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# Expanding the Framework for Analyzing National Missile Defenses: A Proposal for Discussion

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In December 2001, the United States announced its intention to withdraw from the ABM (Anti-Ballistic Missile) Treaty of 1972 with the intention of pursuing a national missile defense (NMD), a remarkable event. Even more remarkable, perhaps, was the nature of public discussion preceding that decision. Some were appalled that a centerpiece of arms control was being scuttled in favor of a program seen to be of dubious feasibility and of dubious value even if successful. Others were appalled that the ABM Treaty, regarded as a dysfunctional remnant of the Cold War, constrained development of necessary and basic means of national self-protection well after 1989. Those favoring withdrawal and those opposed generally addressed themselves to receptive audiences (the proverbial sermons to the choirs), but not much to each other. It is reasonable to characterize the current debate as generally unfocused, fragmented among various advocacy groups, and short of systematic analysis outside previously defined advocacy agendas.<sup>2</sup> It is also reasonable to ask what can be done to improve the quality of the NMD debate. This essay proposes one way to do that.

## TIMES HAVE CHANGED

It is time to rethink the framework for analyzing ballistic missile defenses, especially the NMD program the US Administration has proposed. The political and strategic context has altered significantly, and approaches that made sense in the 1960s and 1980s need corresponding changes. When the ABM Treaty was ratified in 1972, the central feature of global politics was the long-term competition between the Soviet Union and the United States. The Soviet Bloc has since dissolved, with many of its former members seeking to join the other side. The military-technical context has also changed, as a result

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of the contemporary Revolution in Military Affairs (RMA). Weapons of Mass Destruction (WMD), as a class, are now options for the poor. The rich have moved, or are moving, to precision strike with conventional warheads – what might be termed Weapons of Selective Destruction (WSD).<sup>3</sup>

That said, however, the fundamental questions regarding the advisability of NMD, still include the following:

1. Is NMD technically feasible, and available at a reasonable cost?
2. Against whom is NMD intended?
3. What can those countries do to adapt to NMD?

The first question is certainly important, but can be resolved through technical means (a well-planned testing program). The other two questions are more complex, and depend on the strategic situation.

Within the new political context, it is unlikely that NMD would be worthwhile against a potential peer, (or near-peer) rival. There are not any peers, or near peers, with plausible motivation to undertake a major WMD strike against the United States – although a still-exclusive group certainly has the means. NMD is more likely to be useful against (and justified by) employment against a non-peer adversary. It goes without saying that non-peer competitors have lesser means to counter US NMD deployments.

What this means is that the analytical framework that informed previous NMD debates needs some major rethinking and revision. Previous proposals for an American NMD had a peer competitor (the USSR) in mind. The USSR no longer exists and current NMD proposals have non-peer rivals in mind. In short, rethinking seems to have been due by 1991 – with the demonstration of the contemporary RMA and the demise of the Soviet Union. Rethinking and revision are clearly overdue now.

Another major issue is the effect of NMD on military competitions. What will rivals do in response to NMD? Broadly speaking, there are three classes of counters against national missile defenses:

1. emulation – a countervailing NMD, or development of equivalent capabilities by other means;
2. offsetting – countermeasures to, or disruption of, opposing NMD; and,
3. bypassing – avoiding ballistic missile defenses altogether.<sup>4</sup>

Non-peer emulation of a US missile defense seems problematic at best. Offsetting measures, especially countermeasures, are well known and extensively cataloged.<sup>5</sup> Many were developed to some extent during the Cold War. Technical availability of countermeasures is one issue; ability of non-peer competitors to actually field that technology is another. Bypassing measures could conceivably involve major technical advances by the attacker, but seem more likely to involve WMD delivery by means other than ballistic missiles.

## WHAT THOSE CHANGES MEAN

Assessment of NMD deployments should sort between (1) peer and non-peer competitors, plus (2) efficacy in avoiding a WMD attack and influencing military competitions in advantageous ways. These are summarized in Table 1.

**Table 1:**  
**Proposed framework for NMD analysis**

		Effects	
		Avoiding WMD attack	Influencing military competition
Competitor	Peer Non-peer		

An agenda for BMD analysis should address all four parts of the scheme above. “Avoiding WMD attack from a peer competitor” (Table 1, upper left) has received considerable attention. One approach is based on the theory of games, variations of the Stag Hunt.<sup>6</sup> Both models and conclusions are interesting, and can be extended to define a measure of “crisis instability”.<sup>7</sup> An alternate approach is more technical. It generally features weapon “drawdown” curves to assess the usefulness of disarming first strikes against real forces.<sup>8</sup>

All that fits nicely with something like the Cuban missile crisis as a canonical scenario. Assessing the attractiveness of a disarming first strike is a logical benchmark for analyzing a nuclear confrontation against a well-armed peer competitor. It makes no sense, for example, to undertake a “punishing” first strike against a peer’s non-military targets, and then be vulnerable to large-scale retaliation in kind.

Consideration of “Avoiding attack against a non-peer competitor” (Table 1, lower left) is much different. Disarming first strikes make no sense for a party contemplating WMD strikes against a larger and more powerful enemy. Disarming that enemy is almost certainly out of the question. Disarming pre-emptive strikes do make sense for the stronger nation (although WMD pre-emptive strikes are less likely than precision strikes with conventional weapons). However, a punishing strike is an interesting option for the weaker party, especially if the weaker power has a more intense interest at stake in what is being contested. What is needed is an analytical scenario that serves the same purpose as the Cuban missile crisis when considering interactions with non-peer adversaries.

One interesting candidate for this scenario is “Access Deterrence”. It goes something like this: Country X invades Country Z. The US deploys forces toward the region. Country X threatens use of WMD against the US homeland if the US continues. The US then considers a disarming first strike (from a menu that features long-range, precision strikes with WSD).<sup>9</sup>

There was considerable analysis of “Influencing the military competition against a

peer competitor” (upper right) in the 1980s. The standard peer-competitor scenario was an ambitious US NMD against the Soviet Union. Many analyses involved the technology of measures and countermeasures; some were sufficiently sophisticated to include multiple options and relative costs.<sup>10</sup> Again, “Influencing the military competition against a non-peer competitor” (lower right) is different. Non-peer competitors have less technical sophistication than peers; they also have fewer resources. Accordingly, the obviously rich menu of technically feasible countermeasures is likely not fully available to a non-peer. Furthermore, it is possible to “win” with a much less favorable cost exchange ratio against a non-peer in a measure-countermeasure competition.

A new scenario is needed here as well. One useful candidate is US deployment of a NMD against non-peer ballistic missile attacks, with response. A response would be undertaken by a regional power desiring to preserve its ability to undertake very painful attacks against the US homeland. The menu available would include various forms of WMD with various means of delivery (to include ballistic missiles with countermeasures).<sup>11</sup>

Making a serious effort to look ahead and reason back, the United States could then decide whether BMD deployments are likely to change military competitions (with the various non-peer rivals) for the better. Arguably the US should be thinking in terms of influencing the competition with non-peer rivals in favorable directions, rather than finding a comprehensive solution with NMD. This echoes somewhat the theme of “competitive strategies” espoused in the 1980s.<sup>12</sup> Put another way, the US should decide whether it wants to live with a WMD threat delivered with ballistic missiles, or the problem that would replace it in the event of a successful NMD program.

Clearly, this particular problem is complex. We can, with considerable confidence, exclude “emulating” responses for non-peer competitors. However, it is clear that the relevant menu goes well beyond countermeasures mounted on missiles (which is an “offsetting” response in the classification scheme above). Another offsetting response is attacking the NMD system itself, perhaps *spetsnaz*-style raids against key attack-characterization radar. In addition, there is a wide variety of bypassing responses. One variety of such measures is the delivery of WMD using non-ballistic-missile delivery vehicles – including cruise missiles, aircraft, trucks and human agents.<sup>13</sup>

## WHAT NEEDS ATTENTION NOW?

As indicated above, there has been considerable analysis of the peer competitor cases that is highly ingenious – and highly useful within the strategic context assumed. What needs attention now is analysis and assessment of NMD against non-peers. We need to think seriously about useful basic scenarios. New scenarios are accordingly proposed in the section above.

We also need to think more seriously about the nature of the competitors. It seems reasonable to posit a regional power aspiring to regional hegemony. Its material means permit simultaneous development of WMD options (nuclear, chemical and bacteriological) but not simultaneous fielding of weapons in useful quantities in all those categories. This notional competitor aims to disengage the US from its region of

interest. Failing that, it would like to deter US assistance to its neighbors in wartime, or at least make that support slow and ineffectual.

At bottom, it seems that the current discussion attempts to put a lot of the old analytical wine into the new strategic bottles. The old wine is not entirely suitable. The question of NMD is clearly different and more complicated than it used to be. In particular, it is especially important to undertake serious analysis of NMD against non-peer competitors.

Hence, we need special attention to the second row in Table 2. The table itself summarizes the analytical scenarios discussed above. The table itself should be regarded as a first draft for a new NMD research agenda – one that is being expanded in ways suitable to the new strategic environment. It is offered here in hopes of starting some overdue discussions.

**Table 2:**  
**Proposed scenarios**

		Effects	
		Avoiding WMD attack	Influencing military competition
Competitor	Peer	Cuban missile crisis	Ambitious US NMD with Soviet response
	Non-peer	Access deterrence	US NMD, with non-peer responses

## NOTES

1. Disclaimer: this work represents opinions and judgements of the author. It does not necessarily represent any official position of the US Department of Navy or Department of Defense.
2. O'Hanlon's overview of the US missile defense discussion makes this case quite eloquently. M. O'Hanlon, "Scholars Need to Bring Creative Thinking to the Debate Over Missile Defense", *The Chronicle of Higher Education*, XLVIII (17), 30 November 2001, pp. B11–B13.
3. G. and M. Friedman, *The Future of War: Power, Technology and American Dominance in the 21st Century*, New York: Crown, 1996.
4. R. Franck and G. Hildebrandt, "Competitive Aspects of the Contemporary Military-Technical Revolution: Potential Military Rivals to the US", *Defense Analysis* 12 (2), 1996, pp. 244–5.
5. A. Sessler *et al.*, *Countermeasures: A Technical Evaluation of the Operational Effectiveness of the Planned US National Missile Defense System*, Cambridge, MA: Union of Concerned Scientists, MIT Security Studies Program, April 2000.
6. D. Ellsberg, *The Crude Analysis of Strategic Choices*, Santa Monica: RAND, 1960; T. Schelling, *The Strategy of Conflict*, 1960, rpt., New York: Oxford, 1977, pp. 207–29; R. Franck, *The Option of War and Arms Race Behavior*, unpublished thesis, 1982.

7. B. O'Neill, "A Measure for Crisis Instability with an Application to Space-Based Antimissile Systems", *Journal of Conflict Resolution* 31 (4), pp. 631–71.
8. M. McGuire, *Secrecy and the Arms Race*, Cambridge, MA: Harvard, 1965. M. Intriligator, "Strategic Considerations in the Richardson Model of Arms Races", *Journal of Political Economy* 83 (2), 63–84; L. Finch and A. Tinajero, *Cost to Attack: Measuring How Strategic Forces Affect US Security*, Washington, DC: Congressional Research Service, 20 March 1985; G. Kent and D. Thaler, *First-Strike Stability: A Methodology for Evaluating Strategic Forces*, Santa Monica, CA: RAND, 1989.
9. Another paper in this issue essays a first look at the Access Deterrence Scenario.
10. For example, G. Hildebrandt, *SDI and the Soviet Defense Burden*, Santa Monica, CA: RAND, 1988.
11. Melese and Palmore nicely characterize this menu. F. Melese and J. Palmore, "Ballistic Missile Defense – Protection or Placebo?" *Defense Analysis* 16 (1), 2000, pp. 89–98.
12. US Secretary of Defense Carlucci offered a statement of "competitive strategies" in his Fiscal 1989 annual report. F. C. Carlucci, *Annual Report to the Congress, Fiscal Year 1989*, Washington, DC: USGPO, February 1988, pp. 115–18.
13. Melese and Palmore, *op. cit.*