety in case of military conflict in areas surrounding Japan.[42] Thus, for example, Japan might provide logistical support to US Marines or Air Force troops if they were engaged in military conflict in the Taiwan Strait. TMD could theoretically shield Japan from missile attacks in this case.

Second, US-Japan joint TMD research could be used to remilitarize Japan. China has monitored Japan's potential for militarism and is worried that a TMD program could give those Japanese favoring a strong military an excuse for a dramatic increase of the military budget. According to experts' estimates, Japan's commitment to TMD deployment would be over $15 billion if it conducts substantial R&D projects, which is equivalent to 37.5 percent of its annual military budgets in the 1990s.[43] In addition, as discussed before, China is also concerned about the convertibility of TMD technologies to offensive missiles, which could increase Japan's offensive capability.

Obstacles to Nonproliferation of WMD

TMD creates obstacles to cooperation on regional WMD nonproliferation. First, TMD would undermine the implementation of the Missile Technology Control Regime. The MTCR aims to control the proliferation of missile delivery technology capable of delivering a warhead weighing more than 500 kg beyond a distance of 300 km. Nevertheless, the velocity of interceptor missiles of the THAAD system is permitted to be 3 km/sec, according to the 1997 agreement between the United States and Russia.[44] This velocity would enable the THAAD system to deliver a payload at least 600 kilometers after modifying associated software and adding reentry technology.[45] The THAAD system may have an even more powerful delivery capability than that because it would inevitably be over-designed. The regulations of the MTCR will not be taken seriously by other regional actors if US TMD technology is permitted to be exported to Japan or Taiwan.

Second, TMD could give missile exporters a good excuse for transferring missile technology, enabling them to claim that their exports will be used for defense systems. The potential convertibility between TMD technology and that of offensive missiles could make it impossible for experts to tell whether a general missile delivery technology is for offensive or defensive missiles.

CONCLUSIONS

Based on the above description and analysis, we can reach five conclusions:

(1) Deployment of TMD would impede security cooperation among major powers in Northeast Asia. Bilaterally, the TMD issue makes both China and Russia hesitant to cooperate with the United States in arms control. US-Chinese dialogues for avoiding military confrontation are forms of negative security cooperation designed to prevent major wars from occurring in Northeast Asia. Their joint efforts to constrain military conflicts between other countries are forms of positive security cooperation, which can prevent small military clashes in the region from escalating. The TMD issue will undermine any such positive cooperation between China and the United States. TMD systems will also make Russia hesitate to go into planned START III talks. The deputy chief of staff of the Russian Federation Defense Council argued:

> [T]o continue making agreements with the United States to the effect of strategic offensive arms reduction no longer makes sense for Russia. Hence the conclusion that in the circumstances it makes no sense for Russia to get involved in the economically unfavorable 'disarmament race' with the United States as otherwise Russia might find itself without any nuclear potential.[46]

Multilaterally, the TMD project will exacerbate the asymmetric security relations among China, Japan, and the United States, inevitably impeding the trilateral security cooperation between them. The United States-Japan military alliance places the three countries in an unequal relationship in the trilateral security dialogue. The TMD program will enhance the US-Japan alliance and make Japan more likely to become involved in potential military conflicts in the Taiwan Strait. The United States officially states that the United States-Japan alliance is the cornerstone for the Asia/Pacific region, and its relations with China merely an aid to regional security.[47] As long as China is excluded from the United States-Japan joint TMD program, China will feel targeted by the US-Japan alliance as a common enemy and will be cautious about taking steps in the direction of China-US-Japan trilateral security cooperation.

(2) Excluding Taiwan from the TMD plan would greatly reduce the negative impact of TMD on regional security. China is the major country opposing TMD in Northeast Asia. Its opposition rests largely on its concern over Taiwan's potential separation, including the potential usage of Japan's TMD in a Taiwan Strait conflict. China's nonproliferation policy attaches priority to the issues directly related to its security environment. TMD would cause fewer suspicions between China and the United States or Japan if Taiwan were excluded from the US TMD program. If TMD were not a part of the Taiwan issue, it would be less harmful to regional security than it is now.

(3) The TMD program would bring about an arms race in Northeast Asia in the long run, if not in the short term. Due to the current strategic balance in Northeast Asia and the extreme cost of developing TMD systems, the deployment of TMD will not necessarily stimulate regional arms races immediately, especially while Northeast Asian countries recover from the recent financial crisis. But in the long run, major actors in Northeast Asia would be dragged into an arms race by TMD. First, Russia and China will be forced to develop their TMD systems after the United States, Japan, and Taiwan dramatically increase their military budget for TMD projects. Second, in order to penetrate others' TMD systems, these powers will dramatically increase the numbers of their missiles, because the fundamental defect of TMD is that it cannot intercept targets coming in simultaneously in a large group. Because out-numbering TMD interceptors will be the most effective and economical countermeasure against TMD systems, their deployment will likely trigger offensive missile build-ups.

(4) TMD would encourage a preemptive strike strategy in Northeast Asia. The adoption of a defensive or offensive strategy rests mainly on the comparative advantage of defense or offense. As long as offense has a comparative advantage for a given state's security, that state will find a preemptive strategy attractive.[48] The safer the attack, the larger the incentive to strike first, because a successful preemptive attack provides larger rewards and avoids greater losses. TMD would enable an attacker to reduce the risk of casualties due to retaliation after a preemptive strike and thus increase the advantage of offense by protecting attacking troops and weapons. Therefore, it will encourage states to employ preemptive strike strategies.

(5) The deployment of a TMD system could be postponed but probably not prevented. The dynamics be-

hind TMD R&D are technological development and strategic effectiveness. As long as economic and technological resources are available and TMD is strategically effective, the United States and its allies will feel encouraged to carry out and deploy TMD projects. Current economic and international political factors are not sufficiently strong to stop US TMD projects. However, TMD systems could be delayed by technological and political factors. In terms of technology, no one can ensure that TMD research will be completed according to schedule and that TMD systems will be deployed by the year 2005. If security accidents in Northeast Asia occur before 2005, they may reshape regional security priorities and delay the deployment of TMD in this region. Domestic factors in the United States are also changeable. If the American people and their representatives gain a better understanding of the reasons why other states object to TMD, American domestic politics may operate to postpone TMD development.

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[12] In the 1980s Japan and the United States had a joint program to develop FSX fighters. Due to American control of the key technology, however, Japan did not benefit much technologically through its investment on this project.

[13] "Japan Postpones Joint Missile Defense Study with U.S.," *Aerospace Daily*, August 26, 1998.

[14] Kensuke Ebata, "Japan Joins USA in Theatre Missile Defense Research," *Academic Universe*, September 30, 1998, <http://web.lexis-nexis.com>.

[15] Sheng, "US Missile System."

[16] "Tang Fei: Jian Fan Feidan Xitong Zhengce Buhui Tubian (Tang Fei: No Sudden Change of TMD Policy)," *Lianhe Bao (United Daily News)*, February 2, 1999.

[17] "U.S. Urges S. Korea to Buy Patriot Over S-300V," *Jane's Defence Weekly*, April 16, 1997, p. 3.

[18] The key points of this agreement are (a) the velocity of the interceptor missile does not exceed 3 km/sec over any part of its flight trajectory; (b) the velocity of the ballistic target-missile does not exceed 5 km/sec over any part of it flight trajectory; and (c) the range of the ballistic target-missile does not exceed 3,500 kilometers. See "First Agreed Statement Relating to the Treaty Between the United States of American and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems of May 26, 1972," in *Arms Control Today* 27 (September 1997), p. 21.

[19] Pavel S. Zolotarev, "Russia's Official Reaction to the Moscow Memorandum and to the Idea of LNWFZ-NEA," paper presented to the Fourth Meeting of the Expanded Senior Panel on a Limited Nuclear- Weapon-Free Zone in Northeast Asia, Helsinki, October 12-14, 1998, p. 4.

[20] In 1990, Boeing was awarded a contract to design and develop exoatmospheric kinetic kill vehicles for ground-based interceptors. It was under contract to deliver a Kill Vehicle Flight Test unit for a hit-to-kill test in mid-1998. Meanwhile, Hughes is under contract to accomplish the same tests, but on different dates. "Ground Based Interceptor (GBI)/Exoatmospheric Kill Vehicle (EKV)," <http://www.boeing.com/defense-space/space/ekv/>.

[21] George Lewis and Theodore Postol, "Portrait of a Bad Idea," *The Bulletin of the Atomic Scientists* 53 (July/August 1997), p. 23.

[22] "Deng Xiaoping Criticizes Space Arms Race," *Beijing Review*, No. 37 (September 16, 1985), p. 10.

[23] "Deng Blasts 'Star Wars'," *Bejing Review*, No. 41 (October 14, 1985), p. 10.

[24] Zhao Huanxin, "US Anti-China Defense Clauses Opposed," *China Daily*, October 7, 1998, <http://www.chinadaily.com.cn/>.

[25] Chen Yanni, "US Missile Systems Violating Agreements," *China Daily*, January 22, 1999, <http://www.chinadaily.com.cn/>.

[26] "China's National Defense," *China Daily*, July 28, 1998, <http://www.chinadaily.com.cn/>.

[27] PD refers to defense of a military base or a strategic construction that is much smaller than the area protected by TMD.

[28] World Bank, *Development Data 1998*, <http://www.worldbank.org>.

[29] David Hoffman, "A Russian Missile Exploded in Test," *International Herald Tribune*, October 26, 1998.

[30] Between November 30 and December 7, 1998, on visits to several institutions in Washington, DC (including the Pentagon, the Senate Subcommittee on International Security, and the Brookings Institution), I was frequently asked what China's response would be if the United States conducted military action against suspected nuclear facilities in North Korea.

[31] International Institute for Strategic Studies, *The Military Balance, 1997/98* (London: Oxford University Press, 1997), p. 295.

[32] Usually foreign estimates of Chinese military budgets are three to four times larger than Chinese official data. Therefore, the official gap is 27.5 times and foreign estimated gap is 7.7 times. Calculation of the gap in this paper is based on *The Military Balance, 1997/98* and *SIPRI Yearbook 1998: Armaments, Disarmament, And International Security* (Oxford: Oxford University Press, 1998), pp. 217-221.

[33] Kyoko Inoue, *MacArthur's Japanese Constitution: A Linguistic and Cultural Study of Its Making* (Chicago: University of Chicago Press, 1991), p. 275.

[34] Zou Yunhua, "Zhanqu Dadan Fanyu Yu quanqiu he Diqu Anquan de Guanxi (The Relationship between Theatre Missile Defense and Prosperity in the Asia-Pacific Region)," *Guoji Wenti Yanjiu (International Studies)*, No. 1 (1998), p. 28.

[35] Ebata, "Japan Joins USA in Theater Missile Defense Research."

[36] Toshiyuki Shikata, "Can Japan Take the Lead to Limit Nuclear Weapons?," paper presented to The Fourth Expanded Senior Panel on a Limited Nuclear-Weapons-Free Zone for Northeast Asia, Helsinki, October 12-14, 1998, p. 7.

[37] "New Defence Rhetoric, Actions Dangerous," *China Daily*, March 12, 1999.
[38] *SIPRI Yearbook 1998*, Table 6A.2, p. 218.
[39] William S. Cohen, *Report of the Quadrennial Defense Review* (Washington, DC: Department of Defense, May 1997), Section II, p. 5.
[40] Information Office of the State Council of the People's Republic of China, "China's National Defense," *China Daily*, July 28, 1998, <http://www.chinadaily.com.cn/>.
[41] Ma Chenguang, "Resentment Expressed on Anti-China US Bills," *China Daily*, October 30, 1998, <http://www.chinadaily.com.cn/>.
[42] U.S.-Japan Security Consultative Committee, Completion of the Review of the Guidelines for U.S.-Japan Joint Statement, and the Guidelines for U.S.-Japan Defense Cooperation, New York, September 23, 1997.
[43] Ebata, "Japan Joins USA In Theater Missile Defense Research."
[44] "First Agreed Statement Relating to the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems of May 26, 1972," *Arms Control Today* 27 (September 1997), p. 21.
[45] Zou Yunhua, "The Relationship Between Theatre Missile Defense and Prosperity in the Asia-Pacific Region," *International Studies*, No. 1 (1998), p. 28.
[46] Zolotarev, "Russia's Official Reaction," p. 1.
[47] The White House, *A National Security Strategy for a New Century* (Washington, DC: October 1998), pp. 42-43.
[48] Stephen Van Evera, "Offense, Defense, and the Causes of War," *International Security* 22 (Spring 1998), p. 9; Charles L. Glaser and Chaim Kaufmann, "What is the Offense-Defense Balance and Can We Measure It?," *International Security* 22 (Spring 1998), p. 59.