

CONTROLLING THE POLITICAL ARRIVAL OF BALLISTIC MISSILE DEFENSE

*Lawrence C. Katzenstein**

THE EMERGING STRATEGIC ENVIRONMENT

The evolving drama of the Strategic Defense Initiative (SDI) has been heightened by the negotiation of the Intermediate-Range Nuclear Force (INF) Treaty and its promise of future arms agreements. But while the current discussions of the new strategic balance have been politically provocative, they have also been intellectually impoverished. They are provocative precisely because of innovations taking place in the international political arena. They are impoverished because too many participants in the debate insist on clinging to old ways of thinking.

With SDI, President Ronald Reagan sought, albeit naively, to provide an alternative to the balance of terror which has haunted the United States since the Soviets acquired nuclear weapons. In doing so, moreover, Reagan not only addressed the needs of Americans, but also the needs of other world citizens. In his March 1983 address on strategic defense and on subsequent occasions, Reagan offered to share developing SDI technologies with the Soviet Union in the hope of creating a world in which nuclear weapons would be rendered "impotent and obsolete."¹

In the INF Treaty President Reagan and General Secretary Mikhail Gorbachev concluded an accord which will eliminate an entire class of weapons from the European theater. It is remarkable not merely as an arms control treaty, but rather as a disarmament treaty. These weapons are not to be controlled at some agreed-upon level, but are rather to be destroyed.² The Treaty has already come to stand as a powerful symbolic statement of Soviet and American commitment to reducing the threat of war. Thus, one could argue that President Reagan, former Cold Warrior, emerged through his tough rhetoric to become America's leading peacemaker. This odd realization will take on additional force when current initiatives concerning reductions in the number of strategic weapons bear fruit as a consequence of the INF accord.

Provocative political actions, however, provoke hostile domestic reactions at least as often as they do constructive discussions. Despite the unexpected turn of

* Assistant Professor of Political Science, University of New Orleans; Member, American Political Science Association Conflict Processes Research Group. B.A., City College of New York, 1970; M.A., Rutgers University, 1981, Ph.D., 1987.

1. See Address of President Reagan to the Nation on Defense and National Security, 1 PUB. PAPERS 437, Mar. 23, 1987, the oft-quoted "Star Wars" speech). See also *Peace and National Security*, 83 DEP'T ST. BULL. 14 (1983) and *Reagan Said to Offer to Share Benefits of the "Star Wars" Plan*, N.Y. Times, Aug. 2, 1986, at 4, col. 4.
2. N.Y. Times, Dec. 9, 1987, at A1, col. 3.

events by which "Reagan the warmonger" became "Reagan the peacemaker," few persons in the intellectual community took note of this sea change in political discourse.

Reagan's traditional partisan opponents continue to see SDI as a rather crude attempt to restore the United States to a position of international superiority through a shield which has potential first strike implications. They see this contemplated shield as destabilizing because its imminent deployment may provide the Soviets with a first strike incentive. Reagan's critics see INF as a constructive anomaly, in which Reagan was surprised by the unexpected Soviet acceptance of his "zero option" publicity ploy.

Journalistic and partisan supporters of President Reagan continue to see things through an ideological mirror image of the liberal position. To them, SDI remains useful precisely because it can provide the United States with a technological quick fix to dominate the Soviet Union. They consistently view Reagan's INF accord as an uncharacteristic mistake—one in which Reagan let down our European allies by overly trusting the Soviets and removing a class of weapons which were very important to backing up the inferior conventional posture of the North Atlantic Treaty Organization.

Beyond partisan opinion, however, scholarly analysis seems to suggest that little, if anything, new has occurred in the wake of INF. Those who favor SDI still proceed from a warfighting position, which, in its more virulent form, actually advocates a first strike under crisis conditions. SDI's more balanced proponents look to an asymmetrical American deployment of SDI, not for its first strike possibilities, but rather as an updated brand of traditional civil defense, or as an extended deterrent threat which would guarantee the viability of an American first strike.

Those who oppose SDI often contend that it is not scientifically viable, that it would not be cost effective in comparison to the "mutual assured destruction" (MAD) guaranteed by additional offensive redundancy. They argue further that, since the system would be both vulnerable and injurious to Soviet strategic conditions, it could create a first strike incentive for the U.S.S.R. Moreover, since the system, despite its scientific limitations, could provide some advantage to the side that develops it first, it would be arms control destabilizing as well as crisis destabilizing. Finally, they maintain, if the United States deploys some kind of defense the Soviets would undoubtedly feel compelled to develop such a system, which would then create yet another tier of arms competition.

It would therefore appear that current attempts to move away from the nuclear blackmail of MAD are being framed analytically by the once provocative, but currently stale scholarship of the 1960's and early 1970's. Supporters look to SDI deterrence frameworks in the pioneering work of Thomas Schelling³ Herman Kahn⁴ and their current counterparts.⁵ SDI's detractors see the project from vantage points provided by L.F. Richardson,⁶ Anatol Rapoport⁷ and, more

3. See generally T.C. SCHELLING, *ARMS AND INFLUENCE* (1966) ch. 2-3.

4. See generally H. KAHN, *ON THERMONUCLEAR WAR* (1960).

5. See, e.g., Gray & Payne, *Victory is Possible*, 39 *FOREIGN POL'Y* 14 (1980).

6. See generally L.F. RICHARDSON, *ARMS AND INSECURITY* (1960).

7. See generally A. RAPOPORT, *STRATEGY AND CONSCIENCE* (1964).

recently, Hans Bethe, Richard Garwin, George Rathjens and others.⁸ To call these viewpoints stale is not to detract from the boldness and innovation they demonstrated when they were first developed in the 1960's. It is only to say that to continue to adhere to these frameworks as the only ways of dealing with these matters seems mistakenly to approach the world of strategic policy as if it were a static one. It is to say, in effect, that the ABM debate of the 1960's and 1970's is the same today as it was then—that the weariness of the world's population with the ongoing threat of nuclear incineration has had no effect on its political leaders, and that some new way of limiting the threat of nuclear genocide is beyond the realm of human capabilities.

Indeed, to characterize the current literature as somewhat tired is to do no more than to demand a literature that is at least as compelling as that which is associated with the authors mentioned above. As always, the task remains to build on prior insights and theories rather than to use these insights to coerce existing data into prior theoretical modes. Sometimes exercises in metatheory are warranted to help us understand the scope of prior contributions. In this regard, there now exists a second generation of concerns with which 1960's analysts were not well acquainted: the corruption of scientific inquiry, the demonstrated effectiveness of some strategic defense systems, the recognized potential for stability through strategic defense and other possibilities for the revision of strategic doctrine.⁹

One area of research now bearing fruit examines the manner in which scientific and technological innovations come to attract wide support. It is something of an analytical mystery how rather arcane systems which begin with support only in the scientific community which spawned them come ultimately to develop mass constituencies. To this end, a discussion of the current base of support for SDI should offer an interesting test case. It will become clear that the current debate on whether or not the United States truly wants strategic defense would best be supplanted by discussions which recognize that some form of strategic defense will eventually be deployed. Thus, the debate can move on to the more serious questions of choice.

CONTROLLING THE STRATEGIC DEFENSE INITIATIVE: POLITICAL SUPPORT AND STRATEGIC CHOICE

The debate over SDI is essentially obsolete. The resources and organizations involved in SDI now constitute a sufficient commitment to almost guarantee that some sort of system will eventually be deployed. However, since asymmetrical deployment of any new system may be crisis destabilizing, and even symmetrical deployment may be arms race destabilizing, some attempt must be made to limit the system's effects. Two options will be considered here. The first entails the conscious political crafting of a shift from offensive dominance to defensive dominance. The second contemplates a nuclear winter doomsday scenario, and essentially reconstructs MAD.

8. See Rathjens, *The Dynamics of the Arms Race*, 220 *SCI. AM.* 15 (1969); Rathjens & Ruina, *BMD and Strategic Instability*, 114 *DAEDALUS* 239 (1985) and Bethe, Garwin, Gottfried & Kendall, *Space-Based Ballistic-Missile Defense*, 251 *SCI. AM.* 39 (1984).

9. Many of these concerns are explored in L. KATZENSTEIN & D. GOLDFISHER, *THE LONG TERM IMPLICATIONS OF SDI* (forthcoming).

The former option has been proffered at various times by Robert Oppenheimer, Freeman Dyson and their more recent adherents.¹⁰ It would also appear to be the sort of thing that Reagan and Gorbachev seemed to be suggesting in their loose discussions about lower central balances. The latter approach assumes the failure of the former approach. It would offer a possible interim solution to the potential victim of asymmetrical SDI deployment.

THE BROAD BASE OF POLITICAL SUPPORT FOR STRATEGIC DEFENSE

President Reagan's plan for strategic defense, despite valid technical criticisms of its workability, was smart politics. As such, it reflected the political reality that positions need not be empirically sound, or even correct, to be politically viable. It drew from a broad and politically differentiated base of dissatisfaction with the MAD doctrine. Like most potent political symbols, SDI was, and is, both vague and multivocal. This allows its message to be received in self-serving terms by many who would otherwise remain opposed to one another on this or other issues.

To many American citizens, SDI has just the redeeming qualities that nuclear weapons themselves once presented. It provides a technological solution to preventing a Soviet attack while avoiding the troubling necessity of having to assess and deal with Soviet intentions.¹¹ To the American public, the approach has credibility because of the people's implicit belief in U.S. technical prowess. More importantly, however, the plan has the appeal of seeming to deliver the United States from the threat of potential nuclear holocaust. In this regard, it also has some appeal to elements of the liberal left who are concerned with the possibilities of accidental war inherent in the "chicken" brinkmanship aspect of MAD.¹² Finally, to the conservative supporters of Presidents Reagan and George Bush, the plan is seen as drawing on technologies in which U.S. superiority is unquestioned: microelectronics, phased array radar, large scale integrated circuits and high speed microprocessors.¹³ This superiority, it is hoped, will permit the United States to coerce the Soviet Union into arms control or even into more general political negotiations.

President Reagan's initial address on SDI in March 1983 was both emotionally and diplomatically sensitive. The President's commitment to defense rather than to retaliation was crystalized by his query, "Wouldn't it be better to save lives than to avenge them?"¹⁴ He then signaled his intent to use American strengths in technology and industry to create a system which would intercept strategic missiles before they could reach their targets.¹⁵ However, he also made it clear

-
10. See, e.g., D. Goldfisher, *Political Values and Technological Outcomes: The Future of SDI*, (paper presented at the 1987 Annual Meeting of the International Studies Association).
 11. John C. Toomay notes that our current strategic posture emphasizes Soviet capabilities rather than Soviet intentions. Toomay, *The Case for Ballistic Missile Defense*, 114 *DAEDALUS* 219 (1985).
 12. See generally H. CALDICOTT, *MISSILE ENVY* (1986).
 13. See Stevens, *The Soviet Program* in *BALLISTIC MISSILE DEFENSE* 217 (A. Carter & D. Schwartz eds. 1984).
 14. *Peace and National Security*, *supra* note 1, at 14.
 15. *Id.*

that while these technologies were under development he would maintain or build up U.S. nuclear and conventional deterrent forces.¹⁶ He likewise addressed Soviet concerns by noting that it was not his intent to use the new system in an offensive mode for aggressive purposes. He pledged as well not to violate the Anti-Ballistic Missile (ABM) Treaty. His major purpose, he said, was to render nuclear weapons "impotent and obsolete" and to "reduce the danger of nuclear war."¹⁷

President Reagan's desire to make nuclear weapons impotent and his care to demonstrate peaceful intent was amplified in later public statements concerning the sharing of the system with the Soviets. Since the beginning of his initiative, and most recently in 1986, President Reagan talked about sharing research developments with the Soviets if this might lead to the abolition of offensive nuclear weapons.¹⁸

One might rightly ask what Reagan's motivation was in advancing such a bizarre plan. Clearly, a plan of this scope must have squared with the presidential assessment of reality, must have been supported by his political base as well as a broader audience. Yet, on the face of it, the plan seems to have had a number of deficiencies.

Rendering offensive nuclear weapons obsolete, especially while sharing the new defensive technology with the Soviets, would leave us with a considerable conventional disadvantage in both manpower and geographical location in the European theater. While President Reagan, as noted, did call for a concurrent conventional buildup, it is unclear that such a position would satisfy either our European allies or his conservative supporters. It would seem difficult to believe that trading nuclear weapons for tanks would satisfy core conservatives. Moreover, in retrospect it seems foolhardy for Reagan to have tied his prestige to a plan that may not result in a working system.

Despite these potential political problems, President Reagan apparently sensed that a plan that remains undefined in its eventual scope, but offers some promise of reducing or eliminating the threat of a nuclear holocaust, is sure to gather political support. This support may not only be used to domestic political advantage, but also has utility in international arms negotiations as an oft touted "bargaining chip."

Yet, one should not conclude that President Reagan was merely being manipulative in his energetic support of SDI. While on the stump in his first presidential race President Reagan had already expressed the belief that American technology offered an escape from MAD.¹⁹ One observer notes that not only did President Reagan draft the SDI paragraph of his 1983 speech only five days before delivery, but he only shared his proposed initiative with a handful of close advisors. Remarkably, President Reagan never checked on the feasibility of SDI until after he proposed it to the nation. The Fletcher, Miller, and Hoffman panels were convened only three weeks *after* the President had already committed the nation to the program.²⁰

16. *Id.* at 12-13.

17. *Id.*

18. See N.Y. Times, *supra* note 1, at 4, col. 4.

19. Hafner, *Assessing the President's Vision: The Fletcher, Miller, and Hoffman Panels*, 14 DAEDALUS 91, 92 (1985).

20. *Id.*

Interestingly, the findings of the Miller Panel were never disclosed, while the findings of the Fletcher and Hoffman panels were perfunctory rather than enthusiastic in their endorsement of the President's plan. The Fletcher Panel found deficiencies in every defensive layer and was vague about how effective they expected the entire system to be.²¹ The Hoffman panel noted that even if SDI were ninety-four percent effective, the resulting leakage would result in unprecedented catastrophic damage to the United States.²² It also counselled deployment of a point defense for retaliatory forces as a hedge against the expected long development time of the President's plan.²³

Yet, despite these lukewarm reports, President Reagan's enthusiasm remained high, as exemplified by the major commitment of funds to the Strategic Defense Initiative Organization (SDIO), a major decentralized defense research project. The project built upon the extensive bureaucracy that was already in place from prior ballistic missile defense programs; through decentralization, it drew upon a broad segment of the scientific and engineering community.

SCIENTIFIC-BUREAUCRATIC SUPPORT

SDI has become a funding source for a broad range of applied scientific research including civilian research in energy production, medicine, and communications.²⁴ In 1985 SDIO research consumed more than three billion dollars which was divided among more than 1300 contractors.²⁵ In the 1988 fiscal year Congress approved an SDI budget of \$3.7 billion in response to a request for \$5.7 billion.²⁶ This is only part of the twenty-six billion dollars allocated to SDIO over five years.²⁷ A growing base of Star Wars supporters has thus been built into the scientific community.²⁸ Indeed, many university scientists have joined the program because of the access they get to well equipped laboratories.²⁹

More importantly, the current SDIO builds upon a long tradition of research and commitment in ballistic missile defense (BMD). President Reagan's research agenda simply added an additional tier to an ongoing enterprise. As far back as the early 1960's an American antisatellite system was developed and deployed to counter a Soviet satellite bombardment system.³⁰ Even before this time, in 1957, the United States Army began to develop the Nike-Zeus, a system of missiles designed for high altitude interception of intercontinental ballistic missiles, and a new radar tracking system to guide it. The new system was tested successfully

21. *Id.* at 94.

22. *Id.* at 97.

23. *Id.* at 94.

24. Browne, *The Star Wars Spinoff*, N.Y. Times, Aug. 24, 1986, § 6 (Magazine) at 20.

25. *Id.*

26. Reported by the Associated Press, March 15, 1988.

27. Chayes, Chayes & Spitzer, *Space Weapons: The Legal Context*, 114 DAEDALUS 193, 195 (1985).

28. Hartung, *Star Wars Pork Barrel*, 42:1 BULL. OF THE ATOMIC SCIENTISTS 20 (Jan. 1986). Policy analyst William Hartung has concluded that by widely dispersing Star Wars contracts, the Reagan Administration gave it a political and economic base designed to make future efforts to resist SDI more difficult. *Id.* at 20. Hartung, using an SDIO study, listed the top ten SDI contractors as of January 1986; Boeing led the list with \$152.5 million in awards. TRW and AVCO followed not far behind. *Id.* at 21.

29. Browne, *supra* note 24, at 73.

30. York, *Nuclear Deterrence and the Military Uses of Space*, 114 DAEDALUS 17, 23 (1985).

against an Atlas missile in a 1962 test.³¹ In 1963 the Nike X program added not only low altitude interceptors, but also a new phased array radar which was more easily protected since it needed no mechanical scanning.³² The two systems were combined into the Sentinel ABM system—the program at issue in the 1972 ABM Treaty.

In addition to the Sentinel system there have been a host of exotic plans dating back to the Eisenhower years. The ballistic missile boost intercept concept (BAMBI) was designed to chop up enemy warheads by hurling a rotating steel web at them. The 1962 Dynasoar program was to be a manned spacecraft that would spy on potential enemies and carry antimissile devices while patrolling in space. The SAINT program of the same year was designed to hunt for H-bombs in space and fire electron beams to destroy these bombs once they were detected.³³

The organizational base from which the SDIO draws is thus an extensive one. Indeed, approximately ninety-five percent of the 1985 SDIO budget was committed to the development of devices and ideas which predated Reagan's 1983 speech.³⁴ This ongoing momentum points to some sort of eventual BMD deployment. It also illustrates the bureaucratic inertia which will probably determine the United States ultimate choice of BMD systems.

With respect to momentum, it is clear that a mammoth weapons program with historical and political roots will gather the kind of support which has given us other programs that we did not need. The multiple independently targetable reentry vehicle program (MIRV) which evolved after the ratification of the ABM Treaty and the development of the soon to be obsolete B-1 bomber typify such bureaucratic momentum.³⁵ With respect to inertia, it would seem clear that such a bureaucracy would have already developed organizational ideas of what sorts of programs and systems are in the national interest. It is no wonder that a shift in priorities has recently been announced which calls for the early deployment of kinetic energy weapons at the expense of the development of laser and particle beams. While many of the researchers working on the new technologies were disturbed by this outcome, it was the sort of shift that one might have expected from those with a bureaucratic attachment to the older systems.³⁶

31. Flax, *Ballistic Missile Defense: Concepts and History*, 114 DAEDALUS 33 (1985).

32. *Id.* at 35.

33. Broad, *Star Wars*, N.Y. Times, Oct. 28, 1986, at C1, col. 2.

34. York, *supra* note 30, at 25.

35. York, *Multiple Warhead Missiles*, reprinted in PROGRESS IN ARMS CONTROL? 122-31 (B. Russett & B. Blair eds. 1979). From his analysis of the ABM Treaty negotiations, Herbert York arrives at the conclusion that superpower armament programs can be grouped into two rough categories regarding their development. The first category includes projects such as the American B-70 bomber and the Soviet and American ABM projects of the 1960's and 1970's. While these programs may have been exorbitantly expensive, they were addressed to a "clearly evident and single [military] purpose and depend[ed] on a unitary decision-making process" to govern their development; in principle, therefore, these programs were more easily controlled by their respective bureaucracies and, as necessary, terminated. *Id.* at 131. Programs in the second category—in which he includes the U.S. and Soviet multiple independently targeted reentry vehicle (MIRV) projects of the 1970's—administratively evolve from "many independent and seemingly unrelated goals and decisions. They are too diffuse, too protean, too difficult to define and delimit to be stopped by [bureaucratic] confrontation. They can be slowed or stopped" York concludes, "only by slowing or stopping the arms race as a whole." *Id.*

36. See N.Y. Times, Jan. 16, 1987, at A7, col. 4 and March 9, 1987, at A1, col. 6.

CONSERVATIVE SUPPORT

While it emerged that a substantial part of President Reagan's political agenda on defense matters was to produce a leakproof shield, it is clear that his old political supporters remain willing to settle for less. In December 1986, the conservative monthly *National Review* published three prominent articles calling for early deployment of existing BMD technologies. The theme of extended deterrence was extremely evident in these pieces. Jack Kemp, then a Republican congressman from Buffalo and occasional presidential candidate, argued that the build-up of Soviet forces put the United States and its allies into ever greater strategic danger, which would be alleviated by a BMD deployment. He further contended that Reagan's standards were too high and that a partial system would suffice until more advanced systems could be developed.³⁷

M. Stanton Evans reinforced Kemp's position by waving the spectre of Soviet atrocities from Hungary to Korean Airlines Flight 007. He said that partial deployment of SDI would make us immune to Soviet nuclear blackmail.³⁸ The notion of immunity also seemed to dominate the thinking of Simon Worden, who seemed to indicate that most of the technologies necessary for BMD were then available for relatively short- or medium-term deployment.³⁹

One should note in passing that deployment of a substantial BMD system would not be inconsistent with the escalation dominance approach of some of SDI's more conservative supporters. Albert Wohlstetter has made a case for the deployment of a tailored weapons system, along with a discriminating defense that would allow for the destruction of Soviet military targets while containing destruction and avoiding nuclear winter.⁴⁰ And the widely held position that a just war is more moral than MAD's implied acquiescence is certainly consistent with the deployment of defensive measures.⁴¹ Indeed, it is not much of a political leap to go from the Reagan position of developing defensive technologies to save people from a potential Soviet attack to the warfighting position of seeking to defend allied countries from such an attack.

MODERATE TO LIBERAL DEMOCRATIC SUPPORT FOR STRATEGIC DEFENSE

Current Democratic support for strategic defense is closely linked to the possibility of a nuclear winter emerging from a large scale nuclear attack, and the possibilities of arms reductions emerging from the INF accords. In the first case, the fear of a nuclear winter emerging from even a relatively small nuclear exchange has caused some leaders to call for a decrease in the number of strategic weapons coupled with some sort of point defense, and an increase in conventional forces to compensate for the difference. This call takes note of recent computer simulations showing that original studies may have overstated the case, but it

37. Kemp, *The Politics of SDI*, 38 NAT'L REV. 28, 30-31 (1986). See also Toomay, *supra* note 11 (proposing the preferential defense of silos as a means of deterrence).

38. See Evans, *The Common Sense of SDI*, 38 NAT'L REV. 32 (1986).

39. See, e.g., Worden, *What Can We Do and When Can We Do It?*, 38 NAT'L REV. 36 (1986).

40. Wohlstetter, *Between an Unfree World and None: Increasing Our Choices*, 63 FOREIGN AFF. 990 (1985).

41. Cf. Gray & Payne, *supra* note 5.

acknowledges later studies showing that significant changes in atmospheric and agricultural conditions will result from even a small nuclear exchange. Strategic defense thus becomes an option somewhere between the Scylla of disarmament and the Charybdis of nuclear winter.

United States Senator Albert Gore (D-Tenn.), in order to resolve the issues raised by nuclear winter research, attempted to find a solution. Gore argued that while the National Research Council report on nuclear winter neither confirms the probability of a nuclear winter nor discounts it, the prudent approach would make a worst case assumption and act accordingly. While Gore sympathizes with Cornell Professor Carl Sagan's call for mutual reductions in nuclear arsenals to a point below which nuclear winter could not emerge from an exchange, he sees such dismantling as politically unviable. He acknowledges that SDI, as Reagan envisioned it, would achieve similar protection, but finds the plan unworkable because "of the laws of physics."⁴² Gore then advocates measures in accord with traditional liberal notions of arms control regimes, to wit, strategic stability and damage limitation. Gore advocates:

1. Promoting strategic stability through deployment of weapons that limit the probability of a first strike.

2. Promoting theater nuclear stability in Europe through less reliance on tactical nuclear weapons and greater reliance on "smart" and longer range conventional munitions.

3. Improving crisis management with the U.S.S.R., including joint nuclear risk reduction centers and various confidence building measures such as testing accords.

4. Working towards nonproliferation and preventing the export of nuclear technology.

5. Developing low yield, high accuracy nuclear weapons with precise, tailored effects.

6. Discriminating in targeting so as to avoid Soviet cities or military targets that would cause massive combustion.

7. Increasing emphasis on limited strategic defense in order to deter Soviet attacks on U.S. retaliatory forces.⁴³

In taking these positions, however, Gore noted that some elements of the plan were incompatible with others. He therefore demonstrated an astute awareness of the contradictions which continue to plague support for the conservative position. Tailored, high accuracy, low yield weapons and counterforce targeting, he noted, are clearly at odds with strategic stability. In addition, he observed that reliance on the scientific community can be a questionable venture because of the polarization of that community into those who believe in the utility of nuclear weapons and those who do not. He therefore turns to arms control negotiations for a solution.⁴⁴

Senator Sam Nunn (D.-Ga.) has also taken a somewhat positive tone towards strategic defense in the wake of the INF agreement. In a series of public remarks Nunn has come to support what he terms a "sensible shield" directed at missiles

42. Gore, *Nuclear Winter: Strategic Significance*, 1 ISSUES SCI. & TECH. 120 (1985).

43. *Id.* at 121-122.

44. *Id.* at 123.

fired in error.⁴⁵ This limited ground based system, while directed only at misfirings, would really just be a limited version of the kinds of ground based systems to be deployed in a comprehensive arms control package.

The problem with both the Nunn and Gore positions is that they can be quite compatible with the configurations favored by warfighters like Wohlstetter. Both camps articulate a willingness to reduce nuclear weapons and deploy some sort of strategic defense. However, one group would seek to do so in order to build confidence and reduce destruction in the event of war, while the other would like to use the same configuration to enhance warfighting credibility in the event of war. The question really is one of political intent rather than of the deployment of hardware.

Indeed, Gore himself noted reflectively that his plan to prevent nuclear winter may lead to crisis instability. While the new configuration of technologies may lead to damage limitation in the event of war, it may also help to create a situation in which this very damage limitation may make the use of nuclear weapons more acceptable. The potential for coercive bargaining and brinkmanship in such a configuration could lead to unintentional nuclear war. This is a quandary which now serves as our central policy question.

CHOOSING THE COURSE OF SDI

If one agrees with the political assessment that some form of strategic defense will be forthcoming, then the real issue turns on how to assure that the new system will be stabilizing in the course of continued U.S.-Soviet competition. Gore is quite correct in this respect—an arms control regime which will utilize a ground based SDI to protect a reduced balance of land based missiles in the manner that we now do through hardening would be quite stabilizing. It would serve to protect a potential second strike force which would also be a less lethal potential first strike force. Such a configuration would also help to save the world from a potential nuclear winter.

Unfortunately, as we have seen in Wohlstetter's work, this is also a possible configuration for a first strike which would also serve to save the attacker from the potential ravages of nuclear environmental disaster. This in turn also raises the question that a continuing competitive relationship between the superpowers is bound to result in fears of numerical cheating, advantages in qualitative developments and the coercive politics that could result from these asymmetries.

THE ROAD AHEAD

One way to deal with some of these problems is just to incorporate near term destabilizing systems into arms control agreements. Nunn's insistence that recent tests of kinetic energy kill weapons violate the ABM Treaty certainly jibes with this perspective.⁴⁶ Indeed, this is a particularly good class of weapons to ban in light of its space-based first strike potential⁴⁷ and because of intense Soviet interest in competing in this not-so-high tech weapons system.⁴⁸

45. *Nunn Seeks Shield for Missiles Fired in Error*, N.Y. Times, Jan. 20, 1988, at A1, col. 2.

46. Mann, *Nunn Affirms 1972 ABM Pact, Finding Kinetic Tests Illegal*, 126 AVIATION WEEK & SPACE TECH. 21 (Mar. 26, 1987).

47. Broad, *Space Weapons Stir Debate Over Possible Offensive Use*, N.Y. Times, Feb. 22, 1987, at A20, col. 3.

48. *Id.*; see also R. SAGDEYEV, YE. VELIKHOV & A. KOKOSHIN, WEAPONRY IN SPACE: THE DILEMMA OF SECURITY (1986) (indicating a growing Soviet understanding of the technical systems involved in BMD).

One may well argue that the competitive political relationship between the two sides and the ongoing support for technological competition will undermine any arms control regime. In light of the potential benefits of the defense-dominant regime, one might ask what might be done in order to guarantee the national interest if arms control collapses. It is here that the superpowers might choose to reconstitute MAD around nuclear winter rather than around offensive redundancy.

If the central element of deterrence in MAD is uncertainty in a nuclear environment, this very same uncertainty could be achieved by creatively deploying nuclear winter-creating hydrocarbons around hard targets. Even so staunch a defender of escalation dominance as Edward Teller remains notably uncertain in light of nuclear winter simulations. He has admitted:

Examination of the possibility of nuclear winter differs from ascertaining fallout and ozone layer depletion because it depends on meteorological phenomena that involve much more detailed and complex calculations. Several important meteorological processes are inadequately understood and the bases for smoke estimation are very uncertain. Computer modeling sufficiently detailed and refined to handle all the various pertinent factors is not yet available.⁴⁹

The uncertainty of nuclear winter thresholds, coupled with all the other general uncertainties of war, may well serve to enforce an arms control regime incorporating a limited SDI as well as a limited central balance. Such a result will serve strategic needs, bureaucratic needs, and ultimately serve to guarantee the collective need for a peaceful future.

49. Teller, *Widespread After Effects of Nuclear War*, 310 *NATURE* 621, 622 (1984).

