

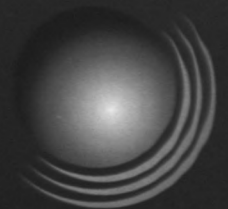
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The NACD: Defence and Deterrence in a Post-ABM World

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PREFACE

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EXECUTIVE SUMMARY

The NACD regime faces no inherent threat from the prospect of a national missile defence system now in development by the United States. Radical changes in the international security environment following the end of the Cold War make it impossible for the United States and its allies to rely on the principles of deterrence alone in order to avoid major military conflict. Due to the alarming proliferation of ballistic and cruise missile technology over the past decade, a combination of defence and deterrence offers the best prospect both of averting conflict and revitalizing multilateral non-proliferation commitments. Missile defences, at the strategic and theatre level, will increasingly become a fact of life in international security. Their technologies can make a contribution to international peace in the short term by ensuring the security of multilateral peace-support operations. Over the long term there is also the prospect that the surveillance technologies inherent in a strategic missile defence system could enhance transparency and confidence-building among potential adversaries --- with the net effect of reducing the appeal of offensive missile capabilities.

THE NACD: DEFENCE AND DETERRENCE IN A POST-ABM WORLD

I-The Missile Threat

The Bush administration's decision in December 2001 to withdraw from the 1972 Anti-Ballistic Missile Treaty (ABM) and to begin the construction of national missile defences (NMD)¹ reflects a fundamental loss of faith in the logic of deterrence underlying U.S. nuclear strategy toward the Soviet Union for most of the Cold War. It is potentially the most important change in global security since the advent of the nuclear arms race, with enormous implications for the international non-proliferation, arms control and disarmament (NACD) regime. Bush's decision was foreshadowed by twenty years of debate about missile defence in United States, but NMD gained a new relevance with the terrorist attacks on the World Trade Center and the Pentagon on September 11, 2001.

The attacks, unprecedented in method and impact, were almost wholly unanticipated by the advocates of missile defence. Still, the proliferation of ballistic missile technology internationally has been a growing concern for the United States over the past decade. That concern has been heightened by the news that China and Russia have sold ballistic missiles to a number of states in Asia and the Middle East, some of which, such as North Korea, have begun to manufacture missiles and related technologies for export. Anxieties increased when it became known that the states which bought such delivery systems were working on weapons of mass destruction (WMD).² North Korea, Iran and Libya now have missiles which could carry WMD, if not to North America at least to American allies in the Middle East and Europe. In the mid-1990s the International Atomic Energy Agency (IAEA) charged that North Korea was reprocessing uranium to manufacture nuclear weapons. In response, Pyongyang expelled inspectors, threatened war, and denounced the IAEA. Then, in 1998 India and Pakistan tested nuclear weapons, further bolstering the position of missile defense advocates critical of the value of arms control agreements to international peace.³

During the 1991 Persian Gulf War, Iraq fired Scud missiles at Israel in order to push Tel Aviv into a military response and so break up the coalition between the Arabs and the Western states.⁴ Whereas a 1989 study of the Asia-Pacific region dealt with the Soviet presence there and only peripherally with Chinese or North Korean ballistic missile capabilities, the experience of Iraqi missile strikes during the Gulf War discredited the traditional arguments against missile defense. It brought attention to the acquisition of missile technology by Third World states willing to use ballistic weapons in a regional conflict and possibly uninfluenced by the deterrent value of the American nuclear forces that had kept the Soviet Union at bay. Iraq was deterred neither from invading Kuwait by any rational calculation of American response nor from attacking Israel with ballistic missiles despite Israel's nuclear capacity and its reputation for swift retaliation. Henry Kissinger, a principal architect of the ABM Treaty, observed that in light of the Gulf War experience, "limitations on strategic defense will have to be reconsidered," because "no responsible leader can henceforth deliberately leave his civilian population vulnerable."⁵ To the Washington policy community supporting the development of missile defenses, a decade's experience in post-Cold War international affairs has demonstrated two things:

- Deterrence theory applied by the United States to the Soviet superpower during the Cold War cannot be applied to emerging Third World states armed with ballistic missiles, not because their leaders are assumed to be less "rational" than that of the Soviet Union but rather because the mutual attention, communication, and understanding developed by

bilateral superpower relations is unlikely to emerge between the United States and the various regimes now possessing ballistic missiles.

- The proliferation genie is out of the bottle. To an alarming extent worldwide proliferation of missile technology, along with the proliferation of WMD, has already occurred, despite non-proliferation agreements such as the 1970 Nuclear Non-proliferation Treaty (NPT), the 1972 Biological Weapons Convention (BWC), the 1987 Missile Technology Control Regime (MTCR), and the 1993 Chemical Weapons Convention (CWC).

Missile defence, in other words, is considered by its enthusiasts to be a response to a security environment *already fundamentally altered* rather than a policy in anticipation of radical change.⁶ The terrorist attacks on civilian and military targets in New York and Washington of September 11, 2001 vindicated rather than undermined this perception. While missile defences could not have prevented the attacks, their impact was to intensify the Bush administration's commitment to national security against a wide spectrum of threat, including missile attack. By linking NMD to homeland security, the Bush administration was able to secure \$7.8B in funding missile defence in the Senate's most recent defence authorization bill.⁷

It is important to note that U.S. determination to proceed with some form of missile defence has survived three administrations, Democratic and Republican, since President Reagan announced the Strategic Defense Initiative in 1983. It has now been given renewed vigor from a fourth. Missile defence has also acquired a constituency outside the United States. The U.K. Missile Proliferation Study Group chaired by Lord Chalfont stated that "the government has failed to find a response to the rapidly maturing missile threat to British centers of population"; their report criticized Britain's 1998 *Strategic Defense Review* for failing to take a more holistic view of the nation's sundry security interests and raised "serious questions about whether British intervention forces can ever be used against an enemy possessing missiles armed with WMD."⁸ In the spring of 2001 Foreign Secretary Robin Cook defended his government's support for U.S. missile defence plans with the observation that the countries of greatest concern with regard to proliferation were already well out of step with the NPT regime. Secretary of Defence Geoff Hoon has since revealed that Blair government's thinking roughly parallels that of the Bush administration.⁹

Due to the comparatively high profile of NMD in the Bush administration's defence goals, it gets the lion's share of public attention and is most often the object of uninformed and contentious debate. However, theatre missile defence (TMD)¹⁰ is in two respects more urgent and significant. First, it is in TMD that the available and emerging technologies approximate a practical answer to existing threats rather than a security vision for potential threats. Second, TMD may be critical to the viability of peace-support expeditionary missions the international community has taken on in the post-Cold War world for which American participation or support has been vital, because "U.S. foreign and national security policies in troubled regions will henceforth be hampered without missile defenses."¹¹ The NATO alliance's "southern strategy" in the Mediterranean could easily face threats from states in the "arc of crisis" running through the Middle East and Northern Africa.¹² Moreover, TMD represents the thin edge of the missile defence wedge, as the first tier of the "layered" missile defence architecture Washington is now pursuing.

II The Symbiosis of Deterrence and Defence

That missile defense has the attention of the United States to a far greater extent than Washington's allies is a product of a half-century's strategic thinking about the peril of nuclear war between the superpowers. In the late 1960s and early 1970s Moscow and Washington

investigated defense systems against missile attack but rejected the option for interrelated reasons of strategic philosophy and technical practicality. The United States adhered officially to the doctrine of Mutually Assured Destruction (MAD), according to which peace between the superpowers was based on mutual vulnerability to nuclear destruction, no matter which side chose to initiate an attack.¹³

The Anti-Ballistic Missile (ABM) Treaty of 1972 was a symbol of superpower stalemate institutionalized by the doctrine of MAD. The attractiveness of the doctrine was always dependent on the fact that the available technology of the time was too primitive to permit the development of an effective defence system. When the Reagan administration unveiled the Strategic Defense Initiative (SDI) in 1983, MAD and the ABM Treaty came under scrutiny, again for reasons philosophical and practical. Ossified thinking about the ABM Treaty made SDI seem radical, because, as Colin Gray captured it at the time, "this was the first presidential endorsement of the idea of defending the country to have been issued in more than twenty years."¹⁴ The administration viewed arms-control agreements skeptically, but it additionally charged that Moscow had violated the ABM Treaty and thus the principle of mutual vulnerability upon which the treaty was based.¹⁵ Equally, the emergence of laser and particle beam technologies, high-speed battle-management computers, and high-grade optics had made the development of strategic and tactical missile defenses more plausible than had been the case a decade earlier. The political momentum behind SDI faded as the Reagan administration and the Cold War drew to a close. The first Bush administration and the Clinton administration both reduced the resources committed to strategic defence and reordered its priorities.

Continuing progress with new technologies alone nonetheless sustained an articulate missile defence policy community in the United States. Because the initial commitment to the ABM had been informed by the technological limitations of the time, a strategic philosophy favoring missile defense capabilities and the revolution in new technologies fed off each other. By the late 1980s security scholars were discussing missile defence with regard to the emergence of China and potential security contingencies over Japan, South Korea, and Taiwan.¹⁶ Their apprehensions were vindicated when in March 1996 China attempted to intimidate Taiwan by conducting missile tests in the Taiwan Strait and the Clinton administration felt obliged to dispatch a naval task force to the region in answer to Beijing's threats.¹⁷ Like North Korea, moreover, China has been an agent of missile proliferation. In the early 1990s the Clinton administration applied economic pressure in order to bring Beijing into compliance with the MCTR yet made only incremental progress in getting China to commit to the "parameters" of the regime. After the terrorist attacks of September 11, the Bush administration sought Beijing's cooperation on anti-terrorist intelligence, law enforcement, and proliferation issues but made little headway, much less a breakthrough.¹⁸

Whereas President Clinton gave only reluctant attention to missile defence --- yet committed a good deal of public rhetoric to the threat of the missile capabilities, not only of revisionist states such as China but also of the "rogue states,"¹⁹ such North Korea, Iran and Iraq --- the administration of George W. Bush has accorded high priority both to NMD in principle and the threat posed by rogue states in particular.²⁰ The reemerging missile defence debate of the 1990s took place against a backdrop of continuing erosion of faith in arms control agreements in the U.S., symbolized most clearly on the Senate's rejection of the Comprehensive Test Ban Treaty in October 1999. The commission report tabled by Donald H. Rumsfeld, now Secretary of Defense, in July 15, 1998 is the cornerstone of the Bush administration's policy on missile defences. Many of the report's concerns are integrated in to the 2001 *Quadrennial Defense Review*.²¹ Together with the congressionally mandated *Nuclear Posture Review*, these reports testify to American

determination to achieve maximum military flexibility in dealing with an international security environment of flux and uncertainty.

As noted above, the September 11 terrorist attacks deepened administration's commitment. The *QDR* announced a refocused and revitalized missile defense program, "shifting from a single-site 'national' missile defense approach to a broad-based research, development, and testing effort aimed at deployment of layered missile defenses" to protect forward-deployed forces, the U.S. homeland, and American friends and allies.²²

Washington's announcement of its withdrawal from the ABM Treaty in December 2001 thus represents the final act in the process of the treaty's eroding relevance to U.S. security priorities in a post-Cold War world, notwithstanding the warnings from Moscow. Prior to the move, the Treaty of Moscow signed by Presidents Bush and Putin in May 2002 possibly testifies to a stronger appreciation of this fact in Russia than has been evident among Washington's Western critics.²³ The ABM made a virtue of necessity, but the emergence of technologies that make missile defense more practically plausible than ever --- combined with the nature of new missile threats --- gives a fundamentally new cast to the issue of responsible security policy. As long as deterrence was the best of the unsavory options, adherence to it was not inherently irresponsible. As one of the more thorough studies of U.S. nuclear policy of the 1990s concludes, "choosing to base deterrence indefinitely on the threat to unleash a nuclear holocaust is immoral" and "a refusal to explore potentially viable alternatives is bizarre."²⁴ The United States is committed to missile defence. Given its resilience from the mid-1980s to the present, it is a prudent assumption that Washington will remain committed to it in one or another form. The practical political question properly concerns what form this will be and where it will lead.

The most frequent assertion made by opponents of missile defence is that the deployment of missile defenses by the United States will provoke a new international arms race. While such a negative response from major powers such as Russia and China is certainly possible, there is no *inherent* threat to internationally accepted non-proliferation principles stemming from the advancement of missile defence technology. A choice for defence is not of itself a choice against deterrence. Having attempted unsuccessfully to persuade the Bush administration to abide by the ABM, President Putin has felt politically compelled not to expand Russia's offensive arsenal but rather to make sweeping cuts to it according to the terms of the Moscow treaty.²⁵ Putin would have preferred a revision of the ABM treaty, but countermeasures such as an increase in offensive weapons would be of little strategic benefit and would be financially onerous for a government dealing with Russia's current problems.²⁶

Additionally, the Russian military and civilian leadership are aware of the nature of Western concerns. As early as 1995 a dangerous trend of proliferation among developing states was well underway. A policy response ought necessarily to supplement traditional non-proliferation mechanisms such as the NPT and MTCR with programs to address the emerging threat directly, including counter-proliferation.²⁷ The MTCR in particular is based on partly erroneous assumptions about what is required to manufacture ballistic or cruise missiles. Prominent among the trends in proliferation of the 1990s is the fact that countries seeking a missile capability need not possess cutting-edge science in order to reach that goal.²⁸ Iraq is not unique. Syria's Scud-B missiles are indigenously produced and have become the backbone of Syria's strategic calculations vis-à-vis Israel. Iran successfully tested a Shihab-3 missile in July while Israeli and Palestinian leaders were negotiating at Camp David.²⁹ Yet while traditional non-proliferation agreements have not contained the growth of the missile threat, they need not be discarded as failures.

A sober approach to missile defence is to view it as one of many responses to the new variety of perceived threats to international peace --- and one that may contribute to a revitalized and renovated non-proliferation principles. First, when deterrence fails, missile defences can offer protection to population centers against the use of missiles armed with WMD. In this case missile defences provide a safety net against deterrence failure, especially when an opponent is armed with only a small number of missiles, the case with most rogue states. They also offer a chance to deter in a less traditional way. Even the limited defense of Israel by U.S. Patriot missiles during the Gulf War prevented Tel Aviv from taking retaliatory action against Iraq --- with possibly catastrophic consequences. Second, the ability to defend forward-deployed forces operating with a NATO or UN mandate against the missiles of a regional belligerent may well become critical to the political will of the international community to project power for humanitarian, peacekeeping, or peacemaking missions. Indeed, a TMD capacity could in time become critical to the very legitimacy among Western publics of multilateral military actions which during the 1990s were considered morally defensible but politically risky. Third, international cooperation on TMD may actually provide a vehicle for improving relations between potential adversaries. Precisely this was once proposed by President Yeltsin and other Russian officials concerned to promote U.S.-Russian cooperation in the area of missile defence. Considered together, these arguments in favor of effective missile defences can contribute to traditional non-proliferation measures, "specifically, by decreasing the military and political utility that many states attribute to missiles," thereby reducing the incentive to acquire them."³⁰ This principle, deterrence-by-denial, essentially denies an adversary the ability to achieve his goals by military means --- or at least blunts the effectiveness of those means.

In the current international environment a choice *between* deterrent and defensive principles is unrealistic and not at all helpful to the beleaguered cause of non-proliferation. In a recent article on the cruise missile threat to the United States Michael O'Hanlon concluded that:

If we rule out, as we should, both technological impossibility and technological inevitability arguments, and if we recognize that resources for defense are far more elastic in national crisis than almost anyone thinks they are in normal times, then the question of cruise missile defense falls into the familiar and proper context of political judgments about competing needs.³¹

Missile defences have something to offer against a tangible and growing peril. Governments need to focus on the question of the fiscal resources and the political capital they are willing to commit in return for the kind of security that missile defences offer now and may offer in the future. They need, in other words, to engage missile defence as political choice, rather than a philosophical argument.

III Missile Defence and Global Surveillance

Under the general label of missile defence, a variety of systems for the detection and interception of missiles at a theatre, regional, and strategic level are currently in research and development. A comprehensive national missile defence "architecture" on the order advocated by the Bush administration is far and away the most ambitious, aiming in principle at an "astrodome" shield for the United States against any and all contingencies of ballistic missile attack. Such a system consists of three elements: boost-phase, mid-course, and terminal phase technologies. Critics of the administration's program, though not of missile defence in principle, point out that the current state of the technological progress across the three elements is uneven³² The U.S. NMD system in development features radar or satellites (detection and early warning); ground-based radars to track warheads and decoys (tracking); and multi-stage, rocket-powered interceptor missiles

launched from underground silos and armed with an exoatmospheric kill vehicle that the interceptor deploys after being boosted to high speed by its rocket stages (interception). Because the kill vehicle does not carry a warhead and is designed to destroy its target by the force of impact alone, absolute precision in identifying the target and distinguishing it from any counter-measure decoys the target might deploy is essential to a successful intercept.

The most reliable element in the system is its early-warning component, composed of radar, satellite or both.³³ A theater system can provide a missile shield in a regionally-specific format and simultaneously represent the first element in a larger missile fence system. There are two principal merits to promoting boost-phase detection on the one hand and TMD on the other — one diplomatic, the other practical. Such a system is least likely to arouse the opposition of China and Russia, while it would offer defence against rogue states with smaller arsenals in those regions where the United States, its allies, and the United Nations are likely to have forces deployed. Hence, TMD can be regarded in the long-term as the thin-edge of missile defence technology because it could well lead to more ambitious plans in a “layered” missile defence architecture. In the short-term it represents the perfect symbiosis of defence and deterrence. It could shield forward-deployed, multilateral expeditionary forces involved in peace-support missions from missile attack in regional settings while leaving nuclear deterrence as the principal stabilizing element between the U.S. and the Chinese and Russian great powers.

Governments with forces involved in humanitarian and peace-support operations should look at TMD carefully. European governments are becoming more sensitive to threats emanating from the “arc of instability” extending from the greater Middle East and Persian Gulf into North Africa. Parts of Northern Europe, after all, are within range of Iranian or Iraqi missiles with a reach of more than 3,500km.³⁴ A TMD system for defense against ballistic missiles with less than intercontinental range would be less contentious politically and diplomatically than a “global” system to shield North America and Europe. A comparatively modest system would involve lower costs, and would entail less pressure on the fiscal resources of participating states, but would also feature the virtue of avoiding the argument that the deployment of a more comprehensive system would provoke with China and Russia over their respective positions in the global strategic balance. A theater-level defense could protect ports and cities against short-range missile attack and, under certain conditions, against strategic missiles. Additionally, it could protect NATO troops deployed in or near conflict zones, the Balkan region coming to mind as a long-term European security mission that could be imperiled or terminated by vulnerability to missile attack. The progress of missile defense technology and the trajectory of change in international security converge on the question of the viability of humanitarian operations, a fact that should focus all sober discussion of missile defense in the present tense to its theater dimension. This is true too for non-European NATO states such as Canada, in light of a continuing Canadian role in international peace-support.³⁵

Among the theatre-level systems which may be able to offer a shield for multilateral peace-support operations are the U.S. Navy’s Aegis system, the Theatre High Altitude Air Defence System (THAAD), the upgraded Patriot (now referred to as PAC-3) and the European Principle Anti-Air Missile System (PAAMS).³⁶ But other systems are in development as well. In June 2001 NATO selected two industrial teams to examine the future of trans-Atlantic cooperation. American collaboration with Germany and Italy on a medium extended air defense system (MEADS) has survived multiple setbacks while Germany, Italy, and the Netherlands are considering a joint effort for developing ship-based tactical missile defense systems, and Italy is pursuing lower-tier defenses with Turkey.³⁷ Much of the political contention inherent in land-based facilities would be circumvented by deploying Aegis technology for theater defense in a multi-layered format. Aegis platforms deployed in the eastern Mediterranean, the Baltic Sea,

English Channel, or North Atlantic would "fill the gap" between forward-deployed systems and U.S.-based midcourse systems for homeland security.³⁸ Moreover, recent studies indicate the threat to expeditionary and peace-support forces may be greater from cruise missiles and unmanned aerial vehicles (UAVs) than from ballistic missiles, in so far as both could be made available to a spectrum of unsophisticated adversaries, ranging from rogue states to drug lords and terrorists.³⁹ But again, the need for a missile shield in regional and theatre settings far exceeds the urgency of NMD.⁴⁰

In a larger, "layered" missile defence system the early warning sensors of TMD could in principle be the first layer of a globally integrated surveillance system. Data from widely dispersed radar installations and space sensors can, after all, be used to provide accurate tracking of any flying object. John Steinbruner has noted that the United States and its allies are for the time being the only countries with the technology and financial resources required to undertake the building of such a global surveillance system, which means that they are also in a position to dictate its purpose.⁴¹ Research in the early warning aspects of missile defence holds out the political promise of transparency and confidence-building among potential adversaries. Space-based surveillance assets are particularly intrusive. "At some point on the spectrum of development not far from what has been accomplished already," Steinbruner points out, "the degree of intrusiveness will introduce new forms of military interaction that will generate new principles of security."⁴² The objections of emerging missile states to global surveillance can be allayed by making them beneficiaries of it. Global surveillance therefore has considerable potential as a confidence and security building mechanism. The signatories of the MTCR should embrace TMD for the purpose of ensuring multilateral intervention operations, while promoting diplomatically the development of a ground and space global surveillance integral to NMD for the purpose of enhancing transparency among states with ballistic missile capabilities. The acceptance or rejection of global surveillance among the emerging missile states could indeed more accurately sort out the "rogues" from the states which have developed missiles solely for defensive and deterrent purposes.

Some sensors are common to a wide variety of civil and military programs now in development, while others are unique to missile defence. A forward-deployed ground-based radar such as X-band radar is multi-functional and supplies target tracking data. High frequency and advanced radar add detailed information in order to distinguish missile warheads from decoys. Upgraded early warning radars (UEWR) are fixed phased array radars capable of detecting and tracking missiles in mid-flight prior to cuing the more accurate X-band. Space-Based Infrared Systems (SBIRS), by contrast, give a missile defence system an over-the-horizon capability to detect a launch long before a ground-based radar can do the same. The point here is that sensor technology for detecting and tracking is diverse and advancing rapidly, while sensor technology for interception is less diverse and less mature. Those who doubt the viability of missile defence doubt above all the reliability of the intercepting kill vehicle, but sensors are make-or-break component of any missile defence system.⁴³

The idea of global surveillance is not new. The first Bush administration proposed a program for Global Protection Against Limited Strikes (GPALS) in 1991. The GPALS program is now obsolete, but the notion of global surveillance for security against WMD deliverable by missiles remains attractive, due particularly to the problem of proliferation. The prospect of terrorist organizations and the states which host them employing crude ballistic missiles has heightened interest in global surveillance and in international cooperation in the pursuit thereof. Russia, a state guilty of both deliberate and inadvertent proliferation yet equally troubled by terrorists and rogue regimes armed with missiles could play a pivotal role in this regard.⁴⁴ At present collaboration between the United States and Russia is represented by the Russian-American

Observations Satellite (RAMOS) project, the successor to GPALS. Lieutenant General Ronald T. Kadish, the Director of the U.S. Missile Defense Agency, describes RAMOS as a “space-based remote sensor research and development initiative that engages Russian early warning satellite developers in the joint definition of aircraft and space experiments.”⁴⁵ The RAMOS project has had troubled history due in part to changing definition of its purpose on both sides. Still, Russia was recently cited by Deputy U.S. Secretary of Defense, Paul Wolfowitz, for its potential in sharing early warning data and joint development of missile defence technologies.⁴⁶

Moreover, the possibilities for international collaboration in early warning and space sensors is significant in light of the nascent state of new and diverse technologies and problems embedded in even the most favored programs. The SBIRS project pursued by the Pentagon since the mid-1990s is plagued by cost overruns, funding instability, management conflicts and “poorly prioritized system requirements.”⁴⁷ The last item, translated from bureaucratic jargon, means that the various branches of the U.S. military and intelligence services have piled on requirements for SBIRS to the extent that its mish-mash of tasks imposes complications on the system’s technology. In the spring of 2002 parts of the project were in danger of outright cancellation.⁴⁸ There is sufficient reason to believe that the early-warning and space-based sensors aspects of the NMD program will be subject to changing priorities.

Moreover, the United States will also be faced with a choice between expenditure on replacing its offensive nuclear systems and improving its NMD capacity, all at the same time as it shoulders the costs of the war against terrorism at home and abroad. The demonstrated appetite of the Bush administration for unilateralism can and will be mitigated by the mounting financial and political burden of challenges facing it. But equally, the trend of change within the NACD regime will be toward growing acceptance of missile defence as a fact of life rather than a de-stabilizing hypothesis. A sea change is underway in international thinking about security from nuclear arms and other weapons of mass destruction. It will progressively feature a greater balance between the principles of deterrence and defence as positive agents in the cause of non-proliferation.

Viewed from this perspective, there is no inherent threat to the NACD regime stemming from the advancement of missile defence technology. Indeed, if the research and development of such technologies is combined with a diplomacy stressing its potential benefits to global security, missile defence can give a much-needed new life and practical prescience to arm control.

IV Conclusion: Diplomacy over Theology

Missile defence should be approached in terms of its possible political and diplomatic benefits rather than from the theological perspective common to its enthusiasts and its detractors alike. Countries with an interest in multilateral peace-support operations have a stake in TMD systems to ensure the safety of interventionist missions against ballistic and cruise missile attack; the shortcomings of the MTCR, meanwhile, makes the development of the global surveillance technologies integral to NMD of equal long-term interest to countries with a strong arms-control tradition. Canada, a country with a continuous commitment to overseas peace-support — yet also a country sharing coastline and airspace with the United States in a way which applies to no other NATO ally --- can afford neither to evade the challenge missile defence poses nor to pass up the opportunities it offers.

Missile defence, whatever its incarnation, cannot provide the United States or its allies with hermetic security from WMD, but Washington’s commitment to it is firm. The Bush administration’s thinking on the precise architecture for such a system remains unclear. The ambiguity has more to do with the relative immaturity of much the available technology as with a

lack of forthrightness regarding the administration's intentions.⁴⁹ Moreover, American interpretations of the potential threats to the United States and its allies have broadened so radically since September 11 that the rank order of NMD among Washington's defence and security priorities is anything but immutable. Prior to the September 11 attacks a poll conducted by the Pew Research Center indicated that public opinion on missile defences ranged between ambivalent and negative; after the attacks the same organization found that the public favored offensive and preventive action over homeland defence as the best response to terrorism.⁵⁰ In other words, President Bush's policy of preemptive action has potential support among the American public but the popular appeal of missile defences among the array of security policy choices facing the United States is comparatively weak. As the American domestic debate focuses more closely on cost-benefit questions, the proponents of an ambitious missile defence program are likely to find progress more difficult. Congressional resistance is indeed already sharpening, in the continuing concern of the Senate Armed Services Committee over the administration's various NMD research projects -- most notably in the area of "systems integration" for linking the various technologies into a single system.⁵¹

In the current international security environment deterrence, defence, and diplomacy represent complementary aspects in practical multilateral efforts to cope with missile proliferation, whatever the natural tensions between them theory. Both the uncertain direction and pace of scientific progress and the domestic politics of missile defence in the United States testify to the probability that Bush administration will readdress the emphasis it has placed on the principle of defence and the fiscal resources it has allotted to NMD.⁵² For democratic states with a nuclear capacity deterrence will remain effective against a good many opponents who have recently acquired crude missile capabilities. But the past decade's experience in the proliferation and use of missiles is such that it would be folly not to pursue in the short-term technologies such as TMD which can shield peace-support operations in some of the most dangerous regions of instability. Equally it would be irresponsible not to advocate in the long-term a global surveillance system for transparency and confidence-building among potential adversaries. This latter goal calls above all for creative diplomacy in moving beyond traditional arms-control vehicles such as the MTCR and the NPT, possibly to focus international attention on states of particular concern but certainly to cultivate cooperation among states interested in sharing early-warning data in pursuit of transparency and calculability.

All is not lost, lastly, for traditional arms control. Despite the weaknesses of the MTCR, states from regions as volatile as the Middle East, such as Egypt and Iran, have made incremental steps toward accepting its spirit and guidelines.⁵³ The transparency offered by global surveillance systems should be incorporated in to a reconstituted and more broadly multilateral MTCR, geared above all to enhance confidence and calculability among potential adversaries, while identifying and isolating states which refuse cooperation in a new regime of truly mutual benefit. As a suppliers cartel, the MTCR has failed the cause of non-proliferation.

The reality is that missile defences are now necessarily an integral part of responsible thinking about arms control by civilized states in a post-ABM world --- to degrade the value of ballistic and cruise missiles to rogue regimes and terrorists on the one hand and to protect peace-support operations on the other. The sharing of early warning data and the development of global surveillance, in a limited format to begin with, holds out the possibility of still greater security from WMD and the proliferation thereof.

¹ National Missile Defense (NMD) refers to a ground-based anti-ballistic missile system designed to protect the United States against limited ballistic missile threats.

² The term weapons of mass destruction (WMD) commonly refers to nuclear, biological, and chemical weapons and their related technologies. The U.S. Federal Bureau of Investigation uses a broader definition, according to which a weapon crosses the WMD threshold when the consequences of its release overwhelm local responders.

³ Dov S. Zackheim, "Old Rivalries, New Arsenals: Should the United States Worry?" *IEEE Spectrum*, Vol.36, March 1999, pp.30-31.

⁴ Iraq fired al-Hussein Scud missiles at Israel and Saudi Arabia. Although the attacks were militarily insignificant, they damaged approximately 4,000 buildings in Israel, caused severe disruption to normal life and psychological distress among the Israeli population, especially as there were fears that Iraq might be using chemical warheads. The attacks also had a disproportionate effect on allied strategy, as some 15% of its strategic air campaign had to be diverted to the task of destroying Iraqi surface-to-surface missiles. Had Israel not been defended by U.S. Patriot air-defense missiles and phased-array radars to plot incoming Scuds, Israeli retaliation against Iraq might well have changed the dynamics of the conflict profoundly by destroying the unity between the Western and Arab states. See Lawrence Freedman and Efraim Karsh, *The Gulf Conflict, 1990-1991: Diplomacy and War in the New World Order*, (Princeton: Princeton University Press, 1993), pp.307-311; 331-361. In the judgment of some, however, the Patriot's value was political rather than military. While its use helped to keep Israel out of the war, its success in intercepting Scud missiles was calculated by some studies to be no higher than 20%. See Theodore A. Postol, "Lessons of the Gulf War Experience with Patriot," *International Security*, Vol.16, No.3, 1991-92, pp.119-171.

⁵ Kissinger quoted in Keith Payne, *Missile Defense in the 21st Century: Protection Against Limited Threats, Including Lessons from the Gulf War*, (Boulder: Westview, 1992), p.143.

⁶ On this point see Keith Payne, "Post-Cold War Deterrence and Missile Defense," *Orbis*, Vol.39, no.2, 1995, pp.201-224.

⁷ Pat Towell, "Bush Wins on Missile Defense, But With Democratic Stipulation," *CQ Weekly*, June 29, 2002, p.1754.

⁸ *Coming Into Range: Britain's Growing Vulnerability to Missiles and Weapons of Mass Destruction*, A Report by the Missile Proliferation Study Group, p.64. The report concluded that Britain's interests would be served by "U.K. support for and participation in an U.S.-led system of ballistic missile defence," the scope and capabilities of which "could be extended incrementally;" and warned that "continued reluctance to take the subject seriously" could only increase the vulnerability of British cities and armed forces. For the *Strategic Defence Review* see <http://www.mod.uk/issues/sdr/intro.htm>

⁹ House of Commons Official Report. Parliamentary Debates (Hansard) Vol.367, No.79, Thursday 3 May, 2001, p.987. Douglas Barrie, "Hoon Divulges that U.K.'s View of WMD Defense Parallel's U.S.," *Aviation Week & Space Technology*, Vol.156, No.12, 2002, p.30.

¹⁰ Theatre missile defence (TMD) refers to the strategies and tactics employed to defend a geographical area outside the United States against attack from short-range, intermediate-range, or medium-range missiles.

¹¹ Michael Krepon, "Moving Away From MAD," *Survival*, Vol.43, No.2, 2002, p.84.

¹² Edward M. Whalen, "The Military Aspects of European Security," in Carl C. Hodge Ed., *Redefining European Security*, (New York: Garland, 1999), p.258. See also Ian O. Lesser, *NATO Looks South: New Challenges and Strategies in the Mediterranean*, (Santa Monica: RAND, 2000).

¹³ Albert Wohlstetter, who helped to develop the theory, himself never fully accepted it, but it nevertheless became the conceptual basis for Washington's approach to strategic stability and arms control. See Marc Trachtenberg, *History & Strategy*, (Princeton: Princeton University Press, 1991), pp.20-25. For examples of MAD theory see Thomas Schelling and Morton Halperin, *Strategy and Arms Control*, (New York: Twentieth Century Fund, 1961) and Hedley Bull, *The Control of the Arms Race*, (London: Weidenfeld & Nicolson, 1961).

¹⁴ See his commentary in Ashton B. Carter and David S. Schwartz Eds., *Ballistic Missile Defense*, (Washington DC: Brookings, 1984), p.400.

¹⁵ David S. Yost, *Soviet Missile Defense and the Western Alliance*, (Cambridge: Harvard University Press, 1988), pp.47-48. Colin Gray maintains that "Soviet strategists always believed that missile and air defences were important" and that they accepted constraints on ballistic missile defence in 1972 because of Soviet technological non-competitiveness "not strategic philosophical opposition to active defense." *Modern Strategy*, (New York: Oxford University Press, 1999), p.341.

¹⁶ Michael J. Mazarr, *Missile Defences and Asia-Pacific Security*, (New York: St. Martin's, 1989), pp.3-6. Even in the relatively stable environment of superpower stalemate, the ABM regime clearly did not deliver on the promise of broader arms-control agreements. In the sixteen years following the signing of the ABM Treaty the Soviet deployed four new types of ICBMs, five new classes of ballistic missile submarines along with five types of submarine-launched missiles, all the while spending as much on strategic defense as on offensive systems. Hence, long before Reagan was inaugurated these facts had presented the United States "with both a strategic and arms control rationale for reconsidering adherence to the ABM Treaty." See Robert M. Soofer, *Missile Defences and Western European Security: NATO Strategy, Arms Control, and Deterrence*, (Westport: Greenwood, 1988), pp.87-102, p.157.

¹⁷ *The Economist*, March 16, 1996, p.39.

¹⁸ Bingham Kennedy Jr., "Curbing Chinese Missile Sales: From Imposing to Negotiating China's Adherence to the MTCR," *Journal of Northeast Asian Studies*, Vol.15, No.1, 1996, pp.57-69; Paul Mann, "No Breakthrough on Chinese Proliferation," *Aviation Week & Space Technology*, Vol.156, No.10, 2002, pp.57-60.

¹⁹ A number of ambiguous definitions exist of a term that seeped into American diplomatic parlance during the Clinton administration. Here, "rogue state" refers to *a state that puts a high priority on subverting other states and sponsoring non-conventional types of violence against them. It does not react predictably to deterrence or other tools of diplomacy and statecraft.* See Barry Rubin, "U.S. Foreign Policy and Rogue States," *MERIA Journal*, Vol. 3, No.3, September 1999.

²⁰ The Clinton administration announced that it would decide on the if-and-what of a U.S. NMD deployment in the summer of 2000 yet ultimately opted to leave the choice to Clinton's successor.

²¹ Executive Summary of the Report of the Commission to Assess the Ballistic Missile Threat to the United States, July 18, 1998. <http://www.house.gov/hasc/testimony/105thcongress/BMThreat.htm>; Department of Defense, *Quadrennial Defense Review Report*, September 30, 2001 The QDR's vision of American defense priorities is based in part on the widening gyre of challenges to U.S. interests at home abroad, the consequence of which is a policy shift away from threat-based to capabilities-based defense planning. The United States is today less concerned with who might threaten its security and that of its allies as with increasing diversity in *how* threats will manifest themselves, including missile attack. A capabilities-based defense necessarily broadens the strategic perspective of the security policy of any state, but it requires sweeping change from a superpower with global interests.

²² *Quadrennial Defense Review Report*, p.42. Moreover, missile defence specifically and the contents of the QDR generally do not reflect the totality of flux in thinking about security issues going on in Washington

since September 11. In a speech to the graduating class of Westpoint President Bush announced the emergence of a U.S. doctrine of preemptive attacks against terrorists and hostile states possessing chemical, biological or nuclear weapons and deemed to be a threat to the United States. Remarks by the President at 2002 Graduation Exercise of the United States Military Academy, June 1, 2002. *Washington Post*, June 10, 2002, p. A01.

²³ While it is responsible to point out the shortcomings of an agreement that contains no provisions for the weapons that will be retired, it is equally evident that the Bush administration's withdrawal from the ABM Treaty has thus far not provoked from Moscow the response Bush's critics predicted. Since much of the negative reaction of West European governments to NMD was influenced by the fear of Russian reaction, it is now reasonable to assume that their objections will diminish in proportion to Russian acquiescence Ivo H. Daalder and James M. Lindsay, "Nuclear Treaty is all Style, No Substance," *NRC Handelsblad*, May21, 2002.

²⁴ David Goldfisher, *The Best Defense: Policy Alternatives for U.S. Nuclear Security from the 1950s to the 1990s*, (Ithaca: Cornell University Press, 1993) p.271. See also Roger Handberg, *Ballistic Missile Defense and the Future of American Security*, (Westport: Praeger, 2002).

²⁵ Dana Milbank, "Bush, Putin Sign Nuclear Arms Treaty," *Washington Post*, May 24, 2002, A1.

²⁶ *New York Times*, February 22, 2001, p.1; *Washington Post*, December 13, 2001, p.A1; *Wall Street Journal*, May 13, 2002, p.1; Hannes Adomeit, "Putin und die Raketenabwehr: Moscows Haltung zu NMD in Kontext der russisch-amerikanischen Beziehungen," *SWP-Studien*, September, 2001.

²⁷ Keith B. Payne, "Post-Cold War Deterrence and Missile Defense."

²⁸ "Bronze medal technology" will suffice to obtain an arsenal that can intimidate a neighboring state or deter an international intervention force with the threat of WMD attack. The case of Iraq alone has demonstrated that three operative assumptions of supply-side anti-proliferation regimes such as the MCTR are problematic. First, crude ballistic missile technologies are *not* controlled internationally and are perhaps not controllable. Second, developing states with only a modest military-industrial capacity can now develop ballistic missiles with WMD payloads indigenously. Last, the cost of circumventing the MCTR is *not* enough to thwart all countries from making the effort. Peter D. Zimmerman, "Proliferation: Bronze Medal Technology is Enough," *Orbis*, Vol.38, No.1, 1994, pp.67-83.

²⁹ Aluf Benn, "Slowing the Missile Race," *Bulletin of Atomic Scientists*, Vol.58, No.1, 2002, pp.21-23.

³⁰ All of factors in favor of missile defence are cited by Keith Payne in "Post-Cold War Deterrence."

³¹ Michael O'Hanlon, "Cruise Control: A Case for Missile Defense," *The National Interest*, No.67, Spring, 2002, p.93

³² Theodore Postol, "Why Missile Defense Won't Work," *Technology Review*, Vol.105, No.3, 2002, pp.42-52.

³³ Satellites orbit at an altitude of 40,000 kilometers and can be stationed over the same point on the earth's surface, so that once two or more satellites detect a missile's launch they can track its flight in three-dimensional stereo viewing --- until the missile's rocket boosters shut down at 200-300 kilometers altitude. Because such a boost-phase system would use fast, short-range interceptors positioned only a few hundred kilometers from their launch site, it could be devastating against geographically small emerging missile states and rogue nations, but it would be inappropriate for defence against countries such as China and Russia. *Ibid*.

³⁴ Richard D. Sokolsky, "European Missile Defense --- Issues and Options," *Joint Force Quarterly*, Autumn/Winter 2001-02, pp.46-51.

³⁵ "Because the threats posed to U.S. forces overseas, friends and allies are far greater than comparable threats to the U.S. homeland," Michael Krepon observes, "theater missile defenses have become far more important than national missile defenses." "Moving Away From MAD," pp.84-85.

³⁶ European missile and radar manufacturers have said that they are interested above all in developing TMD capabilities with technology that incorporates proven missiles and radar systems. See Paul Beaver, "Europeans Ready to Support U.S. Missile Defense Program," *Jane's at DSEI*, September 10, 2001; "Chirac für taktische Raketenabwehr," *Neue Zürcher Zeitung*, June 8, 2001, available at : <http://www.nzz.ch/2001/06/09>; On PAAMS, see <http://www.royal-navy.mod.uk/static/pages/2407.html> and <http://www.geocities.com/Pentagon/Bunker/9452/paams.htm> .

³⁷ Sokolsky, pp.48-49; James M. Lindsay and Michael E. O'Hanlon, *Defending America: The Case for Limited National Missile Defense*, (Washington DC: Brookings, 2001), pp.29-49. Boost-phase missile defense offers the capacity to shield the United States and its European allies against missile threats of any range. However, it is also in many respects the most ambitious form of missile defense and entails political, technical, and operational problems. Additionally, it involves some of the most futuristic and unproven technology, such as airborne laser (ABL); to function on a day-to-day peacetime basis, ABL and escort aircraft would have to be on continuous patrol. Enormous expense, in other words, is built into both its technology and operational features. With the ABM Treaty now gone as a factor in the Bush administration's plans, ABL is among various technology projects that will get careful attention. But the role of a boost-phase system in a multi-layered system — in particular its interoperability with other layers — is at this point less than obvious.

³⁸ Sokolsky, p.49.

³⁹ Frances M. Lussier et.al., *Army Air and Missile Defense: Future Challenges*, (Santa Monica: RAND, 2002).

⁴⁰ If the WMD threat continues to grow as it has over the past decade, the United States and its allies might find it prudent to develop a multi-tiered architecture integrated by a single sensor/battle-management system. Multiple tiers of defence offer seamless target tracking and cuing, each tier focusing on missiles that have evaded detection or destruction by the preceding layer David Gompert and Klaus Arnhold, *Ballistic Missile Defense: A German-American Analysis*, (Santa Monica: RAND/SWP, 2001), p.11.

⁴¹ John D. Steinbruner, *Principles of Global Security*, (Washington DC: Brookings, 2000), pp.82-83.

⁴² *Ibid.*, p.83.

⁴³ Special Report: "Sensors Make-or-Break Ballistic Missile Defense," *Military & Aerospace Electronics*, Vol.12, No.2, 2001, pp.15-20; Postol, "Why Missile Defence Won't Work."

⁴⁴ Handberg, p.64.; Reiner K. Huber, "Terrorismus und die Notwendigkeit einer globalen Raketenabwehr: Eine Möglichkeit zur Zusammenarbeit mit Russland?" *Politische Studien* Vol.53, March/April, 2002, pp.61-70.

⁴⁵ Unclassified Statement of Lieutenant General Ronald T. Kadish, USAF Director, Missile Defense Agency, before the Senate Appropriations Committee Defense Subcommittee regarding the FY03 Missile Defense Budget, Wednesday, April 17, 2002, p.26.

⁴⁶ United States Department of Defense, Prepared Statement on Missile Defense by Deputy Secretary of Defense Paul Wolfowitz, to the Combined Procurement and R&D Subcommittees of the House Armed Services Committee, June 27, 2002.

⁴⁷ Robert Wall, "New Space-Based Radar Shaped by SBIRS Snags," *Aviation Week & Space Technology*, Vol.156, No.7, 2002, p.30.

⁴⁸ Michael Mecham and Robert Wall, "It's High Noon for SBIRS-High," *Aviation Week & Space Technology*, Vol.156, No.14, 2002, pp.85-88; Stan Crock, "Eagle --- or Albatross?" *Business Week*, May 13, 2002, pp.82-83.

⁴⁹ James M. Lindsay and Michael E. O'Hanlon, "Missile Defense after the ABM Treaty," *Washington Quarterly*, Vol.25, No.3, pp.163-176.

⁵⁰ Pew Research Center for the People & the Press/Council on Foreign Relations, "The View Before 9/11: America's Place in the World," September 10, 2001; Pew Research Center for the People & the Press, "Military Action a Higher Priority than Homeland Defense," September 27, 2001.

⁵¹ Pat Towell, "Democrats Dubious About Missile Defense Management," *CQ Weekly*, March 16, 2002, pp.715-717; Lindsay and O'Hanlon, "Missile Defense after the ABM Treaty," p.173; *Wall Street Journal*, June 26, 2002;.

⁵² Dean A. Wilkening, "Keeping National Missile Defense in Perspective," *Issues in Science & Technology*, Vol.18, no.2, 2002, pp.50-59.

⁵³ Benn, "Slowing the Missile Race," p.23

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