

# Missile Defense and Deterrence

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## 1 Introduction

During the Cold War, both the United States and the Soviet Union developed and deployed ballistic missiles capable of delivering nuclear weapons. The two countries adopted deterrence strategies based on nuclear retaliation, largely because effective defense against ballistic missiles was difficult to attain. As the Anti-Ballistic Missile (ABM) Treaty signed between the United States and the Soviet Union in May 1972 stipulated, the two countries refrained from developing and deploying ballistic missile defense (BMD) systems that would protect their respective homelands in order to maintain a stable mutual deterrence relationship.

During that period, the number of countries possessing ballistic missiles increased dramatically. In February 1968, only two nations, the United States and the Soviet Union, deployed ballistic missiles.<sup>1</sup> By April, 2001, however, the number of countries (regions) deploying ballistic missiles with a range of 100km or more had increased to as many as 34, including the so called "rogue states" or "states of concern" (that is states of concern in regard to their proliferation behavior).<sup>2</sup> Being apprehensive of such a trend, the United States since the Bush (senior) administration has undertaken earnest research and development of missile defense to protect U.S. forces stationed overseas, allied countries, and the U.S. mainland from rogue states' ballistic missile attacks.<sup>3</sup> Japan also participated in joint study with the United States on the technological feasibility of the Navy Theater Wide Defense (NTWD) system, one category of Theater Missile Defense (TMD), even though the country is protected by umbrella of U.S. extended deterrence.

This paper tries to explore the impact and significance of missile defense on the strategic circumstances established by the reliance on retaliatory deterrence that was institutionalized under the ABM Treaty. The first part of the paper will discuss the questions that arose over retaliatory deterrence due to the changing security environment, as symbolized by the termination of the Cold War and the proliferation of ballistic missiles. The role of missile defense as a means to cope with these problems will then be analyzed. In the latter half, problems with the National Missile Defense (NMD) and critical opinions about NTWD now under the

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<sup>1</sup> The Institute for Strategic Studies, *The Military Balance 1968-1969* (London: The Institute for Strategic Studies, 1968), pp. 20, 52.

<sup>2</sup> "World Missile Chart - Countries Possessing Ballistic Missiles,"

(<http://www.ceip.org/files/projects/npp/resouces/ballisticmissilechart.htm>) (May 18, 2001)

<sup>3</sup> The United States promoted, from the latter half of the 1950's, research and development of BMD including Nike-Zeus ABM, Nike-X ABM, Sentinel, Safeguard, and Strategic Defense Initiative (SDI). The purpose of developing these BMD was to deal with ballistic missile attacks from the Soviet Union or China.

U.S.-Japanese joint technical research will be reviewed, in parallel with the discussions on the significance and limits of missile defense for deterrence policies.

Although the Bush (junior) administration has employed the collective name of missile defense to avoid classification of missile defense as either NMD or TMD, this paper treats, for the convenience of discussion, missile defense to protect the U.S. mainland as NMD<sup>4</sup> and the missile shield to protect U.S. forces stationed overseas and allied countries as TMD.

## 2 Retaliatory Deterrence vis-à-vis Rogues' Ballistic Missiles

During as well as after the end of the Cold War, the proliferation and build-up of ballistic missiles has continued most likely due to the military significance of ballistic missiles. Defense against ballistic missiles is not easy and the deployment of ballistic missiles carrying weapons of mass destruction (WMD), such as nuclear, biological, or chemical warheads, constitutes a serious threat to neighboring countries. If ballistic missiles capable of carrying WMD can be deployed in an invulnerable basing mode, they could be a source of deterrence or may be used as a political tool to threaten surrounding countries. Furthermore, ballistic missiles' long-range can neutralize the advantage of defense depth. If accuracy can be improved, ballistic missiles armed only with conventional warheads will be able to perform a range of military operations. The acquisition of such militarily significant ballistic missiles by states that are hostile or unfriendly to the U.S. and Japan creates several difficult problems despite the fact that the United States possesses overwhelming military capabilities.

### (1) Post-Cold War Regional Conflicts and Deterrence

Given the unchallenged dominance of U.S. military power, it is natural to think that even if the so-called rogue states deploy WMD-armed ballistic missiles able to strike the United States, they will be fully deterred from attacking. However, in the post-Cold War period the exercise of deterrence against such countries is not always easy. During the Cold War, as countries in Europe as well as some in East Asia generally belonged to either the Western or Eastern camp with the United States and the Soviet Union placed at the top respectively, any regional conflicts involving these countries could have been escalated into a confrontation between the two

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<sup>4</sup> NMD is a ballistic missile defense that defends whole U.S. territory by intercepting long-range ballistic missiles that can reach the U.S. mainland and Hawaii. In contrast, TMD consists of the upper-tier defense system to intercept theater ballistic missiles and the lower-tier defense system that envisages the interception of not only theater/tactical ballistic missiles but also cruise missiles. NTWD and Theater High-Altitude Area Defense (THAAD) are categorized as the former, while Navy Area Defense (NAD) and Patriot Advanced Capability (PAC-3) System fall under the latter.

superpowers. Deterrence of any regional conflicts involving these countries was therefore as important as deterrence of a direct military conflict between the United States and the Soviet Union. That strengthened the U.S. resolution as well as U.S. deterrence capability to prevent regional conflicts. Post-Cold War regional conflicts, however, no longer threaten a U.S.-Russian showdown. Even a regional conflict serious enough to determine the fate of the country dragged into such a conflict no longer necessarily affects the vital interests of the United States. In other words, the interests of the countries involved in regional conflicts have become estranged from those of the United States. This has raised doubts in some countries as to the resolution of the U.S. in exercising its deterrent, especially when the U.S. might suffer considerable damages and casualties from intervention in the conflict. This inference is likely to be made, above all, by countries having ballistic missiles that are not only capable of carrying WMD but also invulnerable to attack while placing the U.S. mainland as well as U.S. forces stationed overseas within their reach. In short, as the implications of post-Cold War regional conflicts have become literally regional then there is a danger that the U.S. itself may be deterred from intervening: once a country possessing WMD-armed ballistic missiles is involved in a regional conflict, the flexibility of America's military operations may be impaired by the threat of ballistic missile attacks on the U.S. mainland and/or U.S. forces stationed overseas.<sup>5</sup>

## (2) Limitation of Retaliatory Means

The difficulty of deterring states of concern is also greatly amplified by constraints on the means of retaliation. A requirement for persuasive deterrent to be obtained is the possession of a weapon system corresponding to weapons employed by the opponent, concurrently with counter-attack capabilities which match up to the opponent's strike patterns. The United States, however, now possesses only nuclear weapons and conventional capabilities as retaliatory means. Regarding biological weapons, the then President Richard Nixon declared in November 1969 that the U.S. unconditionally renounced all methods of biological warfare, including retaliatory use of biological weapons.<sup>6</sup> As a result, coupled with the Biological Weapons Convention (BWC) put into effect in March 1975, the United States now has no biological weapons that can be used in operations. Meanwhile, chemical weapons cannot be used under any circumstances, including the use as "reprisal," by the

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<sup>5</sup> U.S. Secretary of Defense Dick Cheney, *Report of the Secretary of Defense to the President and the Congress* (Washington, D.C.: U.S. Government Printing Office, January 1991), p. 59; U.S. Secretary of Defense Les Aspin, *Report of the Secretary of Defense to the President and the Congress* (Washington, D.C.: U.S. Government Printing Office, January 1994), p. 53; The U.S., White House, "Misconceptions about Missile Defense," (<http://www.ceip.org/files/projects/npp/resources/EmbassyCableNMD.htm>) (July 27, 2001).

<sup>6</sup> United States Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements: Texts and Histories of the Negotiations*, 1996 edition, (Washington, D.C.: U.S. Government Printing Office, n.d.), p. 95.

signatories of the Chemical Weapons Convention (CWC) including the United States, since Article 1 of the CWC obligates each state party never to use chemical weapons under any circumstances and Article 22 stipulates that the text of the CWC shall not be subject to reservations.<sup>7</sup>

The capability options left open to the United States to retaliate against rogue states are nuclear weapons and conventional weapons. The use of either capability, however, does not ensure credible deterrence in every spectrum of contingency. First, the credibility and pertinence of nuclear retaliation to deter nuclear attacks on the United States (basic deterrence) are generally well perceived. U.S. extended deterrence for allied countries, however, is supposedly questioned in some cases by rogue states deploying survivable nuclear-armed ballistic missiles since, as pointed out above, regional conflicts have come to have a different meaning for the United States.

Moreover, post-Cold War international society has given rise to new factors that are likely to constrain nuclear deterrence policies. The typical example is an advisory opinion given by the International Court of Justice (ICJ) in July 1996 on the question concerning the legality of the threat or use of nuclear weapons. The ICJ stated in its advisory opinion that excepting for “an extreme circumstance of self-defense, in which the very survival of a State would be at stake,” the threat to use or use of nuclear weapons “would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law....”<sup>8</sup> ICJ’s such advisory opinion means that opportunities to exercise credible nuclear deterrence are largely narrowed, since it is suggested that nuclear threat (exercise of nuclear deterrence) or actual nuclear use is labeled unlawful except in an extreme situation where the survival of a nation would be at stake. Of course, the ICJ’s advisory opinions are not legally binding. But undeniably they are also of political and ethical importance that cannot be neglected as an opinion of the only World Court.

Demand for maintenance and reinforcement of the Nuclear Non-Proliferation Treaty (NPT) regime, increasingly vocal in the post-Cold War era, has also affected discussion on the use of nuclear deterrence. As a measure for minimizing the role and mission of nuclear weapons, which is crucial for the maintenance and reinforcement of the NPT regime, there is a growing voice claiming for the institutionalizing nuclear “no-first use” policy.<sup>9</sup> Nuclear no-first use means nuclear

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<sup>7</sup> For further details, see: Masahiko Asada, “Dai 5 sho Kagakuheiki no Kinshi” [Chapter 5 Prohibition on Chemical Weapons (my translation)]; Mitsuru Kurosawa, ed., *Gunshuku-Mondai Nyumon* [Introduction to the Disarmament Issues (my translation)], 2nd edition, pp. 111, 117.

<sup>8</sup> International Court of Justice, Case Summaries, “Legality of the Threat or Use of Nuclear Weapons,” Advisory Opinion of 8 July 1996. (<http://www.icj-cij.org/icjwww/idecisions/isummaries/iunanaummary960708.htm>)(November 2, 2001).

<sup>9</sup> The Canberra Commission on the Elimination of Nuclear Weapons, *Report of the Canberra Commission on the Elimination of Nuclear Weapons* (Canberra: National Capital Printers, 1996), p. 57; National Academy of

powers do not employ nuclear weapons first, although it does not preclude the second or retaliatory use against nuclear use of other nuclear power. The demands for no-first use of nuclear weapons have grown partly because of an increased recognition that the role and significance of nuclear weapons is simply to deter the use of nuclear weapons by other nuclear-weapon states. This understanding is rooted in the historical experience since the advent of nuclear weapons: no armed conflict occurred between nuclear-weapon states except for a couple of brief border skirmishes between China and the Soviet Union in the late 1960s, whereas nuclear weapons have not been very effective in restraining non-nuclear-weapon states from waging war against nuclear-weapon states – e.g., Korea, Vietnam, the Falklands, and Afghanistan. Another reason noted is that although the U.S. has long employed nuclear deterrence strategy based on the threat of nuclear "first use" in Europe and the Korean Peninsula, it has become less necessary for the U.S. to maintain such first-use posture due to the improved security environment.<sup>10</sup>

The United States has not yet officially abandoned the option for nuclear first use. But the U.S. has launched a couple of policies that make its intent of nuclear first use dubious. The first is the withdrawal and partial dismantlement of tactical and theater nuclear weapons deployed overseas, announced by President Bush (senior) in September 1991.<sup>11</sup> As a result, all the U.S. tactical/theater-level nuclear weapons deployed in the Asia-Pacific region had been withdrawn by around early July 1992.<sup>12</sup> Second, the "Nuclear Posture Review" announced by the Clinton administration in September 1994, stated that the U.S. would in principle employ conventional capabilities in coping with regional conflicts that might involve even the use of nuclear or biological/chemical weapons.<sup>13</sup> These indicate that the United States holds an ambiguous posture, lowering the possibility of nuclear first use while not going as far as declaring no-first use of nuclear weapons. The U.S. has taken a painful position that aims to make compatible both nuclear non-proliferation as the

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Sciences, Committee on International Security and Arms Control, *The Future of U.S. Nuclear Weapons Policy* (Washington, D.C.: National Academy Press, 1997), p. 71. Steve Fetter, "Limiting the Role of Nuclear Weapons," Harold A. Feiveson, ed., *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-alerting of Nuclear Weapons* (Washington, D.C.: Brookings Institution Press, 1999), pp. 31-45; Jack Mendelsohn, "NATO's Nuclear Weapons: The Rationale for 'No First Use,'" *Arms Control Today*, Vol. 29, No. 5 (July/August 1999), pp. 3-8, etc.

<sup>10</sup> Although it is not well-known that the U.S. had also adopted a nuclear first-use policy in Korea, in June 1975 the then U.S. Secretary of Defense James R. Schlesinger confirmed the stationing of tactical nuclear weapons within South Korea and strongly suggested the possibility of nuclear first-use against North Korean conventional military aggression into South Korea. *Yomiuri Shimbun*, June 21, 1975 (evening edition).

<sup>11</sup> For the details, see Arms Control Association, "Factfile: Comparison of U.S. and Soviet Nuclear Cuts," *Arms Control Today*, Vol. 21, No. 9 (November 1991), pp. 27-28 or Shinichi Ogawa, *Kaku-gunbikanri Gunshuku no Yukue* [A Prospect for Nuclear arms Control and Disarmament (my translation)] (Tokyo: Ashi Shobo, 1996), pp. 204-211.

<sup>12</sup> International Institute for Strategic Studies, *The Military Balance 1992-1993* (London: Brassey's, 1992), p. 14.

<sup>13</sup> U.S. Department of Defense, "Results of Department of Defense Nuclear Posture Review," September 22, 1994.

core of post-Cold War U.S. nuclear policies and the security commitments to allied countries.

In addition, the "negative security assurance" declared by the U.S. has also narrowed the possibility of exercising nuclear deterrence policies. The United States, in an effort to support the NPT regime, has declared since June 1978 a conditional negative security assurance to the effect that the U.S. would not use nuclear weapons against a non-nuclear-weapon NPT party as long as such state does not launch armed attack on the United States, its armed forces or its allies in association or alliance with other nuclear-weapon state.<sup>14</sup> The declaration indicates that the U.S. nuclear use against an NPT-member non-nuclear-weapon state is limited only to a non-nuclear weapon state attacking on the United States, its armed forces or its allies in association or alliance with other nuclear-weapon state. The U.S. would not execute nuclear retaliation if an NPT-member non-nuclear weapon state, not in association or allied with other nuclear-weapons state, launched a biological or chemical weapons attack on the U.S. or its allies. North Korea is allied with China, one of the five nuclear-weapon states, and therefore is not immune from a U.S. nuclear retaliation should North Korea launch armed attack on the U.S. or its allies. The afore-mentioned U.S. negative security assurance does not allow the U.S. to carry out nuclear retaliation, if North Korea, after its alliance with China is dissolved, should singly launch a biological or chemical weapon attack on Japan or South Korea. Without the threat of nuclear retaliation, however, the ability of the U.S. and its allies to always deter biological and chemical weapons attack would appear to be lessened.

Responding to such apprehensions, some of the Clinton administration suggested the use of nuclear weapons as a means to deter biological and chemical weapon attacks by non-nuclear weapons states of its own. In May 1996, for example, the then Secretary of Defense William J. Perry testified in Congress the possibility of nuclear retaliation against chemical weapons attack, and Robert Bell, Senior Director for Defense Policy and Arms Control of the National Security Council, also announced, when the U.S. signed a protocol to the African Nuclear-Weapon-Free Zone Treaty, that the U.S. would use every means available to cope with WMD-armed attack by any contracting party to the nuclear-weapon-free zone treaty.<sup>15</sup> Nevertheless, such intentions were not found reflected on the nuclear weapons employment policy announced by the Clinton administration in November

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<sup>14</sup> The United States declared in June 1978 such conditional negative security assurance in the form of a statement by Secretary of State Cyrus Vance. See Hisakazu Fujita, ed., *Gunshuku Jouyaku Siryoushu* [Collection of Disarmament Treaties (my translation)] (Tokyo: Yushindo, 1988), p. 363. Also just before the NPT Review and Extension Conference of April 1995, such negative security assurance was repeatedly declared. See Hisakazu Fujita & Masahiko Asada, eds., *Gunshuku Jouyaku Siryoushu*, 2<sup>nd</sup> edition, [Collection of Disarmament Treaties (my translation)] (Tokyo: Yushindo, 1997), p. 105.

<sup>15</sup> Victor A. Utgoff, "Nuclear Weapons and the Deterrence of Biological and Chemical Warfare," Occasional Paper No. 36, The Henry L. Stimson Center, (Washington, D.C.: The Henry L. Stimson Center, October 1997), p. 1.

1997. The new presidential decision directive reiterated the traditional conditional negative security assurance, only adding a new possibility of using nuclear weapons first against a non-nuclear-weapon state suspected in terms of compliance with the NPT or an equivalent international convention.<sup>16</sup>

In short, it may be safe to say that the United States, though it has not yet discarded the option of nuclear first use, is virtually narrowing down the role of its nuclear weapons to deterrence to nuclear use by other nuclear-weapon states. As apparent from experiences in Hiroshima and Nagasaki, nuclear weapons are abominable weaponry that could, once used, kill a huge number of people indiscriminately, combatants or non-combatants, young or old, or male or female. It is also not easy to neglect ICJ's advisory opinion that any nuclear use is illegal except in an extreme situation upon which the very survival of a state is at stake. Accordingly, a decision of nuclear use, especially in the case of its first use, would be required to overcome strong ethical and political hurdles. Such constraining factors should work particularly strong on the U.S. since it is the only state in the world that has ever employed nuclear weapons. The U.S. more than once considered the employment of nuclear weapons in regional conflicts even after Hiroshima and Nagasaki but in no case came to use them after all. This fact eloquently points to how high ethical and political hurdles of nuclear use have now become. And if this no-use situation continues in the future, the credibility of nuclear deterrence could be forced to decline gradually except as a deterrent to nuclear use by other nuclear-weapon states.

### (3) Reliability of Conventional Deterrence

In the Gulf War, the U.S. hi-tech conventional capabilities demonstrated an enormous destructive power. For example, stealthy F-117 fighter-bombers flew only two percent of the air-assault missions against Iraq, but destroyed about 40 percent of attack objectives.<sup>17</sup> Owing to the brilliant performances shown by hi-tech conventional weapons, there has emerged an opinion in the U.S. that the U.S. government should rely on hi-tech conventional weapons, rather than nuclear ones, as a means to deter regional conflicts that might involve the use of WMD. In September 1991, the then Secretary of Defense Dick Cheney, explaining the Bush (senior) nuclear disarmament initiative, said that America's modern hi-tech conventional weapons would perform almost all military tasks that had previously

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<sup>16</sup> Robert Bell, "Strategic Agreements and the CTB Treaty: Striking the Right Balance," *Arms Control Today*, vol. 28, no. 1 (January/February 1998), p. 6; Craig Cerniello, "News and Negotiations: Clinton Issues New Guidelines on U.S. Nuclear Weapons Doctrine," *Arms Control Today*, vol. 27, no. 8 (November/December 1997), p. 23.

<sup>17</sup> Charles Krauthammer, "Don't let 'Cheap Hawks' Shoot This Weapons Down," *The International Herald Tribune*, July 14, 1995.

been assigned to tactical nuclear weapons.<sup>18</sup> Similarly around fall in 1991, William J. Perry, before assuming office as the U.S. Secretary of Defense, noted that U.S. hi-tech conventional weapons could serve as a credible deterrent to a regional power's use of chemical weapons.<sup>19</sup> To be sure, the U.S. hi-tech conventional weapons, thanks to their improved accuracy and enhanced capability to discriminate between a wide range of attack objectives, have become able to destroy hardened military bases and command posts. This capability was previously owned only by nuclear weapons.

Hi-tech conventional weapons also excel nuclear weapons in terms of credibility of retaliatory threat. The damage and destruction caused by nuclear use tend to be disproportionate to that incurred by non-nuclear weapons, and it is thus not easy to decide to carry out nuclear retaliation. And this is well known, as illustrated by the historical fact that there have been several non-nuclear weapon states using military force against nuclear-weapon states. Moreover, many aggressive acts against neighboring countries have been conducted by totalitarian states, such as North Korea and Iraq. Policies of totalitarian governments do not reflect the general intention of the public. Deterrence by nuclear retaliation, however, inevitable claims sacrifice from the innocent populace. On the other hand, the use of hi-tech conventional weapons does permit selective retaliatory attacks that minimize collateral damage and probably makes the retaliatory threat more credible.

Given the aforementioned advantage of hi-tech conventional deterrence, there can also be observed inherent defects in the deterrence. In the first place, hi-tech conventional deterrence may fail to be fully persuasive as deterrent. This is because a potential adversary may have difficulty in understanding clearly the devastating power of hi-tech conventional weapons, while the destructive power and lethal capabilities of nuclear weapons are matters of universal knowledge. The efficacy of hi-tech conventional weapons lies in their high accuracy and discriminating capability, with the latter owing much to the U.S. ability to locate and identify critical targets of adversaries. U.S. intelligence capabilities, therefore, matter very much. But this U.S. ability to collect military information or to selectively attack objectives cannot be easily inferred by other states, thus leaving the destructive power of hi-tech conventional weapons unlikely to be fully understood.

Second, damages caused by conventional capabilities tend to be underestimated. Each nation has its own "strategic culture" or view of military power, and certain leaders may be unmoved by the magnitude of destruction that the U.S. hi-tech weapons can inflict. Particularly, questions remain in the so-called "intra-war deterrence" situation regarding capabilities to stop military operations from escalating. In other words, under circumstances where the attacker is already experiencing the effects of hi-tech conventional strikes as part of an ongoing war, it is

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<sup>18</sup> William M. Arkin et al., "Nuclear Weapons Headed for the Trash," *The Bulletin of the Atomic Scientists*, Vol. 47, No. 10 (December 1991), p. 16.

<sup>19</sup> William J. Perry, "Desert Storm and Deterrence," *Foreign Affairs*, Vol. 70, No. 4 (Fall 1991), p. 66.

doubtful that a threat of additional hi-tech conventional strikes would act as a powerful deterrent against the use of biological and chemical weapons. Retaliation by conventional capabilities, that lack the decisive impact of nuclear retaliation, will have great difficulty in establishing a highly reliable deterrent due to its intrinsically less threatening nature.

A major problem in deterrence strategies based on retaliatory capabilities lies in the difficulty of identifying the necessary level and/or scale of retaliation due to differences between the challenger and the deterring side in strategic culture and perspectives on military power. And this problem becomes more and more difficult as the number of states subject to deterrence increase. The difficulty of deterrence strategies also varies with the type and scale of a conflict to be deterred. For instance, extended deterrence for allies and conventional deterrence are more complex and diversified tasks than mutual deterrence between nuclear-weapon states due to the intervening factors to be considered, including the resoluteness of the nation exercising deterrence. Furthermore, the strategy pursued by a challenger may make retaliatory deterrence less effective no matter what retaliatory means the deterring side possesses. For example, military actions to achieve a rapid *fait accompli* may make the exercise of a retaliatory policy problematic.

### 3 Significance and Limits of Missile Defense

As already mentioned, rogue states possessing WMD-armed, invulnerable ballistic missiles may believe they are able to deter the United States. Meanwhile, if the United States, for fear of damages incurred, hesitates to intervene in regional conflicts caused by these rogue states, then it not only will endanger the peace and stability in such regions but also could adversely affect the relationship between the United States and its allies. To keep itself able to intervene in regional conflicts caused by the states of concern, the U.S. must possess the means to limit the damage from ballistic missile attack, namely the capability to intercept and shoot down such missiles. If missile defense is deployed to counter ballistic missile attacks from rogue states, the U.S. can then pursue military operations against these countries without fearing retaliation against its mainland or forces stationed overseas. Military commitments to allies and the performance of extended deterrence will become more credible and reliable. If the U.S. mainland or U.S. overseas forces are vulnerable to the threat of missile attack, public opinion opposed to military actions against states of concern is expected to be strengthened within the United States. Missile defense, however, may offset these concerns.

The following scenario may also be envisaged: in the situation where a rogue state was defeated by U.S. forces and the survival of its government appeared very unlikely, then remaining WMD-armed ballistic missiles may be used against the U.S. and/or its allies participating in joint military operations with the United States.

This situation of "last blow by a loser about to die" can never be deterred by any means. Apart from that threat, the danger of accidental or unauthorized missile firing is also heightened with the increase in the number of countries possessing ballistic missiles. Retaliatory deterrence, needless to say, is helpless against such an accidental or unauthorized missile firing. Interception of ballistic missiles and warheads launched is then the only protective measure available.

Some European NATO nations have raised the so-called "de-coupling" concerns that the U.S. deployment of NMD may damage the unity between the United States and Europe in terms of security. They apprehend that deployment of NMD may allow the U.S. to counter the threat of ballistic missiles from rogue states, thereby discouraging the U.S. from getting involved in external affairs and relaxing its defense commitments to allies.<sup>20</sup> Certainly, such a problem may arise if America's NMD turns out to be able to secure the safety of the U.S. mainland without external intervention. But the U.S. NMD program, which likely to remain a limited defense network that can at most confront rogue states' ballistic missile threat, will never be able to counter Russia's sizable ballistic missiles and much more improved ballistic missile capabilities of China. Thus the United States cannot afford to avoid international engagement, particularly with China and Russia, if it wishes to secure its security. And as mentioned above, TMD and NMD capability would enable the U.S. to pursue more flexible military operations vis-à-vis states of concern without fear of the threat of retaliation against U.S. overseas forces or the U.S. mainland. Accordingly, U.S. missile defense is unlikely to bring about "decoupling" between U.S. security and European security.<sup>21</sup>

An improvement of U.S. damage limitation capability through the deployment of missile defense (NMD or TMD) would establish greater reliability of U.S. extended deterrence for its allies. It must, however, be noted that this theory is applicable only to states of concern that do not have a mutual nuclear deterrence relationship with the United States. Missile defense aimed at Russia, which is no longer distinctly hostile but yet cannot discard completely a relationship of mutual nuclear deterrence with the United States, could raise another problem. This also holds true of China, assuming that it has now attained a relationship of mutual nuclear deterrence with the United States. The meaning of nuclear umbrella is the deterrence of armed strikes on allied and friendly countries from third states through

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<sup>20</sup> For introductory information on those opinions, see Camille Grand, "Missile Defense: The View from the Other Side of the Atlantic," *Arms Control Today*, Vol. 30, No. 7 (September 2000), p.15. The Japanese government has not so far clearly declared ayes or noes concerning U.S. NMD. Former Prime Minister Mori only stated to the effect that he understood that the United States, considering the proliferation of ballistic missiles as a serious threat to its national security, has conducted NMD studies in addition to diplomatic efforts in coping with the threat.

<sup>21</sup> Harold Brown, "Where De We Go From Here?" *Arms Control Today*, Vol. 30, No. 8 (October 2000), p. 13 and Ivo H. Daalder et al., "Deploying NMD: Not Whether, But How," *Survival*, Vol. 42, No. 1 (Spring 2000), p. 16.

the threat of nuclear use and its escalation. Key to increasing the credibility of the threat of nuclear use and subsequent nuclear escalation is the damage-limitation capability of the country providing the nuclear umbrella and the strength of political relations between the country providing the nuclear umbrella and its protege. The means of damage limitation for a country providing nuclear umbrella are strategic defense such as missile defense and counterforce capabilities to strike the opponent's nuclear capabilities, particularly a "prompt hard-target kill capability" to attack and destroy an opponent's hardened nuclear forces in a short time. So if a superior damage limitation capability is attained through missile defense or more powerful time-urgent counterforce capabilities, the nuclear umbrella can be made as much more credible and reliable. However, if damage-limiting capabilities are endlessly pursued, in the strategic environment like the START regime where the upper limit is set for deployment of strategic nuclear delivery vehicles, the opponent's retaliatory capabilities will be weakened, destabilizing mutual nuclear deterrence and/or encouraging the opponent to reinforce its offensive delivery vehicles in order to re-secure its retaliatory power. Damage-limiting measures such as missile defense and counterforce capabilities are thus a "double-edged sword" between countries having a relationship of mutual nuclear deterrence with each other: a direct trade-off occurs between improving the credibility of the nuclear umbrella and the stability of mutual deterrence.<sup>22</sup>

To avoid this dilemma and to alleviate the destabilizing factors inherent in missile defense, (a) development and deployment of missile defense must surpass that of offensive missile force in terms of cost-performance ratio, (b) the side deploying missile defense should also reduce the number and offensive capabilities of ballistic missiles, and (c) offensive strategic forces that are likely to remain vulnerable must be removed, in parallel with improvements in the survivability of the remaining strategic forces and deployed missile defense systems.<sup>23</sup>

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<sup>22</sup> For a couple of publications that point out such an implication of missile defense and counterforce capabilities, see Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton 1961; rpt. Westport, CT: Greenwood Press, 1975), p. 6; Harold Brown, *Thinking about National Security: Defense and Foreign Policy in a Dangerous World*, (Boulder: Westview Press, 1983), pp. 57-58. And for an article that deals with the United States struggling with such a dilemma of trade-off, see Earl C. Ravenal, "Counterforce and Alliance: The Ultimate Connection," *International Security*, Vol. 6, No. 4 (Spring 1982), pp. 26-43.

<sup>23</sup> Charles L. Glaser, "Defense Dominance," Joseph S. Nye, Jr. et al., *Fateful Visions: Avoiding Nuclear Catastrophe* (Cambridge: Ballinger, 1988), pp. 56-60, 62; Michael M. May, "The U.S.-Soviet Approach to Nuclear Weapons," *International Security*, Vol. 9, No. 4 (Spring 1985), pp. 146-147; James R. Schlesinger, "Rhetoric and Realities in the Star War Debate," *International Security*, Vol. 10, No. 1 (Summer 1985), p. 7; and Sidney D. Drell, Philip J. Farley, and David Holloway, "Preserving the ABM Treaty," *International Security*, Vol. 9 No. 2 (Fall 1984), pp. 89-90.

#### 4 Clinton Administration's Missile Defense Program (January 1993 - January 2001)

U.S. missile defense program against rogue states can be dated back to the concept of "Global Protection Against Limited Strike (GPALS)" announced by the Bush (senior) administration in January 1991, immediately after the end of the Cold War. Unlike the Strategic Defense Initiative (SDI) of the Reagan administration, GPALS was not intended to counter large-scale ballistic missile attacks from the Soviet Union (Russia) but limited ballistic missiles attack from states of concern as well as firings of ICBMs by Russia and China due to accidents or miscalculation. It consisted of the space-based missile interceptors, fixed land-based missile defense system to be deployed within the United States, and theater/tactical ballistic missile defense system for the purpose of dealing with ballistic missile attacks on U.S. overseas forces and allied countries.<sup>24</sup>

The Clinton administration, inaugurated in January 1993, proceeded with the research and development of the GPALS missile defense programs it inherited, except for the space-based intercept system, but under the title of NMD and TMD. Considering the fact that there already existed the threat of theater and tactical ballistic missiles and cruise missiles against U.S. forces stationed overseas or allied countries, the Clinton administration placed priority on the research and development of TMD over most of its period in power.

##### (1) TMD Programs

The TMD programs pursued by the Clinton administration were composed of several systems that can be differentiated by the intercept altitude of ballistic and cruise missiles and the means of deployment. Classification by intercept altitudes gave two systems: lower-tier defense systems to intercept missiles within the atmosphere (at an altitude of about 100 kilometers or less) and upper-tier defense systems to intercept ballistic missiles in the high atmosphere or outside the atmosphere (at an altitude of about 100 kilometers or more). In terms of deployment patterns, there were both land and sea based systems.

Lower-tier TMD systems consisted of the land-based Patriot Advanced Capability-3 (PAC-3)<sup>25</sup> and the sea-based Navy Area Defense (NAD) system, both aimed at shooting down ballistic and cruise missiles that possess a range of less than

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<sup>24</sup> U.S. Secretary of Defense Cheney, *Report of the Secretary of Defense to the President and the Congress*, 1991, p. 59; International Institute for Strategic Studies, *The Military Balance 1991-1992* (London: Brassey's, 1991), pp. 13-14; and Charles L. Glaser, "Nuclear Policy Without an Adversary," *International Security*, Vol. 16, No. 4 (Spring 1992), p. 62.

<sup>25</sup> PAC-3 is likely to be deployed together with PAC-2 units. Kenneth W. Allen et al., "Theater Missile Defenses in the Asia-Pacific Region," A Henry L. Stimson Center Working Group Report, No. 34 (June 2000), pp. 3-4.

about 1,500 kilometers as well as aircraft.<sup>26</sup> PAC-3 added new missiles to the already deployed PAC-2 system and radar/intercept control station upgraded to provide an improved capability to intercept ballistic missiles. According to the White House announcement, PAC-3 has succeeded in all of the previous seven intercept tests.<sup>27</sup> NAD is planned to shoot down both cruise and short-range ballistic missiles and is based on the U.S. Navy's Aegis-equipped cruisers and destroyers that carry upgraded radar, Aegis intercept control system, and improved standard missiles.

Upper-tier TMD comprises land-based mobile Theater High-Altitude Area Defense (THAAD) and sea-based Navy Theater Wide Defense (NTWD) systems. Their principal targets for interception are ballistic missiles with a range of up to about 3,500 kilometers.<sup>28</sup> THAAD is a system to intercept ballistic missiles and/or warheads carried by them, using large mobile phased array radars, high speed high-altitude interceptors, and a newly developed intercept control station. NTWD is to intercept ballistic missiles and separated warheads in the mid-course (halfway along their flight path) or terminal stage by using the improved Aegis system and Light-weight Exo-Atmospheric Projectile (LEAP) carried by standard-3 missiles launched from Aegis warships.

Other TMD items handled by the Clinton administration include the Medium Extended Air Defense System (MEADS)<sup>29</sup> under joint development with Germany and Italy and the Arrow system<sup>30</sup> jointly developed with Israel. The U.S. Air Force has also continued to study the Boost Phase Interceptor (BPI) system to intercept ballistic missile main bodies on their boost stage immediately after launched. The Air-borne Laser (ABL) system using laser weapons on board Boeing 747 aircraft is its typical example.<sup>31</sup>

For TMD programs to be put under way, an ABM Treaty-related problem needed to be overcome. An ABM system whose deployment is restricted under the treaty is the "system to counter strategic ballistic missiles or their elements in flight trajectory."<sup>32</sup> Interceptors that shoot down theater and tactical ballistic missiles do not fall under this category and are able to be deployed on land, sea, or air without any limits on their number. The ABM Treaty, however, failed to clearly define the demarcation of interceptors shooting down strategic ballistic missiles from those

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<sup>26</sup> Ibid., pp. 3, 7.

<sup>27</sup> The U.S., White House, "Misconceptions about Missile Defense," (<http://www.ceip.org/files/projects/npp/resources/EmbassyCableNMD.htm>) (July 27, 2001).

<sup>28</sup> Allen et al., "Theater Missile Defenses in the Asia-Pacific Region," p. 7.

<sup>29</sup> U.S. Secretary of Defense William S. Cohen, *Report of the Secretary of Defense to the President and the Congress* (Washington, D.C.: U.S. Government Printing Office, 1999), pp. 71-72.

<sup>30</sup> A missile defense system to intercept ballistic missiles with a range of about 700 kilometers at a low altitude of about 50 kilometers. Israel started to deploy the system around Spring of 2000.

<sup>31</sup> U.S. Secretary of Defense Cohen, *Report of the Secretary of Defense to the President and the Congress*, 1999, p. 72.

<sup>32</sup> See Article 2 Paragraph 1 of the ABM Treaty.

intercepting other ballistic missiles.<sup>33</sup>

The United States intermittently negotiated with Russia from November 1993 onwards to remove such ambiguity from the ABM Treaty. Belarus, Kazakhstan and Ukraine (who were expected to be signatories to the ABM Treaty) also attended the negotiations. An agreement was reached in June 1996 upon permitting deployment of TMD interceptors with a flight velocity not exceeding 3 kilometers per second (low-velocity) as long as the intercept missile system (and its component) would not be used for tests for intercepting ballistic missiles with a range exceeding 3,500 kilometers or a flight velocity exceeding 5 kilometers per second over any part of their flight trajectory.<sup>34</sup>

In March 1997, the use of TMD interceptors with a flight velocity exceeding 3 kilometers per second (high-velocity) was also agreed upon at a U.S.-Russian summit meeting in Helsinki. This agreement consisted of three parts. The first is the confirmation of the U.S.-Russian Agreement of May 1995 in Moscow comprising the following five items<sup>35</sup>: (a) commitment to the ABM Treaty as a cornerstone of strategic stability; (b) development and deployment of TMD systems are possible, but it should not lead to violation or circumvention of the ABM Treaty; (c) a deployed TMD system does not pose a realistic threat to strategic nuclear force of another party to the ABM Treaty; (d) TMD systems will not be deployed by the parties for use against each other; and (e) the scale of deployment of TMD systems in quantity and geographic scope will be consistent with non-strategic missile programs confronting the party. Second, the intercept missile system (and its component) under development could be deployed as TMD, as long as it is not used for test-intercepting ballistic missiles with a range exceeding 3,500 kilometers or ballistic missiles with a flight velocity exceeding 5 kilometers per second over any part of their flight trajectory. Third, each party undertook not to develop, test or deploy space-based interceptor missiles or space-based components based on "other physical principles." Among TMD programs of the United States, only NTWD falls under the category of high-velocity TMD.<sup>36</sup>

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<sup>33</sup> In this connection, during the time when U.S. Senate was discussing on ratification of the ABM Treaty signed in May 1972, John Foster, the then Director of the Defense Research and Engineering of the Department of Defense, expressed his view to the effect that intercepting re-entry vehicles thrusting into the atmosphere at a speed exceeding 2 kilometers per second or shooting down ballistic missiles at an altitude over 40 kilometers was equivalent to intercept of strategic ballistic missiles, which the ABM Treaty tried to restrict. But his view failed to become U.S. official position. See Alexei Arbatov, "The ABM Treaty and Theater Ballistic Missile Defence," Stockholm International Peace Research Institute, *SIPRI Yearbook 1995: Armaments, Disarmament and International Security* (New York: Oxford University Press, 1995), p. 689

<sup>34</sup> Craig Cerniello, "News and Negotiations: U.S., Russia Near Agreement on Lower-Velocity TMD Systems," *Arms Control Today*, Vol. 26, No. 5 (July 1996), p. 19.

<sup>35</sup> For the Moscow agreement, see Arms Control Association, "Selected Documents From the Moscow Summit," *Arms Control Today*, Vol. 25, No. 5 (June 1995), p. 24 and Arms Control Association, "New START II and ABM Treaty Documents," *Arms Control Today*, Vol. 27, No. 6 (September 1997), pp. 21-22.

<sup>36</sup> Amy F. Wolf, *Anti-Ballistic Missile Treaty Demarcation and Succession Agreements: Background and Issues*, CRS Report for Congress (98-496F), May 22, 1998, p. CRS23.

The June 1996 and March 1997 agreements were signed by the United States, Russia, Belarus, Kazakhstan, and Ukraine, in September 1997 as the "First Agreed Statement Relating to the ABM Treaty" which sets forth low-velocity TMD with an interceptor flight velocity of 3 kilometers or less per second and the "Second Agreed Statement Relating to the ABM Treaty" referring to high-velocity TMD with an interceptor flight velocity exceeding 3 kilometers per second.<sup>37</sup>

As seen from the above-mentioned agreed statements, the difference between ABMs intercepting strategic ballistic missiles and those intercepting theater/tactical ballistic missiles is not derived from the capability of interceptor missiles but is determined by the ballistic target-missile's flight velocity or range as well as whether or not the ABM system has carried out tests to shoot down such a ballistic missile. Even interceptors "theoretically" capable of intercepting ballistic missiles with a flight velocity exceeding 5 kilometers per second or with a range exceeding 3,500 kilometers (except space-based interceptor missiles and space-based components based on other physical principles) could be developed and deployed under the title of TMD, whether in air, at sea, or on land unless flight-tested for intercepting such missiles.<sup>38</sup>

## (2) NMD Program

Under the Clinton administration, the NMD program, designed to defend all the fifty American states, was not a priority and was merely a subject of technological research and development. This was because the threat of ballistic missiles from rogue states to the U.S. mainland was deemed not imminent. Toward the end of the administration, however, NMD development and deployment also came to be hastened not only due to a rise of threat of long-range ballistic missiles from states of concern to the U.S. mainland, as indicated by North Korean firing of a three-staged ballistic missile in August 1998, but also in consideration of the request from Congress for earlier deployment of NMD. According to the NMD deployment program disclosed in October 1999, the Clinton administration's NMD system to be deployed by 2005-2006 was designed to counter 20-30 warheads equipped with rudimentary NMD penetration aids. The NMD system was planned to feature the following: (a) 100 intercept missiles to be based in Alaska, (b) an X-band radar installed on Shemya Island of the Aleutian Islands, (c) improved ballistic missile early warning radars, and (d) Space-Based Infrared System-High Earth Orbit.<sup>39</sup> Furthermore, the Clinton administration planned to upgrade the NMD system by

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<sup>37</sup> For further details, see Arms Control Association, "New START II and ABM Treaty Documents," pp. 21-22.

<sup>38</sup> Laser, which is one of "(intercept) components based on other physical principles," can be developed/deployed if it is not of a space-based but an air-borne type, as suggested by the second agreement.

<sup>39</sup> Walter B. Slocombe, Under Secretary of Defense for Policy, Testimony to the House Armed Services Committee, October 13, 1999.

around 2010-2011, capable of intercepting 20-30 warheads with more advanced NMD breakthrough aids, through an increase in the number of interceptor missiles and X-band radars and the deployment of Space-Based Infrared System-Low Earth Orbit.<sup>40</sup>

The Clinton administration pursued research and development of NMD in a way not violating the ABM Treaty.<sup>41</sup> The Clinton administration's NMD program was not a missile defense program that squarely challenged the purpose and objective of the ABM Treaty: as a limited missile defense program it was not intended to confront large-scale strategic ballistic missile attacks from Russia. However, it required the ABM Treaty to be amended prior to the stage of deployment, since the system aimed to protect the entire fifty U.S. states from the threat of ballistic missiles. Believing that the ABM Treaty was the cornerstone for U.S.-Russian strategic stability and reduction in strategic offensive forces, the Clinton administration considered it possible to amend the ABM Treaty in a way that enables both the preservation of the basic tenets of the ABM Treaty and the deployment of NMD to counter limited ballistic missile threats from the states of concern.<sup>42</sup>

Russia, however, was reluctant to sit at the table of negotiations for the amendment of the ABM Treaty. Although the NMD program pursued by the Clinton administration was to protect the U.S. from ballistic missile attacks by rogue states, NMD, once deployed, could invariably intercept ballistic missiles reaching the U.S. from whatever countries. This would result in a capability to intercept Russian ICBMs. Russia was afraid that U.S. NMD might turn out to be able to damage Russian nuclear deterrent vis-à-vis the United States, depending upon the scale or intercepting capability of NMD and survivability of Russian ballistic missile force. Russia also feared that political pressure within the U.S. for an additional buildup of NMD would increase once deployment of a NMD system commenced, since actual deployment of NMD system meant an attainment of ABM capabilities and technologies. Furthermore, considering that its own strategic ballistic missiles were becoming obsolete as well as decreasing in number, Russia seemed to have considered that U.S. deployment of NMD, even though limited, might weaken Russia's deterrent against the U.S. and thus it continued to strongly oppose any amendment to the ABM Treaty.<sup>43</sup>

China also strongly opposed NMD as possibly directly endangering its

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<sup>40</sup> Ibid.

<sup>41</sup> Ibid. Also see Army F. Woolf and Steven A. Hildreth, *National Missile Defense: Issues for Congress*, CRS Issue Brief (IB 10034), December 17, 1999, p. 5.

<sup>42</sup> Slocombe, Under Secretary of Defense for Policy, Testimony to the House Armed Services Committee, October 13, 1999.

<sup>43</sup> In mid-November, 2000, however, Vladimir Yakovlev, commander in chief of Russian Strategic Rocket Force, once suggested his willingness to amend the ABM Treaty by proposing a new arms control method of setting tie-in upper limit to the deployment of strategic offensive missiles and intercept ones, requiring a decrease in the latter in exchange for an increase in the former or vice versa. See *The Washington Post*, November 14, 2000 or *Asahi Shimbun*, November 14, 2000 (morning edition).

strategic security. If the Clinton administration deployed 100 intercept missiles in Alaska to protect its mainland as scheduled, China's ICBM capabilities of only some 20 single-warhead ICBMs might become unable to be used even as a means of intimidation, not to speak of as a deterrent to the United States.<sup>44</sup> China accused the United States of seeking world hegemony in the 21<sup>st</sup> century by ensuring its absolute security through NMD deployment and of not only nullifying previous achievements in arms control and disarmament but also triggering an arms race. China was also apprehensive that U.S. deployment of NMD would delay China's acquisition of a reliable deterrent to the United States, which might make Taiwan more independence-oriented.<sup>45</sup>

## 5 Missile Defense of the Bush (Junior) Administration

The new Bush Republican administration, inaugurated in January 2001, has been enthusiastic in development and deployment of missile defense, whether NMD or TMD. Concerning NMD system, shipboard, air-borne, and even space-based intercept systems seem to be included in an envisaged multi-layered missile defense network, in addition to the fixed land-based intercept system pursued by the Clinton administration.<sup>46</sup> On the other hand, the Bush administration has avoided making demarcation between NMD and TMD and has expressed its intention to develop missile shield under the collective title of "missile defense," while stressing the effectiveness of sea-based and/or air-borne "boost-phase intercept system."<sup>47</sup> The Bush administration, however, still fails to concretely identify the architecture of MND at this time of October 2001 after as many as nine months from its inauguration. This is probably because it is attempting to develop and test a variety of NMD technologies to find a workable system and is not confining itself to the fixed land-based intercept system designed by the Clinton administration. Accordingly, depending upon the Bush administration's judgment on the progress of missile intercept technology, there is a possibility that a large-scale missile defense system may be deployed.<sup>48</sup> Moreover, Secretary of Defense Donald Rumsfeld and others

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<sup>44</sup> Firing of four interceptor missiles is typically assumed to intercept one warhead carried by ICBM.

<sup>45</sup> For China's view of and criticism against the Clinton Administration's NMD program, see The Peoples' Republic of China, the Information Office of the State Council, "2000-nen no Chugoku no Kokubou" [China's National Defense in 2000], *Pekin Shuhou* [The Beijing Weekly], No. 40 (2000), p. 31; The Monterey Institute of International Affairs, Center for Nonproliferation Studies, "EANP Factsheets: China's Opposition to US Missile Defense Programs," (<http://cns.miis.edu/cns/projects/ealp/fact/chinamd.htm>) (September 5, 2000); Banning Garret, "Facing the China Factor," *Arms Control Today*, Vol. 30, No. 8 (October 2000), p. 14.

<sup>46</sup> Ronald T. Kadish, Director of the Ballistic Missile Defense Organization, "The Ballistic Missile Defense Program," prepared testimony on ballistic missile defense policies and programs in review of the Defense Authorization Request for Fiscal Year 2002, U.S. Senate, Committee on Armed Services, July 12, 2001.

<sup>47</sup> The U.S., White House, "Remarks by the President to Students and Faculty at National Defense University," May 1, 2001, (<http://www.whitehouse.gov/news/release/2001/05/text/20010501-10.html>) (May 2, 2001).

<sup>48</sup> One American researcher points out a possibility of as many as about 1,000 interceptor missiles being

stress the necessity for research and development of space-based defense capabilities to protect vital assets for such missile defense including various satellites and space-based sensors from anti-satellite (ASAT) weapons.<sup>49</sup>

Furthermore, the Bush administration's missile defense program, unlike the Clinton administration's one, goes beyond the policy of "counter-proliferation" that confronts the threat of ballistic missiles from rogue states. In his speech given at U.S. National Defense University on May 1, 2001, President Bush stated that the ABM Treaty based on U.S.-Russian rivalry has lost its reason for existence, since Russia is no longer the enemy of the United States, and that the administration would develop a "new strategic framework" to supercede the ABM Treaty, namely a strategic framework no longer based on mutually assured destruction (MAD).<sup>50</sup> It has been further claimed that the approach to the handling of the ABM Treaty will be (a) the Treaty will be abandoned together with Russia; (b) if Russia disagrees to this, the U.S. would work with Russia to issue a joint U.S.-Russian declaration to permit missile defense, and (c) if Russia also opposes this, the United States was prepared to leave the ABM Treaty.<sup>51</sup> This contrasts with the Clinton administration's style to take the ABM treaty as the cornerstone for U.S.-Russian strategic stability, only seeking to amend the treaty necessary for limited deployment of NMD.

The Bush administration's advocacy of a strategic framework that denies the MAD/ABM regime is reminiscent of the Regan administration's Strategic Defense Initiative (SDI). MAD is neither a doctrine nor an intentionally worked out strategy as indicated by its process of establishment. It is a kind of strategic fact resulted from the build-up of ballistic missiles that are difficult to defend against.<sup>52</sup> And this MAD regime was confirmed legally and institutionalized by the ABM Treaty that was concluded in parallel with SALT-I in May 1972. The primary purpose of the ABM Treaty was to stabilize mutual deterrence by banning ABM systems that could protect the U.S. and Soviet homelands from ballistic missile attacks and thereby assuring the

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deployed under the Bush Administration's NMD program. See Michael O'Hanlon, "Double Talk on Missile Defense," *The Washington Post*, July 31, 2001.

<sup>49</sup> Walter Pincus, "From Missile Defense to a Space Arms Race?" *The Washington Post*, December 30, 2000.

<sup>50</sup> The U.S., White House, "Remarks by the President to Students and Faculty at National Defense University." The strategic framework advocated by the Bush Administration is outlined as follows. First, the framework is not based on the ABM Treaty. Hence, it says, MAD institutionalized under the ABM Treaty is no longer assumed to be part of U.S. deterrence policy, although it admits the undeniable importance of retaliatory nuclear capabilities. Four items listed as concrete components of the new strategic framework are: (a) substantial reduction of offensive nuclear capabilities, (b) international cooperation for missile defense, (c) strengthening of non-proliferation and counter-proliferation policies, and (d) enhancement of trust and transparency. See the U.S., White House, "Questions and Answers Related to Principal Themes on Missile Defense" (<http://www.ceip.org/files/projects/npp/resources/EmbassyCableNMD.htm>) (July 27, 2001) and The U.S., White House, "Principal Themes on Missile Defense," (<http://www.ceip.org/files/projects/npp/resources/EmbassyCableNMD.htm>) (July 27, 2001).

<sup>51</sup> Alan Sipress, "U.S. Will not Seek to Alter ABM Treaty," *The Washington Post*, July 25, 2001.

<sup>52</sup> For instance, see Union of Concerned Scientists, *The Fallacy of Star Wars* (New York: Vintage Books, 1984), p. 4 and Frank C. Carlucci, *Annual Report to the Congress FY 1990* (Washington, D.C.: U.S. Government Printing Office, 1989), p. 36.

effectiveness of the opponent's retaliatory attacks with strategic ballistic missiles.

According to Glaser and Fetter, however, the United States has since the Cold War never preferred retaliatory deterrence to defense.<sup>53</sup> To be sure, mutual deterrence removed incentives for a preemptive attack by assuring an opponent's nuclear retaliation but it also meant acceptance of the nuclear threat as a given. In other words, people of countries experiencing a relationship of mutual deterrence are both forced to bear the fear and frustration of inescapable dependence of one's security simply upon the other's rational judgment.<sup>54</sup> If one has such a threat overhead, trying to remove it is intrinsically human. Even though, technology-wise, mutual deterrence based on the assurance of retaliatory strikes is the only strategy available, its aspects stand in such contrast with human nature that it unavoidably invites criticism and opinions preferring denial capabilities to retaliatory ones as the foundation for deterrence.

Criticism is also posed to MAD-based nuclear deterrence from an ethical point of view. Deterrence strategy based on retaliatory nuclear attacks is inevitably accompanied by mass murder of citizens even using strict counterforce retaliatory attacks, not to speak of countervalue retaliatory attacks. Retaliatory deterrence is not so different metaphorically from declaring a policy to kill at the last moment a possible murderer's child taken as the hostage to prevent a murder being committed.<sup>55</sup>

As mentioned above, the MAD/ABM regime suffers from inherent defects. Nevertheless, it seems more or less unpersuasive and unreasonable for President Bush to deny MAD/ABM under the present situation. First, President Bush firmly declares that the U.S. and Russia are no longer hostile to each other, but is it really true? If Russia, like the Bush administration, thinks that the U.S. and Russia are no longer adversarial with each other, why has it continued opposing to America's limited NMD program, despite that exclusion of Russia from its coverage was repeatedly assured from days of the Clinton administration? The greatest reason for this, as already mentioned, is Russia's apprehensions that its deterrent vis-à-vis the United States may be weakened by NMD. Although Russia no longer looks upon the U.S. as an enemy, it must presumably have reserved the view that present U.S.-Russian bilateral relations are not fully matured and have the potential to return to a hostile relationship for some reason in the future.

Second, MAD is not an intentionally worked out policy as pointed out earlier. It is a strategic fact resulted from the development and build-up of ballistic missiles

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<sup>53</sup> Charles L. Glaser and Steve Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," *International Security*, Vol. 26, No. 1 (Summer 2001), p. 61.

<sup>54</sup> For a brief description on this point, see Harold Brown, "The Strategic Defense Initiative: Defensive Systems and the Strategic Debate," *Survival*, Vol. 27, No. 2 (March/April 1985), p. 56.

<sup>55</sup> For instance, see George H. Quester, "The Future of Nuclear Deterrence," *Survival*, Vol. 34, No. 1 (Spring 1992), p. 79.

that are hard to be protected from. Denial of MAD, therefore, first requires the largest possible reduction of nuclear weapons and ballistic missiles that are the major means of delivery. Alternatively, breakaway from MAD should not be discussed until NMD attains a favorable cost-performance ratio against ballistic missiles thereby not only nullifying the military significance of ballistic missiles but also showing a way to drastic reductions of such missiles. Today, however, both the U.S. and Russia continue to deploy a number of strategic ballistic missiles able to strike each other at almost the same level of readiness as during the Cold War. Meanwhile, NMD is now simply at the research and development stage and it is uncertain whether or not development and deployment of a highly capable NMD will be successful. In this way, the current U.S.-Russian strategic relationship is still virtually dictated by MAD and, unless this is substantially changed, the significance of the ABM Treaty will continue to exist.

Hence, the meaning of the ABM Treaty still remains. As mentioned above, however, the Bush administration envisages earlier departure from the ABM Treaty. This is because Article 5 Paragraph 1 of the ABM Treaty prohibits development, testing, and deployment of sea-based, air-borne, space-based, and mobile land-based ABM systems and their elements and, if kept observed, will prevent the Bush administration from further developing and testing missile defense for elements of the NMD designed by the Bush administration. Unilateral abrogation of the ABM Treaty, however, may possibly bring about larger disadvantages than the security advantages that can be expected from the deployment of NMD. Russia may, as it ever warns, try to retain ICBMs carrying multiple, independently-targetable reentry vehicles (MIRV) by quitting START-II. The country is also assumed to take an adversarial posture against NATO if U.S.-Russian relations worsen and may discard, should it be deemed necessary, the Intermediate-range Nuclear Force (INF) Treaty or re-deploy tactical nuclear capabilities.<sup>56</sup> European NATO nations seek deployment of NMD through the amendment of the ABM Treaty or through some substitute U.S.-Russian agreement, only because they fear that such Russian actions might trigger the collapse of the nuclear arms control and disarmament regime.<sup>57</sup>

Of course, it cannot be categorically said that Russia will take above-mentioned countermeasures. This is not only because Russia cannot financially afford to maintain large-scale strategic nuclear forces but also because it gains little from a hostile relationship with the U.S. and European NATO nations.

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<sup>56</sup> For Russia's countermeasures against U.S. unilateral departure from the ABM Treaty and NMD deployment, the see Alexander A. Pikayev, "Moscow's Matrix," *The Washington Quarterly*, Vol. 23, No. 3 (Summer 2000), pp. 187-191; George Lewis, Lisbeth Gronlund & David Wright, "National Missile Defense: An Indefensible System," *Foreign Policy*, No. 117 (Winter 1999/2000), pp. 134-135; J. Peter Scobic & Jennifer Gauck, "News and Negotiations: Russian Officials Continue to Oppose Changes to ABM Treaty," *Arms Control Today*, Vol. 29, No. 7 (November 1999), p. 21.

<sup>57</sup> Jack Mendelsohn, "A Pause in Unilateralism?" *Arms Control Today*, Vol. 30, No. 8 (October 2000), p. 22 and *The New York Times*, Editorial, May 31, 2001.

Nevertheless, unilateral deployment of NMD neglecting Russia's concern would not lead to improvement in U.S. security. For example, in case the U.S. deploys NMD, ignoring Russia's apprehension, Russia may increase the alert level of existing strategic ballistic missile forces such as with the stepped-up "launch on warning" posture to secure its retaliatory capability, thereby increasing the possibility of accidental or miscalculated missile firing. Given that Russia's strategic ballistic missile forces are becoming more vulnerable<sup>58</sup> and early warning systems are rapidly outmoded,<sup>59</sup> the risk of Russia's accidental or miscalculated missile firing could be further increased considerably. Furthermore, any firing as a result of an accident or miscalculation by Russia would involve a significant number of ballistic missiles. Concrete figures on the size of such an attack are lacking but would be reportedly large enough to overwhelm a limited NMD.<sup>60</sup> In a word, Russia is still the only nation that can execute large-scale strategic nuclear attacks on the U.S. mainland. The United States must therefore continue to take cooperative actions with Russia for nuclear armaments if it wishes to maintain security vis-à-vis Russia.

In fact, judging from the debates held within Russia concerning the ABM/NMD issue, there seems to be a possibility of a U.S.-Russian compromise being reached. As noted earlier, some of the Russian government and military officials give an opinion that it is more realistic to win a substantial reduction of U.S. strategic nuclear forces in exchange for Russia's concession to the U.S. in ABM/NMD.<sup>61</sup> Considering that (a) it is difficult to prevent the Bush administration from deploying NMD, (b) Russia cannot afford to strengthen strategic ballistic missile capabilities in opposing to U.S. NMD, and (c) the Bush administration is ready to initiate a substantial reduction of U.S. strategic forces, it may be the only choice for Russia to seek a substantial reduction in U.S. ballistic missile forces in exchange for a concession to deploy only a limited NMD.

In this way, by setting "tie-in" upper limits to the deployment of strategic ballistic missiles and intercept missiles, there is a possibility of finding a point at which the U.S. and Russia can reach some compromise in the ABM/NMD issue. To have such an agreement with Russia, however, the Bush administration must cope with a task of persuasively appealing to the U.S. public for consent about U.S. inferiority to Russia in strategic ballistic missile forces. In addition, the larger the

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<sup>58</sup> It is said that Russia, if it suffers from a preemptive nuclear attack from the U.S. at its current day-to-day alert levels, will have only some 150 remaining warheads. See Glaser and Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," p. 73.

<sup>59</sup> For deterioration of aging Russia's ballistic missile early warning systems, see Bruce Blair and Clifford Gaddy, "Russia's Aging War Machine: Economic Weakness and the Nuclear Threat," *Brookings Review*, Vol. 17, No. 3 (Summer 1999), p. 12.

<sup>60</sup> Daalder et al., "Deploying NMD: Not Whether, But How," pp. 12-13; Glaser and Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," p. 71; Bruce G. Blair & Henry W. Kendall, "Accidental Nuclear War," *Scientific American*, Vol. 263, No. 6 (December 1990), p. 19.

<sup>61</sup> Peter Baker & William Drozdiak, "Russia Alters Tone, Welcomes Talks on Missile Shield," *The Washington Post*, May 3, 2001.

scale of the Bush administration's NMD scheme, the more substantial must be the reduction in U.S. ballistic missile forces and then the proportionally wider, offensive force imbalance between the U.S. and Russia. It is simply unknown whether or not U.S. people will favor a reduction in the U.S. ballistic missile force in order to obtain deployment of NMD. In addition, under the situation where the effectiveness and reliability of the intercept missiles of NMD is uncertain, the criteria for the trade-off between intercept missiles of NMD and offensive missiles may inevitably become a point of controversy. This indicates that, even if a method of solving the ABM/NMD issue is found out, an actual successful solution will not be easily attained at all.

The U.S. and Russia must further take at least the following measures to stabilize mutual deterrence in an environment where NMD is deployed. First, the U.S. is advised to reduce the counterforce capability, the prompt hard-target kill capability in particular, possessed by its ICBM and SLBM. Concrete methods of doing this include loading of nuclear warheads with lesser yield and lowering of the readiness of ballistic missiles.<sup>62</sup> Second, both the U.S. and Russia, particularly the latter, must improve the survivability of ICBM forces such as by converting the ICBM's from a fixed to a mobile basing mode. It is also indispensable to remove vulnerable strategic forces. Third, the United States must secure the survivability of deployed NMD. To make NMD invulnerable, space-based warning and monitoring satellites, functioning as eyes or nerves of an NMD system, must first be protected from ASAT. Yet, there seems to be no concrete protection means available, except launching redundant warning and monitoring satellites.<sup>63</sup> Development and deployment of ASAT, however, remains uncontrolled. Hence, the first step required for securing survivability of NMD is the banning of ASAT.

The impact of U.S. NMD on China is more serious. China deploys as few as about 20 ICBMs that can reach the U.S. homeland and remains concerned over the possibility of conflict over Taiwan. Even if part of the 20 Chinese ICBMs survived a preemptive attack from the United States, the limited NMD designed by the Clinton administration to intercept around 20-30 warheads could nullify China's capability to retaliate against the United States. Worse than this, under the multi-layered missile shield envisaged by the Bush administration, China's ICBM force of as few as 20 missiles could not be used even as a means of intimidation and thus would lose political and military significance against the United States.

Such a U.S.-Chinese imbalance in strategic military power caused by NMD may possibly solidify Taiwan's status quo or, in the worst case, make Taiwan more independence-oriented as long as the U.S. maintains its commitments to Taiwan's security. As China is not a party to the ABM Treaty and does not have any

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<sup>62</sup> Glaser and Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," p. 79.

<sup>63</sup> *The Economist*, July 28, 2001, p. 72.

opportunity for a trade-off under the Treaty, NMD deployment by the United States might be tantamount to forcing China to abandon Taiwan. If China wishes to maintain a nuclear deterrent to the United States to sustain its hope for unification of Taiwan, it will be forced to prepare a military capability to attack NMD systems or strengthen its ICBM force to overwhelm U.S. NMD.

As Europe is less affected by China's nuclear capabilities, many of the possible negative problems for that continent created by NMD will be resolved if the U.S. and Russia can reach an agreement concerning NMD and the ABM Treaty. In East Asia, on the other hand, China's nuclear arsenal carries a large weight in regional security. If U.S. NMD leads China to increase its nuclear and missile capabilities, which is likely, then NMD could have a considerable impact on the East Asian security order. Moreover, since the present limited Chinese ICBM force does not seem to enjoy survivability against U.S. strategic nuclear forces, China can be assumed to gradually reinforce its ICBM capabilities regardless of the policy the U.S. may take towards NMD.<sup>64</sup> But NMD may only quicken the pace of China's buildup of its ballistic missile force. Although it is presently unknown if China will actually accelerate an increase in its ICBM force in the wake of NMD deployment,<sup>65</sup> U.S.-Chinese strategic dialogue on NMD must be deepened in order to avoid such an acceleration. Close strategic talks on NMD, though they cannot completely remove Chinese fears about U.S. NMD, would at least impress Chinese leaders that the U.S. gives due consideration to their security concern, thereby helping avoid the possible advent of tense rivalry.

One effective measure to relieve Russian and Chinese concern over U.S. NMD program can be found in the boost-phase intercept system that the Bush administration attaches importance to as part of its missile defense program. The boost-phase intercept system is designed to intercept a missile on its ascending phase as the rocket engine is burning. Of the shipboard, land-based, air-borne, or space-based boost phase intercept systems, the first two can hardly intercept ICBM launched from deep within Russian and Chinese territory or SLBM fired far from the boost-phase intercept system and may hopefully mitigate Russian and Chinese concern over missile defense.<sup>66</sup> Thus the development and deployment of sea

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<sup>64</sup> For a similar view, see Brown, "Where Do We Go From Here?" p. 12.

<sup>65</sup> Some of the Chinese government authorities imply their preference of development of a weapon system against NMD itself to an increase in ballistic missile force. See Michael R. Gordon, "China Looks to Foil U.S. Missile Defense System," *The New York Times*, April 29, 2001.

<sup>66</sup> See Glaser and Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," pp. 52-54; Brown, "Where Do We Go From Here?" p. 13; James Lindsay & Michael O'Hanlon, "Rapid Deployment on Missile Defense is a Bad Idea," *The International Herald Tribune*, December 27, 2000; Dean A. Wilkening, "Amending the ABM Treaty," *Survival*, Vol. 42, No. 1 (Spring 2000), p. 40; and Richard L. Garwin, "The Wrong Plan," *The Bulletin of the Atomic Scientists*, Vol. 56, No. 2 (March/April 2000), p. 36. Concerning space-based or air-borne boost-phase intercept systems using laser and other interceptors, we must note not only technological difficulties (Garwin, "The Wrong Plan," pp. 39-40) but also a potential for intercepting ICBMs of China and Russia (Glaser and Fetter, "National Missile Defense and the Future of U.S.

and/or land-based boost-phase intercept systems should be the primary focus for NMD, considering the negative impact that mid-course or terminal-stage intercept systems would have on China and Russia.

Moreover, in terms of intercept efficiency, a boost-phase intercept system excels over a system that intercepts warheads in the mid-course or the terminal stage of their flight path after they have separated from the missile. Boost-phase intercept need not shoot down warheads separated from a ballistic missile but the missile itself and is therefore unable to be defeated by decoys (dummy bombs) and chaff (metal pieces to disturb sensor detection). The brightness and comparatively low velocity of a burning missile at the boost stage makes it easier to detect and destroy if the problem of short reaction time from ballistic missile firing detection to interception can be overcome. A boost-phase missile defense's protection coverage is more extensive than a mid-course intercept system. Boost-phase missile defenses can counter the entire spectrum of ballistic missile threats, intercepting both long-range missiles that threaten the U.S. mainland or medium and short-range missiles able to reach allied countries.

As mentioned above, a boost-phase intercept system has advantages over other missile defense means. However, in order to field missile defense with an intercept rate as high as possible, deployment of mid-course and terminal-stage intercept systems to engage missiles and their warheads missed by the boost-phase missile defense system are necessary. In particular, the shorter boost phase of theater and tactical ballistic missiles would make interception at this stage less likely. For this reason, missile defense against theater ballistic missiles will bring to the fore the role of mid-course or terminal phase defense, including NTWD.

## 6 Japanese Missile Defense

In the wake of Nodong missile launch by North Korea in May 1993, interest in joint U.S.-Japanese studies towards missile defense for Japan increased. In December of that year, Japan (with the assistance of U.S. findings) conducted preliminary research and investigation on the technical feasibility of upper-tier missile defense to obtain the necessary information and materials for judging the propriety of development and deployment of a missile shield. North Korea's firing of a multi-staged ballistic missile across Japan in August 1998 led both the U.S. and Japanese governments to stress the importance of missile defense and to agree in the following month upon the "pursuit of joint technical research"<sup>67</sup> on missile defense.

The missile defense system covered by U.S.-Japanese joint technical studies is NTWD. The following factors were behind NTWD selection. Land-based systems

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Nuclear Weapons Policy," p. 54).

<sup>67</sup> "Joint Announcement" by U.S. and Japanese cabinet ministers in charge of foreign affairs and defense after the U.S.-Japan Security Consultative Committee meeting held on September 20.

such as THAAD require the acquisition of necessary land space for their basing while sea-based missile defense like NTWD can avoid such problems. Furthermore, as Japan had already deployed Aegis-equipped warships, the selection of the Aegis-based NTWD was very natural. Compared with THAAD, NTWD also benefited from more room left for technical research and development and was thus considered as a suitable subject of studies in improving Japan's technical capacity.

Although the threat of ballistic missiles from rogue states to the United States has yet to become a reality,<sup>68</sup> U.S. allies like Japan located around states of concern are already exposed to the threat of ballistic missiles, as indicated by North Korea's missile firings. Japan has long discarded the choice of developing an indigenous retaliatory deterrent and has been entirely dependent upon U.S. extended deterrence. As noted earlier, however, it cannot always be assumed safe only to depend upon the retaliatory deterrence provided by the United States to deal with rogue states that deploy invulnerable WMD-armed ballistic missiles.

A missile defense system that covers Japan would have the following significance. First, it can negate hostile states' attempt to utilize WMD-armed or dummy WMD-armed ballistic missiles as a means for political coercion vis-à-vis Japan. Japanese people have considerable fears for WMD since they have experienced the terror of attacks by nuclear weapons and sarin gas. Hostile states may attempt to take advantage of this psychological weakness of the Japanese people to exert an influence on Japan. North Korea in particular (or China should it becomes hostile to Japan and the United States) may use ballistic missiles as a means to intimidate Japan in order to discourage it from cooperating U.S. forces during a contingency on the Korean Peninsula (or between China and Taiwan). Missile defense can be a means to counter such intimidation. A North Korea defeated by U.S.-South Korean forces and at the brink of collapse may also possibly intimidate Japan and South Korea through biological and chemical weapons-armed missile attacks to halt further military actions of U.S.-South Korean forces. Again the missile defense covering Japan could counter such intimidation.

Second, a missile defense that covers Japan also protects U.S. forces in Japan from ballistic missile attacks, helping U.S. forces undertake flexible military operations. In order to ensure U.S.-Japan security cooperation and to maintain the reliability of U.S. extended deterrence for Japan, it must be avoided by all means that U.S. forces in Japan are taken as a hostage of ballistic missile threat from any states of concern.

Third, as mentioned before, once a conventional war has commenced it is not

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<sup>68</sup> According to the analysis revealed in the "Rumsfeld Commission" report issued in July 1998, however, North Korea and Iran will develop a ballistic missile placing the United States within its reach by around 2003 at earliest. See "Executive Summary of the Report of the Commission to Assess the Ballistic Missile Threat to the United States," July 15, 1998, p. 3.

easy to successfully practice "intra-war deterrence." It will also be difficult to deter the use of conventionally armed ballistic missile in such a conflict. The military significance of ballistic missiles armed with conventional weapons is largely dependent upon their accuracy. If the circular error probable (CEP) of ballistic missile is around 1 kilometer, its military effects are insignificant, aside from its effects as a means for political terrorization. The higher the accuracy, however, the greater becomes its military significance. For example, if rogue states deploy ballistic and cruise missiles capable of striking Japan's political center or nuclear power plants scattering along the coast of the Japan Sea, Japan and the United States could be inversely deterred. Considering that states of concern's achievement of higher accuracy for ballistic missile will only be a matter of time, it may well be a pressing necessity for Japan to develop a missile shield against ballistic missiles.

Fourth, Japan is not only within their reach of missiles from North Korea. Chinese and Russian missiles can also strike Japan. The number of ballistic missiles possessed by North Korea and China has increased. The larger the number of ballistic missiles deployed; the greater the possibility of accidental and unauthorized launches. Only missile defense seems able to cope with such threats or actually launched ballistic missiles.

Japan's missile defense development and deployment is also expected to bring about the following advantages. If the deployed missile defense system is not only highly survivable but also very capable of intercepting missiles, it reduces surrounding countries' incentive to increase missiles and would serve to prevent proliferation and the expansion of the ballistic missile threat. In addition, Japan has started joint technical research on NTWD with the U.S. and such joint research will deepen mutual exchange of defense technologies between the two countries, strengthening the foundations of the U.S.-Japan alliance.

China, not to speak of North Korea, has taken a critical posture against Japan's research on missile defense. Russia also criticized the technical research on NTWD pursued by the U.S. and Japan despite its signing of the 1997 TMD demarcation agreements that have paved the way for development and deployment of TMD systems. Since 2001, Chinese criticism has been toned down, but contents of previous Chinese, North Korean, and Russian criticism can be summarized into the following five points.<sup>69</sup> First, NTWD covering Japan will spark an arms race in East Asia,

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<sup>69</sup> For summarized information about Chinese criticism, see The Monterey Institute of International Affairs, *Theater Missile Defense (TMD) in North East Asia: An Annotated Chronology, 1990-Present* (Monterey: Monterey Institute of International Affairs, June 2000); The Monterey Institute of International Affairs, Center for Nonproliferation Studies, "EANP Factsheets: China's Opposition to US Missile Defense Programs." For North Korean criticism, see The Monterey Institute of International Affairs, *Theater Missile Defense (TMD) in North East Asia*, pp. 25, 45, 48, 53, 60. For Russian criticism, see for example, Alexei Arbatov, "The ABM Treaty and Theater Ballistic Missile Defense," Stockholm International Peace Research Institute, *SIPRI Yearbook 1995: Armaments, Disarmament and International Security* (New York: Oxford University Press, 1995), p. 691 and Arms Control Association, "News Brief," *Arms Control Today*, Vol. 29, No. 5 (July/August 1999), p. 31.

deteriorating the regional strategic environment, and at the same time portends Japan's rise into a military power.<sup>70</sup> Second, NTWD has a latent capability to intercept strategic ballistic missiles and thus destabilizes U.S.-Russian and U.S.-Chinese mutual deterrence.<sup>71</sup> Third, NTWD may possibly be used for the defense of Taiwan since it is a mobile shipboard system. Fourth, mutual transfer of missile technologies between the U.S. and Japan through the joint technical research on NTWD violates MTCR.<sup>72</sup> Fifth, development and deployment of NTWD is politically divisive, creating a new security separation where the United States, Japan, and Taiwan confront China and North Korea.

However, some of these criticisms are not sufficiently persuasive. First of all, it must be pointed out that Japan, including Japan-based U.S. force, has neither ballistic missiles nor WMD warheads to be carried by them. Deployment of missile defense by either one of two countries deterring each other with nuclear-armed ballistic missiles presumably damages the other's retaliating capability, endangering crisis stability, as suggested by the logic of the ABM Treaty. In contrast, the missile defense system covering a country like Japan, which deploys neither ballistic missiles, nor WMD including nuclear weapons, is literally a protective weapon. Whether or not strategic relations with neighboring countries deploying ballistic missiles are destabilized depends upon how each of the countries deploying ballistic missiles responds to missile defenses.

Contrary to the Chinese or North Korean claims, development and deployment of missile defense by a country like Japan that does not have ballistic missiles may moderate an otherwise severe arms race. In Taiwan there have been opinions advocating the deployment of long-range ballistic missiles capable of attacking Chinese main cities as a measure, in addition to missile defense, to counter the threat of China's ballistic missiles.<sup>73</sup> If Taiwan pursues offensive systems, a more severe arms race will take place between China and Taiwan than in the case where Taiwan deploys only missile defense. China and North Korea must recognize that the prime mover of arms race in East Asia is not missile defense program by Japan or Taiwan but their own development and strengthening of ballistic missile forces. Japanese or Taiwanese missile defense programs are simply to cope with an increase in the ballistic missile threat from China and North Korea.

In addition, regardless of Japan's decision on NTWD, China should be seen as committed to reinforcing its ballistic missile force. China's program for the build-up of its ballistic missiles is not dependent only upon Japanese missile defense. Missile capability trends such as in the United States, Russia, and India should also be seen as

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<sup>70</sup> In connection with NTWD, only North Korea criticizes Japan for becoming a military power.

<sup>71</sup> Criticism by both China and Russia

<sup>72</sup> Criticism by China

<sup>73</sup> Arthur S. Ding, "China's Concerns About Theater Missile Defense: A Critique," *The Nonproliferation Review*, Vol. 6, No. 4 (Fall 1999), pp. 96-97.

driving factors for Chinese decision on its missile modernization, in parallel with Japanese missile defense program.

What is more, Japanese NTWD can hardly remove entirely China's retaliatory capabilities vis-à-vis Japan, considering the geographical proximity between China and Japan and the difficulty in accomplishing a perfect missile defense system. Even if Japan deploys NTWD, China's ultimate nuclear deterrent to Japan should remain. Furthermore, China has declared unconditional nuclear no-first use and equally unconditional negative security assurance.<sup>74</sup> Continual criticism of Japanese research on NTWD may, however, indicate China's intention to target Japan with nuclear missiles. In short, China and North Korea's criticism that Japanese missile defense will aggravate the strategic environment is only due to the fear that their unilateral military advantage over Japan brought by ballistic missile deployments will be endangered.

For additional cause to refute their criticism, both China and North Korea not only deploy and strengthen missile force but also openly continue to export ballistic missiles themselves and related components (North Korea) or are suspected of exporting missile-related technologies and equipment (China).<sup>75</sup> It must be said that these countries' criticism against the pursuit of research on missile defense by a nation possessing no ballistic missiles like Japan is misguided and unacceptable in itself.

Regarding Russia and China's criticism that NTWD has a latent capability to intercept strategic ballistic missiles, a report submitted by the U.S. Ballistic Missile Defense Organization (BMDO) to U.S. Congress in June 1999 surely indicates that NTWD (Block II) may acquire a potential for intercepting long-range ballistic missiles launched by rogue states if it uses a sensor for NMD. And the NTWD may also possibly have the latent intercept capability against Chinese/Russian accidental or miscalculated ballistic missile firing, if the use of a sensor for NMD is combined with high-velocity interceptors and higher tracking capabilities.<sup>76</sup> Russia must, however, remember the TMD demarcation agreements concluded with the U.S. in September 1997. In its second agreed statement that provides for high-speed TMD with a flight velocity of 3 kilometers or more per second stipulates basic principles for the deployment of high-speed TMD, including NTWD.<sup>77</sup> One of these principles bans the deployment of high-speed TMD that poses a "realistic"<sup>78</sup> threat to strategic

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<sup>74</sup> Li Daoyu, "Foreign Policy and Arms Control: The View from China," *Arms Control Today*, Vol. 23, No. 10 (December 1993), p.9 and Fujita & Asada, op.cit., p. 108.

<sup>75</sup> See J. Peter Scoblic, "News and Negotiations: China Issues Missile Export Pledge; U.S. Says It Will Waive Sanctions," *Arms Control Today*, Vol. 30, No. 10 (December 2000), p. 23 and John Pomfret, "U.S. Protests Exports of Missiles by China," *The Washington Post*, July 27, 2001.

<sup>76</sup> U.S. Department of Defense, Ballistic Missile Defense Organization, "Summary of Report to Congress on Utility of Sea-Based Assets to National Missile Defense," June 1, 1999, pp.3-4.

<sup>77</sup> They are the five principles contained in the 1995 Moscow Agreement between the U.S. and Russia.

<sup>78</sup> "Realistic" threat of high-speed TMD to strategic ballistic missiles means, to the best knowledge from the agreed documents, a verified capability of intercepting ballistic missiles with a flight velocity exceeding 5 kilometers per sec or a range of over 3,500 kilometers by conducting intercept testing.

ballistic missiles of the contracting parties to the ABM Treaty. Refuting China's criticism on NTWD, it must be noted that the same BMDO report says that restructuring NTWD program, including new technology development and a large amount of additional budgets, is required to make NTWD capable of intercepting Chinese and Russian strategic ballistic missiles.<sup>79</sup> U.S.-Japan NTWD program is still at the research stage and it cannot be judged whether interceptors used in the NTWD will provide a potential capability to intercept strategic ballistic missiles. The same can apply to the criticism that U.S.-Japanese joint technical research on NTWD violates the guidelines of MTCR.

The importance of cruise missile defense (CMD) must not also be forgotten, even though discussions about missile defense within Japan are concentrated on ballistic missile defense. Cruise missiles are air-breezing, engine-powered homing missiles that fly at a low altitude with aerodynamic lift. Weapons carried by cruise missiles are mainly conventional warheads, but the United States and Russia deploy nuclear-armed cruise missiles. Countries possessing cruise missiles in the world number about 70, of which about 40 are developing countries.<sup>80</sup> Major possessors of cruise missiles in East Asia are Russia, China, and North Korea, of which China and North Korea recently conducted anti-ship cruise missile firing tests.<sup>81</sup> The two countries seem to have been making efforts to modernize their cruise missiles. Present Chinese and North Korean cruise missiles are armed with conventional warheads and predominantly anti-ship missiles, but China and North Korea may deploy land-attack cruise missiles carrying nuclear warheads (China) and chemical warheads (North Korea) in the future.

Cruise missiles are cheaper as well as easier to be made more accurate and longer-ranged than ballistic missiles.<sup>82</sup> Similarly, it is also more suitable for carrying chemical weapons than ballistic missiles.<sup>83</sup> North Korea's cruise missiles are anti-ship missiles with Chinese HY-2 Silkworm cruise missiles as its prototype but, if improved for land attack purposes through the extension of their range as well as improvement of accuracy, may also presumably pose great threat to Japan. For example, when an armed conflict occurs on the Korean Peninsula, North Korea may try to intimidate Japan, using chemical weapons-armed sea- or air-launched cruise

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<sup>79</sup> Ballistic Missile Defense Organization, "Summary of Report to Congress on Utility of Sea-Based Assets to National Missile Defense," p.4.

<sup>80</sup> Dennis M. Gormley, "Hedging Against the Cruise-Missile Threat," *Survival*, vol. 40, no. 1 (Spring 1998), p. 95.

<sup>81</sup> China conducted test-firing of SS-N-22 anti-ship cruise missiles bought from Russia in the middle of September 2001. SS-N-22 has a range of about 130 kilometers and can be loaded not only with conventional warheads but also nuclear ones. (Bill Gertz, "China Tests Supersonic Anti-Ship Cruise Missiles," *The Washington Times*, September 25, 2001.) North Korea also conducted test-firing of anti-ship cruise missiles with a range of about 160 kilometers in July 1994. Dennis M. Gormley, *Dealing with the Threat of Cruise Missiles*, Adelphi Paper 339, (New York: Oxford University Press, 2001), pp.27-28.

<sup>82</sup> Gormley, "Hedging Against the Cruise-Missile Threat," p. 95.

<sup>83</sup> *Ibid.*, p. 96.

missiles, to hold back Japanese assistance to U.S. forces.

The PAC-3 system under development as part of U.S. TMD programs is supposed to have some capability to intercept cruise missiles. Cruise missiles, however, cannot always be captured by radar since they are, unlike ballistic missiles, homing missiles that fly at a low altitude. Furthermore, the launch of a cruise missile is extremely difficult to detect and firing positions are not fixed. For that reason, in addition to PAC-3 other defensive measures must be taken. One effective measure for cruise missile defense is to establish an in-depth layered defense capability for interception along the cruise missile's flight route.<sup>84</sup> Instead of operating interceptors separately from a fighter plane or ground base, the combined operation of air-, land-, and sea-launched intercept missiles through the unified command capability provided by an airborne warning and control system (AWACS) is vital. The present Japanese air defense is enforced separately: low-air space defense by deploying the Ground Self-Defense Force's Hawk missiles; high-air space defense with PAC-1/PAC-2 operated by the Air Self-Defense Force; and maritime air defense by the Maritime Self-Defense Force, mainly with Aegis warships. It is, however, desirable to prepare for combined operations utilizing some of these three forces' air defense capabilities under the direction of an early warning plane or Aegis warship that has recently acquired a unified combat command capability.

## 7 Concluding Remarks

Japanese and U.S. development and deployment of missile defense produces military advantages such as (a) recovering and maintaining U.S. capability to intervene in regional conflicts (NMD/TMD), (b) securing Japan's defense cooperation with the U.S. in case of contingency in the Far East (TMD), (c) improving Japanese and U.S. capability to counter militarily ever more accurate ballistic missiles armed with conventional warheads (NMD/TMD), and (d) adding effect of "deterrence by denial" to result in more reliable deterrent coupled with retaliatory deterrence (NMD/TMD).

As already mentioned, however, it must not be forgotten that missile defense is in essence a double-edged sword. In the current offense-dominant strategic environment a missile shield could either reduce the ballistic missile threat or further increase missile build-up and proliferation, depending on the effectiveness of missile defense as well as the approach of the countries that deploy missile defenses or that are the targets of such defense.

Even if a highly effective missile defense is developed and deployed, it is difficult to completely contain the ballistic missile threat when considering the technological difficulties of intercepting incoming ballistic missiles and their

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<sup>84</sup> Ibid., p. 102.

warheads. Furthermore, research and development of a defensive system in general takes place after the development of offensive systems. Development of defense technology is destined to run after offensive technology and will have difficulty in catching up with the developments in offensive technology. And as long as development of ballistic/cruise missiles continue to be considered superior to that of missile defense in terms of cost-performance ratio, deployment of missile defenses would most likely result only in an increase in offensive missile forces.

Missile defense, however, is the only positive defensive means that can counter missiles that are actually fired. To prevent proliferation and deal with threat of ballistic/cruise missiles, a variety of methods have so far been reviewed and employed, including export restrictions such as MTCR, diplomatic measures including arms control, retaliatory deterrence, and preemptive attacks on missile sites. Despite such measures, development and deployment of missiles will continue as long as it brings military advantages such as unparalleled striking power, diversified combat operations, and attainment of a deterrence capability. To cope with a missile force that enjoys such merits, there are no alternatives to either also deploy missiles to pose a similar threat to the opponent to encourage arms control and disarmament negotiations or deploy missile defense to directly intercept missiles.

(Completed on November 7, 2001)

## Postscript

President Bush, giving up reaching an agreement with Russia over the handling of the ABM Treaty, notified Russia of U.S. unilateral withdrawal from the treaty on December 13, 2001. President Bush's decision to abrogate the ABM Treaty allows the U.S. to develop and test NMD without restrictions under the ABM Treaty after June 13, 2002. At the same time, the "First and Second Agreed Statements Relating to the ABM Treaty," worked out on the basis of the ABM Treaty, will become a dead letter. As a result, a legal framework regulating the development and deployment of TMD disappears. The success or failure of TMD now entirely depends on the technological and financial capacity of the U.S. and countries pursuing the technical research and development programs (such as Japan), and the countermeasures likely to be adopted by China, Russia, and other nations which have opposed to missile defense.

Up to now, the Russian and Chinese reactions to the Bush administration's announcement of departure from the ABM Treaty *have been* somewhat restrained. President Putin referred to U.S. decision to leave the ABM Treaty as a "mistake" but stated that the decision was no threat to Russian security.<sup>85</sup> China also has avoided any statement directly criticizing the U.S. departure from the treaty and has not taken any concrete countermeasures. The Chinese Ministry of Foreign Affairs only published an official statement to the effect that (a) China regards international arms control and disarmament and maintenance of the global strategic stability as extremely important, and (b) China has taken firm and consistent attitude toward the issue of missile defense.<sup>86</sup> There are a couple of reasons for restrained responses by Russia and China: (a) cooperation with the U.S. is, at least in the foreseeable future, indispensable for both countries to sustain economic development; (b) missile defense is still on its development stage and, therefore, how it will actually be deployed is uncertain; and (c) they may be confident, even if missile defense is actually deployed, of military means that can overwhelm missile defense. NMD, however, holds a latent capability to substantially alter U.S.-Russian and U.S.-Chinese power balance, depending upon its intercept capabilities, scale of deployment, and survivability. China and Russia's real attitudes toward U.S. NMD, therefore, will not become apparent until the architecture of U.S. NMD is clearly identified.

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<sup>85</sup> The U.S., White House, "Statement of the Press Secretary, Response to Russian Statement on U.S. ABM Treaty Withdrawal," December 13, 2001.

<sup>86</sup> *Nihon Keizai Shimbun*, December 15, 2001 (morning edition).