

# A Sober Second Look: Reassessing the Logic of Missile Defense

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Debates regarding American implementation of a national missile defense (NMD) and theater missile defense (TMD) systems designed to shoot down incoming nuclear missiles have so far focused on such issues as technical feasibility, cost, and the likely Russian reaction (for background bearing on the latter question see PONARS memos 108, 109, 132, and 134). It has largely been taken for granted that, if these obstacles could be overcome, implementation would be desirable. This memo examines that implicit premise. Simply put, assuming that implementation proves to be feasible, what is the strategic criterion that should be met in order for implementation to be desirable? To answer this question I must engage in a brief digression into the logic of defense and deterrence.

## **The Offense-Defense Balance**

The main strategic implication of missile defense technology is that it would shift the balance between offense and defense in the nuclear realm toward defense. In Robert Jervis' classic treatment of the "security dilemma" that characterizes relations among states, he highlighted two dimensions of reality--the offense-defense balance and the distinguishability of offensive versus defensive weapons--that determined whether those relations would be stable or dangerous. A world in which defensive weapons dominate and offense is distinguishable from defense would be, in Jervis' words, "doubly stable:" status quo states could build weaponry that is clearly defensive in nature and have it be understood as such. On the other hand, a world in which offensive weapons have the advantage would be "doubly dangerous" because each state would be forced to respond to arms buildups on the part of its neighbors and none could risk being outgunned.

What is the implication of this argument for nuclear arms control? One is tempted to conclude that, regardless of the distinguishability of offensive versus defensive weapons and regardless of the existing technological balance between offense and defense, increased defensive advantage translates into increased stability. Figure 1 illustrates this relationship. The policy implications are clear: increased defensive capabilities lead to increased stability. If such a relationship holds true, moving the offense-defense balance toward defense *à la* NMD/TMD would lead to an increase in stability and would therefore be wise policy.

Reality, however, is not so tidy. The introduction of nuclear weapons into the strategic equation at the end of World War II propelled the two superpowers into the most offense-dominant world they or anyone else had ever known, and whatever its other merits or demerits, Cold War nuclear politics turned out to be notably stable. In terms of the graph in Figure 1, the Cold War nuclear competition represents a persistent data point in the upper-left quadrant--remarkably offense-dominant, yet highly stable.

Jervis noted that the "now familiar reversal of common sense" inherent in deterrence logic meant that "[i]n the context of deterrence, offensive weapons are those that provide defense." Because offense is defense, measures that militate against the offense, such as anti-ballistic missiles (ABMs) at the time Jervis was writing or NMD/TMD now, actually degrade "defense" and are therefore undesirable. This formulation preserves the relationship between defense and security in figure 1 by reversing offense and defense in the case of nuclear weapons (or any weapons that operate via deterrence). It does so, however, at some cost in coherence: it maintains the correspondence between defense and security only by conflating the two.

### **Defense, Deterrence, and Security**

A more coherent and useful formulation, I think, would be to separate defense, deterrence, and security and specify their relationship to one another more concretely. Conventional weapons provide security through defense--that is, by negating the effects of harmful actions. This form of security is best obtained with defensive weapons, such as shields, walls, moats, and fortresses: each is designed to nullify a particular offensive threat. Nuclear weapons, on the other hand, provide not defense but rather security through deterrence. Rather than negating the effects of harmful actions, deterrence ensures that they will not take place: states facing opponents with secure second-strike capabilities are unlikely to launch the first missile for fear of being annihilated. Deterrence is the preferred mode of obtaining security when offensive weapons dominate. Each can provide security, although the most extreme cases of offense-dominance (e.g., those in which nuclear weapons exist but are highly vulnerable to a first strike) rapidly become highly unstable. The relationship between the offense-defense balance and stability, therefore, is more likely to resemble the graph in Figure 2, with the left-hand peak representing security through deterrence and the rising line to the right representing security through defense.

Prior to World War II, the Great Powers had relied primarily on defense for security. The introduction after the war of highly offensive weapons against which no defense was possible propelled us abruptly to the left on the X-axis into a world of such staggering offense-dominance that only deterrence could provide security. The creation of secure second-strike capabilities prevents us from descending the deterrence slope to the left into a world of absolute offense-dominance and hence insecurity, but security in the nuclear realm continues to be provided by deterrence rather than defense. The goal of introducing NMD/TMD systems is to make security by defense in the nuclear realm a possibility for the first time since the development of the intercontinental ballistic missile.

## The Curiously Contradictory Logics of Deterrence and Defense

One of the striking features of deterrence and defense is that they work best under completely opposite conditions. Deterrence relies on mutual vulnerability to raise the costs of conflict to such an extent that everyone would lose from it, while defense relies on mutual invulnerability to decrease the benefits of war to such an extent that no one could gain from it. Altering vulnerability enhances one and detracts from the other.

As a result of this fact, their logics point to opposite strategies for increasing security. For example, making weapons more lethal or virulent aids deterrence by making retaliation more horrible, but degrades defense by making protection more difficult to engineer. Similarly, bolstering defensive capabilities lessens the sting of retaliation and thereby degrades deterrence. Enhancing one inherently detracts from the other.

Herein lies the strategic danger at the heart of missile defense:

- Measures like NMD/TMD that increase security in conventional military terms (that is, enhance defense) *inherently* have the opposite effect in the nuclear realm because nuclear security is based on the logic of deterrence.

By pushing the offense/defense balance toward defense (to the right on the X-axis in figure 2), NMD/TMD erodes the mutual vulnerability necessary for deterrence to function. Leaders of nuclear states might for the first time possess the ability to destroy enough of an opponent's missiles in a partially successful first strike to render its remaining forces unable to penetrate their missile defenses.

## Strategic Criterion for Deployment

Given that, in the long run, the introduction of NMD/TMD technology is likely to shift the general balance of technology toward defense, what should the strategic criterion for deployment be? The answer follows in a straightforward manner from the above discussion:

- If deployment of NMD/TMD is to be strategically desirable, it must induce an increase in defensive stability that more than offsets the loss of stability due to the degradation of deterrence.

A common metric is difficult to establish, of course, but nuclear deterrence has proven stable for over 50 years at this point; at a minimum we should be able to realistically imagine a world in which NMD/TMD systems have proliferated lasting at least 50 years without incident. A missile shield that is perfect or very nearly so would fulfill the criterion; in terms of Figure 2, it would move us far enough to the right on the X-axis that our position on the Y-axis would improve. No one would contemplate even large-scale nuclear use because it would have no effect.

The worst of all possible worlds, by contrast, would contain NMD/TMD technology that is very good but not perfect. By providing a narrow window of vulnerability, such a system would provide enough of a gap to encourage a massive first strike *and* provide enough protection to fend off a second strike from a country that had suffered the effects of the first. Missile defense of this type would alter the balance of technology in such a way that neither defense nor deterrence would provide as much security as deterrence now provides. This situation would obtain as long as we remained stuck in the trough in Figure 2, unable either to un-invent missile defense or to perfect it.

It should be noted that this discussion of the offense-defense balance and associated modes of ensuring security implicitly assumes symmetry--that is, that missile defense technology, once introduced, will eventually spread. Such proliferation, of course, might not take place; the United States could be the only country ever to develop functioning NMD/TMD systems. In the long run, however, such a scenario is implausible because all of the likely short-run scenarios provide strong incentives for proliferation. Even if a limited NMD or TMD system like the one presently proposed could destroy one missile with certainty, it would only buy time until an opponent had built a second missile, or a third, or a fourth. The threat would be postponed, not resolved. Limited NMD/TMD, therefore, can only buy limited security for a limited time. For that reason, an American NMD/TMD system would be unlikely to remain limited. As a result, sooner or later other countries would feel compelled to follow suit. The discussion of joint missile shields, however confused (on this point, see PONARS memo 180), surrounding the June 2000 summit suggests a willingness to do so even now, despite the expense, and a joint PIR-Monterey Institute poll taken in late 1999 reveals that a clear majority of Russian citizens would support responding to American NMD deployment with development of a Russian NMD system. It would be foolhardy to make long-range plans that assume that NMD/TMD deployment will remain unilateral, just as it would have been foolhardy to make long-range plans in the mid-1940s that assumed that deployment of nuclear weapons would remain unilateral.

## Conclusion

The decision about whether or not to deploy NMD/TMD technology is, at least at this point, an American one, but the implications for security are multilateral. It therefore behooves Russian and American decision-makers to question not feasibility or cost but rather whether the deployment of NMD/TMD would convey a net increase in security before the decision to deploy has been made. The running assumption has been that a missile shield conveys a net increase in security to any country that possesses it and would therefore be desirable if feasible. This memo suggests that such an assumption may be mistaken because it ignores the inherent trade-off between defense and deterrence and because it ignores the strategic implications of multilateral deployment. The most critical question of all--whether NMD/TMD would represent a net increase in security once its effects on defense *and* deterrence have been taken into account--therefore remains unanswered.

### Figures

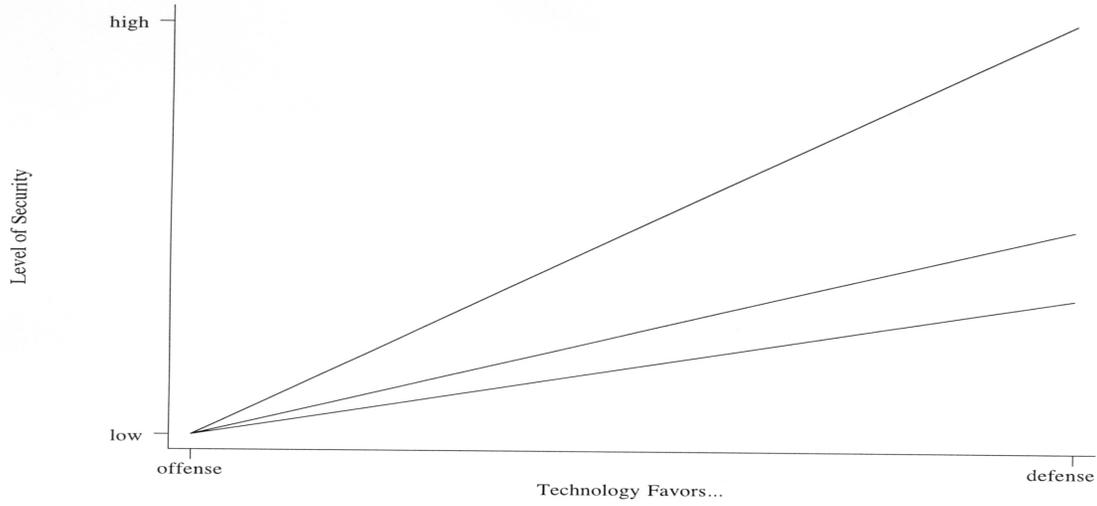


Figure 1: Relationship of offense-defense balance to security for (from top) high, moderate, and low levels of offense-defense distinguishability

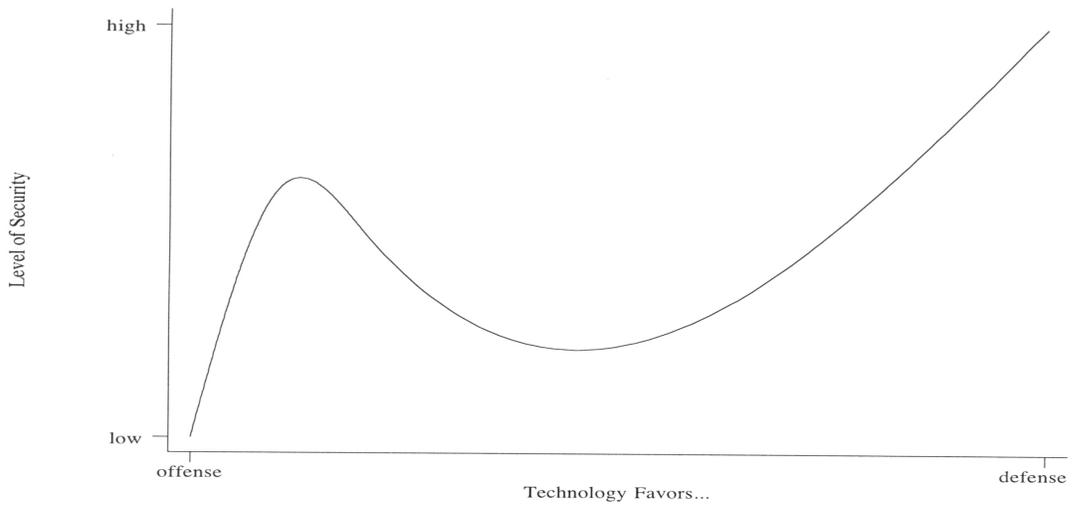


Figure 2: Revised relationship of offense-defense balance to security