

A Japanese Perspective on Missile Defense and Strategic Coordination

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In his May 1, 2001 address at the U.S. National Defense University, U.S. President George W. Bush called for a “new framework” of international security, based on a concept of deterrence that relies on both offensive and defensive forces.¹ In subsequent months, the new framework would be implemented through increased U.S. investment in ballistic missile defenses (BMD); the signing, on May 24, 2002, of the U.S.-Russian Strategic Offensive Reductions Treaty (SORT, also known as the Treaty of Moscow); and the U.S. withdrawal, on June 16, 2002, from the 1972 Anti-Ballistic Missile (ABM) Treaty. The new approach to deterrence outlined in President Bush’s speech also opened the possibility that strategic adjustments might follow in the Japan-U.S. alliance. Specifically, the Bush administration’s shift to an integrated approach to BMD that combined National Missile Defense (NMD) and Theater Missile Defense (TMD) will likely pose new political, strategic, and technological challenges to alliance relations.

Japanese official statements in recent years have underscored that any Japanese collaboration with the United States on missile defenses would not target third countries because of the strictly defensive nature of this activity.² In reality, however, the logical implications of BMD cooperation under the new framework would be far more complex, given its integrated character, than is reflected in the official categorization of this cooperation as part of the traditional Japanese basic doctrine of “exclusively de-

fensive defense.” This paper will examine these issues, reviewing the impacts of Japanese participation in BMD on Japanese-U.S. “strategic coordination” and “alliance management.” For the purposes of this article, “strategic coordination” of missile defenses within the Japan-U.S. alliance includes threat estimation, cost-benefit analysis, the examination of technological feasibility, and the regional implications of system deployment. “Alliance management” consists of the adoption of BMD system components to establish an integrated BMD system, and the establishment of operational coordinating mechanisms—command, control, communications, computers and intelligence (“C4I”), and interoperability—between U.S. forces and the Japanese Self-Defense Forces (JSDF), as well as coordination within the JSDF itself.

In examining these issues, this paper will review the regional implications of Japanese BMD and clarify Japanese historical interests in such defenses, especially after the Cold War, and examine how this interest has related to regional missile developments. It will also discuss Japanese concerns about BMD and the potential strategic benefits it may provide. Finally, the paper will analyze the potential impacts of Japanese BMD deployment on the missile programs of neighboring countries and how the Japan-U.S. alliance will try to deal with these missile programs under the concept of “strategic coordination.”

JAPAN AND MISSILE DEFENSE: BACKGROUND AND CURRENT DEBATE

Japan has been engaged in a tacit ballistic missile defense dialogue with the United States since the early 1980s. The discussions were formalized in 1987, when the two countries signed an "Agreement Concerning Japanese Participation in Research for the Strategic Defense Initiative (SDI)."³ Soon afterwards, the U.S. Department of Defense sponsored the Western Missile Architecture (WESTPAC) Studies (1989-1993) and conducted a series of research projects within an industry-to-industry framework. The work demonstrated tangible Japan-U.S. cooperation based on mutual defense requirements generated by the proliferation of ballistic missile technology, and led to a recommendation for a two-tiered Japanese TMD architecture. This architecture was to combine the lower-tier Patriot Advanced Capability-3 (PAC-3) system and the upper-tier Theater High Altitude Area Defense (THAAD) system.⁴ Despite the enthusiasm that the two countries' defense industries shared, BMD cooperation between Japan and the United States at the government-to-government level was driven by political considerations, which largely aimed to ameliorate tensions in bilateral political and economic/trade relations.⁵

In the early 1990s, however, a turning point in the thinking of the Japanese government took place, as it shifted its stance toward BMD from a "politically-driven" to a "threat-driven" approach. The Iraqi use of short-range Scud ballistic missiles during the 1991 Persian Gulf War, coupled with the North Korean test of the Nodong missile into the Sea of Japan in 1993, presented clear evidence of the threat to the Japan-U.S. alliance from theater ballistic missiles. After the Nodong launch, the Japanese government began to consider further upgrades to its Patriot system, expressed interest in THAAD, and began official discussions with the United States on a joint TMD program. Accordingly, in 1994, the two governments recast TMD as an alliance management issue, with the establishment of the bilateral Japan-U.S. Theater Missile Defense Working Group (TMD-WG).

Japanese concern over the regional missile proliferation further increased in the mid-1990s. First, a week-long Chinese military exercise in March 1996, which included the launching of numerous short-range ballistic missiles near the Taiwan Strait on the eve of Taiwan's presidential elections, forced the Japanese government to consider the possibility that it might be threatened by Chinese in-

termediate-range missiles in the context of a U.S.-Chinese crisis over the future of Taiwan. Second, the North Korean test of a Taepodong-1 missile in August 1998 further broadened the support for BMD in Japan beyond defense experts. The public, in particular, became aware of the dangers Japan faced because of the proliferation of ballistic missiles in Northeast Asia. The Taepodong-1 test was instrumental in compelling Japan to look at the U.S. proposals to develop missile defense systems.

Accordingly, in December 1998, Japan agreed to participate in joint research on the issue of missile defense, and a Memorandum of Understanding was signed with the United States on "joint technology research for Navy Theater Wide (NTW) Theater Ballistic Missile Defenses." The Japanese government, however, cautiously divided its cooperation into three phases: research, development, and procurement/deployment of any weapons system. This phased approach will preserve flexibility for future political decisions. In contrast, the United States does not make this separation, and research and development are generally linked. This difference in approach has allowed the U.S. side to include Japan in its BMD research and development efforts, while Japan has officially committed only to joint research.⁶

The 1998 agreement called for the parties "to conduct analysis, preliminary design, and certain risk-reduction experiments." This activity would lead to the "design specification and technology selection for the four agreed missile sub-components due to be integrated into the [Navy Theater Wide] STANDARD Missile's latest derivative, the SM-3."⁷ Based on data provided through a bilateral TMD study initiated by the TMD-WG, as well as on the preferences of Japanese industry and the Japanese Maritime Self-Defense Forces, by 1997, the JDA concluded internally that the most logical area for bilateral technological cooperation would be in the NTW program.⁸

In 1999, Japan began joint technical research on NTW with the United States, working on the design of four components of the NTW interceptor missile: infrared homing devices, the kinetic warhead, second-stage propulsion, and the nose cone. In addition, Japanese firms began trial production of the system's infrared homing device. It was reported in February 2001 that the BMD joint study was originally scheduled for completion by 2003 or 2004, when Japan would decide whether to go beyond the research stage and develop a BMD system. But the effort has been extended for more than three years, until 2006, because

of delays in U.S. tests of a Navy-based missile defense system.⁹

THE BUSH ADMINISTRATION AND MISSILE DEFENSE DEVELOPMENTS IN JAPAN

President Bush's speech on missile defense on May 1, 2001 cited the need for "new concepts of deterrence that rely on both offensive and defensive forces." At the core of Bush's speech was a major change in America's long-standing nuclear doctrine.

First, Bush stressed that the United States and Russia should "go beyond" the constraints of the 30-year old ABM treaty, and he expressed a willingness to discuss the issue with China. Second, the speech made no distinction between NMD and TMD, but anticipated the integration of both into a unified "layered" ballistic missile defense system that would simultaneously protect the U.S. and its allies. Diplomatically, the integrated concept of missile defense aimed to reduce concerns that the protection of the United States through separate national missile defenses might lead the United States to abandon its allies in a crisis—to become "decoupled" from them and leave them exposed to enemy missiles. The integrated approach also intended to send a message to Russia and China, that their objections to missile defense programs could not be negotiated separately with the allies and the United States.¹⁰

The Japanese government responded to Bush's May 2001 speech with five points:¹¹

- (1) Japan shared the U.S. view that the proliferation of ballistic missiles is causing a serious threat to both countries' security.
- (2) Japan and the United States have been conducting cooperative research on ballistic missile defense technologies. As such, bilateral cooperation remains important for the security of Japan, and the two states would continue to cooperate on this research.
- (3) Japan expressed the understanding that the United States is considering the missile defense program while making various diplomatic efforts to address the proliferation of ballistic missiles.
- (4) Japan welcomed President Bush's reference, in his recent speech, to further cuts in nuclear weapons.
- (5) Japan hoped that the missile defense issue would be dealt with in a manner conducive to the improvement of the international security

environment, including in the areas of arms control and disarmament. Japan welcomed the renewed announcement by the United States of U.S. intentions to conduct close consultations on this issue with its allies and other interested states, such as the Russian Federation and the People's Republic of China.

Despite this "cautious support" for Bush's new policy, statements by Japanese officials at the time appeared to limit Japanese participation in an integrated BMD program. In June 2001, Japanese Defense Minister Nakatani stated that Japan would not participate in the U.S. missile defense program if it violated the current interpretation on the right of collective self-defense, which does not allow Japan to provide military support to another state in circumstances where Japan itself is not under attack.¹² (At issue was the possibility that Japanese resources that formed part of an integrated missile defense with the United States might be employed to defend an attack directed solely at that country.) This debate often discusses whether Japan should take part in cooperation on boost-phase missile defense, in which the final target of an enemy missile might not be known before it was intercepted.¹³ The Japanese defense establishment, however, wanted at least to "research" how the integrated missile defense project might work, arguing that it would not be reasonable for the government to cite constitutional constraints and distance itself from the missile project at such an early stage in its development.

Indeed, some observers at this juncture argued that boost-phase missile defense had considerable potential. This system was receiving wide discussion at the time, although it had not yet been the subject of joint Japan-U.S. research efforts. Enemy missiles are easiest to locate during the boost phase, when their rocket motors are burning, and there are few countermeasures to foil a boost-phase intercept because it is difficult to hide or mimic a large, burning rocket. Boost-phase defense also appeared to offer the following two distinct political advantages.¹⁴

First, boost-phase defenses can work against intermediate-range missiles that might threaten U.S. friends and allies, as well as against intercontinental missiles that might threaten the United States, itself. Thus, reliance on this approach could lessen the fear of decoupling, and reassure U.S. security partners who might otherwise worry about a possible NMD deployment that might defend only the United States—thereby making allies more tempting targets for attack. Second, sea-based and airborne laser

boost-phase defenses would not threaten the basic viability of either the Russian or the Chinese nuclear deterrents. Land-based Russian and Chinese nuclear forces are located far inland and would therefore be out of range of these defenses, which would be based outside these countries and could shoot down missiles only within a few hundred miles of the defensive system launch platforms.¹⁵ In the Japanese strategic context, the North Korean threat is an appropriate case for boost-phase defense. Since North Korea sits on a peninsula, it might be possible to defend against its missiles using sea-based, boost-phase interceptors alone, an approach that would not have the range to counter Russian and Chinese strategic forces.

REGIONAL MISSILE ASSESSMENT AND JAPANESE STRATEGIC INTEREST IN BMD

Chinese Missile Development

In recent years, China has pursued a number of programs for modernizing and enlarging its missile arsenal. In March 2002, its military budget marked a 19.4 percent increase (following a pattern of double-digit increases for past 14 years), which suggests that the modernization of the Peoples' Liberation Army (PLA) is a high priority in Chinese budgetary policies. China has deployed land-based intermediate-range ballistic missiles (IRBMs), and it is estimated that about 70 of these have ranges covering Japan and other neighboring countries.¹⁶ China is replacing its CSS-2 ballistic missiles, which form the main body of Chinese theater missile forces, with more modern and more accurate CSS-5 missiles.¹⁷ China also has deployed approximately 350 short-range ballistic missiles (SRBMs), and it is estimated that its inventory of SRBMs is increasing at about 50 missiles per year. These SRBMs are mostly based in the Nanjing Military Region opposite Taiwan. However, it has also been reported that the PLA is developing variants of the CSS-6 SRBM that could reach Okinawa if forward-deployed.¹⁸

Most Chinese IRBMs could be equipped with nuclear weapons. Although China, since its first nuclear explosion in October 1964, has pledged unconditionally that it will not use nuclear weapons against non-nuclear weapon states, including Japan, some analysts argue that the declaration has become increasingly less credible because of China's strong criticism of Japanese research on TMD technologies. Moreover, if China considers that its "minimum deterrence strategy" vis-à-vis the United States, based upon limited numbers of intercontinental ballistic

missiles (ICBMs), would be threatened by a U.S. missile defense shield, the most likely Chinese response is to lean more heavily on the nuclear deterrence provided by IRBMs and medium-range ballistic missiles targeted against U.S. friends and allies. The likelihood of such a Chinese response would increase if future improvements in the quantity and quality of Chinese ICBMs do not overcome the capabilities of planned U.S. missile defenses.¹⁹

Meanwhile, China may seek to further upgrade its ICBM capability.²⁰ Such upgrades include replacing the aging CSS-4 Mod 1 missile and developing two follow-on, extended-range versions of the new DF-31 missile: a solid-fuelled mobile ICBM and an SLBM, which would have enhanced survivability against pre-emptive strikes. These developments could lead to the Chinese outlook on nuclear weapons evolving from adherence to a "minimum deterrence" to a more ambitious "limited deterrence strategy" with an emphasis on warfighting and escalation control.²¹

North Korea

North Korea has reportedly deployed approximately 100 Nodong missiles that could target a wide area of Japan, and has demonstrated the ability to launch the Taepodong-1, which can cover even more of Japan. Furthermore, it is possible that North Korea could develop a longer-range missile like the Taepodong-2 if it decided to do so, especially if it is getting foreign technical assistance.²² Pyongyang has defended the development of long-range missiles as supporting a domestic satellite-launch program, but such launch vehicles could also be used as ballistic missiles. Given the self-declared North Korean moratorium on missile tests until 2003, it is difficult to estimate the current pace of the North Korean missile development program. Nevertheless, many government and private analysts remain concerned that North Korea is continuing to develop the ability to manufacture ICBMs and IRBMs.

The current North Korean ballistic missile threat, however, would not be seriously formidable in military terms because its ballistic missiles are not likely to be armed with nuclear weapons and ballistic missiles themselves are generally an ineffective delivery vehicle for releasing chemical and biological weapon (CBW) agents over a wide area.²³ Nonetheless, taking advantage of the secrecy surrounding its technology to intimidate Japan, North Korea may threaten to employ its ballistic missiles under

the pretense that they are armed with CBW, especially if a conflict breaks out on the Korean peninsula.

Japanese Strategic Interests

As mentioned earlier, until the mid-1990s, Japanese interest in BMD remained very cautious because of a number of uncertainties. These uncertainties continue to be shared by Japanese policymakers and experts even after Japan decided to participate in joint BMD research with the United States. First and most significant are questions about the relative costs and benefits of missile defense systems. From the cost perspective, at a time when the Japanese economy seems to be perennially stagnant, it is very difficult to convince members of the Diet and the Japanese public to appropriate large sums for new defense systems. In addition, opponents of BMD deployment in Japan often argue that BMD technology remains unproven, or contend that it would prove minimally effective against the type of missile attacks that might be launched on Japan. They also insist that the missile threat from North Korea and China has been overestimated. Furthermore, they worry that Japanese deployment of missile defenses might provoke an arms race in Northeast Asia. These arguments continue to command significant support in Japan.

Second, there are legal and constitutional issues that could complicate bilateral Japanese-U.S. cooperation on missile defense. These derive from Japan's ban on arms exports and the Japanese government decision not to engage in joint "collective defense" actions that might include cueing—a battle management function for coordinating information between sensors, control locations, and launchers—and other aspects of missile defense operations.²⁴

This aspect of alliance management has been further highlighted under the new integrated concept of missile defense developed under the Bush administration. Not only does the issue of "collective defense" matter, but the cultural differences between Japan and the United States in defense procurement and industry-to-industry cooperation could hinder further cooperation on BMD. One factor that could hinder further cooperation is the new block approach of the U.S. Missile Defense Agency, which aims to build on technical progress every two years, and to undertake incremental improvements that could permit early finding of demonstrated and prototype BMD capabilities.²⁵ This approach accommodates the "capability-based

approach" described in the U.S. Quadrennial Defense Review in 2001, stating that when a capability is sufficiently validated, the element or component will be ready for a decision regarding transition to production. Whether Japanese-U.S. joint research can upgrade its scheme from the previous "requirement-based approach" to this "capability-based approach" presents a serious challenge for the Japanese government and defense industries.

Third, Japan is concerned about the political repercussions of its deployment of BMD from neighboring states. In particular, the China factor has been a major predicament for Japanese policymakers. Tokyo would like to avoid a strong Chinese reaction to Japanese deployment of BMD. On the one hand, there is a genuine concern in Tokyo about the rise of major new power centers that are enjoying rapid economic growth and are armed with weapons of mass destruction (WMD) and a variety of ballistic missiles. On the other hand, many Japanese specialists believe that China's rise is inevitable and that it is necessary to build an accommodative approach, rather than adopt a confrontational attitude merely because U.S. strategic concerns have changed.

However, some of these concerns may be overly exaggerated, as Japan is not a nuclear weapon state and does not possess ballistic missiles with which it could attack third countries. There is also a growing understanding among security experts that the deployment of missile defenses may enhance "strategic coordination" under the Japan-U.S. alliance and provide important benefits.²⁶ These could include:

- **Assurance of Japanese Security:** A BMD system, in combination with U.S. extended deterrence, can negate attempts by hostile states to discourage Japanese decisionmakers and public and would provide reassurance to them about deterrence and defense against North Korean and Chinese missile strikes.
- **Assurance for U.S. Forward-Deployed Forces:** Although adversaries possessing theater ballistic missiles equipped with WMD may threaten or use these weapons to deter or constrain U.S. military operations during a crisis, a missile shield covering forward-deployed U.S. forces can lower such risks. Thus, BMD would help Tokyo to minimize the effects of Chinese missiles in a future crisis over Taiwan and mitigate the impact of North Korean missiles during a possible conflict on the Korean peninsula.

BMD systems covering Japan will also protect U.S. bases in Japan, thereby contributing to the efficient operations of the Japan-U.S. alliance, as described in the Japanese-U.S. Defense Cooperation Guidelines.

- **Japan-U.S. Technology Cooperation:** Japan-U.S. joint technology research on BMD will deepen military technology cooperation between the two countries. Concerns remain, however, that the vast U.S. technical lead may still relegate Japan to the position of licensed production or even off-the-shelf arrangements with U.S. industry.²⁷ If Japan takes a further step to overcome both legal constraints and its unique procurement system in order to adjust itself to the “capability-based approach,” there will be more opportunity for the Japanese defense industry to cooperate dynamically with the United States on BMD.

- **Strengthen Extended Nuclear Deterrence:** A BMD system covering Japan and other U.S. allies in East Asia could supplement the U.S. nuclear umbrella by limiting the effectiveness of nuclear blackmail by potential opponents and blunting the impact of any unauthorized missile launches.

- **Threat Reduction and Nonproliferation Effect:** As a side benefit, a BMD system protecting U.S. allies could contribute to nonproliferation of nuclear weapons and ballistic missiles. If coupled with U.S. extended deterrence, BMD could reduce the motivations of other regional states to acquire nuclear weapons and ballistic missiles, which would be less effective after the deployment of BMD. TMD could also enable the United States to reduce its reliance on nuclear deterrence in a regional contingency, thereby further marginalizing the significance of nuclear weapons.

- **“Bargaining Chip” In Missile Talks with China:** If China continues to regard Japanese BMD as a negative development that increases Chinese insecurity, several approaches could be proposed to set agendas for negotiation, even while the BMD research and development phases proceed. A limit on the full-scale deployment of Japanese BMD could be proposed, for example, in return for a Chinese pledge to curtail SRBMs and MRBMs or qualitative devel-

opments such as multiple independently targetable reentry vehicles (MIRVs).²⁸ Beijing could be also asked to increase transparency with regard to ballistic missiles and nuclear strategy.

CONCLUSION: A NEED FOR U.S.-CHINESE ASYMMETRIC STRATEGIC STABILITY?

A potential strategic consequence of the deployment of BMD systems, to which China and North Korea often refer, is that the United States and its potential adversaries may fall into an offense/defense arms race. This type of logic is becoming less valid for Russia, following the signing of the Treaty of Moscow in May 2002, and does not really apply to North Korea, which only possesses limited numbers of missiles that could be negated by missile defense systems. The core question, however, remains for China.

If U.S. and allied missile defense capabilities seek to blunt Chinese strategic nuclear forces, China would face a loss of credibility of its nuclear deterrent. Such a development is likely to be intolerable for China, especially at a time when the United States has emerged as the world’s dominant military power. Some analysts have argued that as a result, China will feel compelled to expand its strategic missile arsenal more rapidly and more extensively than it would have in the absence of U.S. missile defenses.²⁹ Of course, one can argue that the Chinese missile buildup is not driven by an effort to counter missile defense, but by domestic political pressure. Others can conversely contend that Chinese second-strike capability has never existed in the strict sense, given the unsophisticated nature and limited number of Chinese liquid-fuelled ICBMs. In this view, Chinese “minimum deterrence” itself is an illusion.

Contrary to the aforementioned criticism, the *absence* of BMD might lead to an arms buildup. South Korea, for instance, while turning down the U.S. offer of a TMD program, is planning to develop longer-range (300-kilometer) ballistic missiles to counter the North Korean missile threat. In addition, Chinese missile exercises in the vicinity of Taiwan generated two types of responses on the island: one called for introducing a missile defense, the other advocated the development of offensive missiles capable of hitting major cities on the Chinese mainland.³⁰

Similar divides over the strategic consequences of BMD deployment are found among Japanese experts. One side argues that BMD will provoke an arms race; the other argues that BMD can be a tool for persuasion and even for arms control. Simply speaking, much depends on how one estimates the effectiveness of a BMD system and how one assesses the impact of that system on the strategic perceptions of potential opponents. In academic terms, it is a matter of offense/defense ratio, of deterrence by punishment *versus* deterrence by denial. The likely strategic implication of BMD from this offense/defense balance sheet will determine the major security concepts of the coming decade.

The United States and China have yet to come to an agreement on the status of their strategic nuclear relationship. If the U.S. decision on missile defenses has already gone beyond the point of no return, China and the United States need to seek a new framework of "offense/defense" strategic stability. If the Bush "new framework" is to become a strategic *fait accompli* in the near future, U.S.-Chinese recognition of mutual deterrence, although based on an asymmetrical nuclear balance, would greatly enhance strategic stability in East Asia and help reduce the growing dangers from missile proliferation.³¹ The long-term agenda facing Japan-U.S. strategic coordination on the regional implications of missile defense, then, is to establish a U.S.-Chinese nuclear relationship based on a balance of offensive and defensive forces.

¹ Office of the White House Press Secretary, Press Release, May 1, 2001, "Remarks by the President to Students and Faculty at National Defense University," <<http://www.whitehouse.gov/news/releases/2001/05/20010501-10.html>>.

² Japan Defense Agency, "Dando Misairu Boei (BMD) ni Kansuru Kenkyu ni Tsuite" [Research on Ballistic Missile Defense], <<http://www.jda.go.jp/j/library/archives/bmd/bmd.pdf>>.

³ U.S. Department of Defense, "Report to Congress on Theater Missile Defense Architecture Options for the Asia-Pacific Region," May 4, 1999, p. 6.

⁴ East Asia Nonproliferation Project, *Theater Missile Defense (TMD) in Northeast Asia: An Annotated Chronology, 1990-Present* (Monterey, CA: Monterey Institute of International Studies, 2000).

⁵ Patrick Cronin, Paul Giarra, and Michael J. Green, "Theater Missile Defense and the U.S.-Japan Alliance," in Michael J. Green and Patrick Cronin, eds., *The U.S.-Japan Alliance: Past, Present, and Future* (New York: Council for Foreign Relations Press, 1999).

⁶ "Theater Missile Defenses in the Asia-Pacific Region," Henry L. Stimson Center Working Group Report, Report No. 34, June 2000.

⁷ U.S. Department of Defense, "Memorandum for Correspondents," August 16, 1999.

⁸ Cronin, et al., "Theater Missile Defense," p. 172.

⁹ "Theater Missile Defense Study Extended until 2006," *Japan Times*, February 17, 2001.

¹⁰ For example, Sha Zukang, the director of the Arms Control and Disarmament Department of the Chinese Foreign Ministry, said that "China would not object to a theater system that is limited to protecting American troops or ships,"

despite China's strong opposition to U.S. NMD. Craig S. Smith, "China Willing to Talk About Missile Defense," *New York Times*, March 15, 2001.

¹¹ Japanese Ministry of Foreign Affairs, Press Conference, May 11, 2001. <<http://www.mofa.go.jp/announce/press/2001/5/11.html#6>>.

¹² "Tokyo Flinching from Study of Missile Shield," *Mainichi Daily News*, June 15, 2001.

¹³ Some analysts argue that this debate conflicts with the Japanese government's "united view" in 1956 and 1958, which allowed Japanese forces to attack enemy missile sites to defend against possible missile launch toward Japan. See "Teki Kichi Kogeki to Jieiken No Han-I," *Bouei Hand Book*, (Tokyo: Asagumo Shimbunsha, 2001).

¹⁴ James Lindsay and Michael O'Hanlon, "Defending America: A Plan for a Limited National Missile Defense," Policy Brief #70, The Brookings Institution, Washington, DC, 2001.

¹⁵ The U.S. Missile Defense Agency is exploring kinetic energy and directed-energy concepts using basing modes at sea, in the air (Airborne Laser), and in space. In contrast to sea-based and airborne laser systems, reassurance to Russia and China about their nuclear deterrent would not hold if a space-based laser and kinetic energy kill vehicle could be successfully and fully deployed. The system integration and engineering process for a space-based system, however, will take much longer than for the other two systems. US Missile Defense Agency, "Fact Sheet: Boost Phase Missile Defense," <<http://www.acq.osd.mil/bmdo/bmdolink/pdf/bstphase.pdf>>.

¹⁶ Shinichi Ogawa, "TMD and Northeast Asian Security," paper presented at the Conference on East Asian Regional Security Futures: Theater Missile Defense Implications, The United Nations University, Tokyo, Japan, June 24, 2000.

¹⁷ Japan Defense Agency, *2001 Defense of Japan* (Tokyo: Japan Defense Agency, 2001).

¹⁸ U.S. Department of Defense, *Annual Report on The Military Power of the People's Republic of China*, Report to Congress Pursuant to the FY 2000 National Defense Authorization Act, (Washington, DC: U.S. Department of Defense, 2002).

¹⁹ See Kori Urayama, "Chinese Perspectives on Theater Missile Defense: Policy Implications for Japan," *Asian Survey* 40 (July/August 2000), pp. 599-621.

²⁰ National Intelligence Council, *Foreign Missile Developments and the Ballistic Missile Threat through 2015: Unclassified Summary of a National Intelligence Estimate*, December 2001; U.S. Department of Defense, *Annual Report on The Military Power of the People's Republic of China*.

²¹ Alastair Iain Johnston, "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security* 20 (Winter 1995/96).

²² David C. Wright, "The North Korean Missile Program," Union of Concerned Scientists, <<http://www.ucsusa.org/security/nk-miss-prog-dw.html>>.

²³ Ogawa, "TMD and Northeast Asian Security."

²⁴ Michael J. Green and Toby F. Dalton, "Asian Reaction to U.S. Missile Defense," *NBR Analysis* 11 (November 2000).

²⁵ See U.S. Missile Defense Agency, "Fact Sheet: Ballistic Missile Defense Fiscal Year 2002 Budget," <<http://www.acq.osd.mil/bmdo/bmdolink/pdf/budget02.pdf>>.

²⁶ These analyses are exemplified by the following publications: Ogawa, "TMD and Northeast Asian Security"; Tetsuya Umemoto, "Missile Defense and Extended Deterrence in the Japan-U.S. Alliance," *The Korean Journal of Defense Analysis* 12 (Winter 2000); Satoshi Morimoto, *Anzen Hoshoron: 21 Seiki no Kikikanri*, (Tokyo: PHP Institute, 2000).

²⁷ Cronin, et al., "Theater Missile Defense."

²⁸ Urayama, "Chinese Perspectives on Theater Missile Defense."

²⁹ Brad Roberts, "U.S. Ballistic Missile Defenses: Implications for Asia," paper presented at the Second Cooperative Workshop on East Asian Security Futures, Nautilus Institute, March 3-4, 2001, <<http://www.nautilus.org/nukepolicy/workshops/shanghai-01/robertspaper.html>>.

³⁰ Arthur S. Ding, "China's Concerns about Theater Missile Defense: A Critique," *Nonproliferation Review* 6 (Fall 1999), <<http://cns.miis.edu/pubs/npr/vol06/64/ding64.pdf>>.

³¹ International Institute for Strategic Studies, "China's Response to Missile Defences: Confronting a Strategic *Fait Accompli*," *Strategic Comments* 8 (January 2002).