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## Dyson Distinguished Lecture: The ABM Treaty and the Strategic Defense Initiative

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## Lecture

### **The ABM Treaty and the Strategic Defense Initiative\***

**Abram Chayes†**

It now seems clear that the Strategic Defense Initiative (SDI) will be high on the public policy agenda for a considerable period of time to come. SDI raises fundamental issues of national security policy because it puts in question the basic deterrence doctrine that has governed the United States' strategic thinking for a quarter of a century. SDI is a central issue in the arms control talks begun on March 12, 1985, in Geneva between the United States and the Soviet Union, and is likely to occupy a prominent position in US-USSR relations for some time to come. Not incidentally, SDI poses probing questions about the role and meaning of law and treaties in international affairs.

The objective proclaimed by the President in his Star Wars speech of March 1983, to which the SDI is ultimately traceable, was a defensive system that would render nuclear weapons "impotent and obsolete." It is difficult to define what such a system would consist of. The current program is described as a research

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and development effort, designed only to explore the potential of a number of different approaches and highly sophisticated technologies, many of which are not now in existence.

Very general descriptions in official statements project a "three-layer" system designed to intercept strategic ballistic missiles in three different phases of their trajectory. In the boost-phase, interception occurs during the first few minutes after the offensive missile is launched and before it has released its multiple warheads. Thus, a single interception would destroy a large number of incoming warheads. Moreover, locating and tracking the offensive missile is facilitated just after launch because the heat emitted by the rocket motors can be seen by infra-red sensors. Boost-phase interception would have to be accomplished from outer space, because only from such a position would sensors be able to locate, and interceptors be able to attack the missiles, at such an early stage in their flight. Furthermore, the whole process — detection, identification, tracking, aiming, and destruction of the incoming missiles — would have to be compressed into less than ten minutes after the offensive missiles have been launched.

In the second phase, mid-course interception, the missile would have released its warheads, which would be travelling separately through outer space on the way to their targets. This is the longest part of the thirty-minute trajectory. For most of this time, the missile is exposed to attack only from weapons based in space, but during the later phases, interception might be accomplished by interceptors launched from the ground. On the other hand, the numerous warheads plus decoys, none of which emit very sharp signals, make the mission a very demanding one.

Finally, there is terminal-phase interception occurring after or just before the warheads reenter the atmosphere in the last few minutes before they reach their target. Terminal interception might be accomplished by relatively conventional ground based technology. Of the three phases of interception, it is presumably closest to being ready for deployment.

Official statements have not always been clear or consistent about the purpose of the SDI system. The President's vision of a world without nuclear weapons implies that the system would be deployed as a population defense to render American cities impervious to nuclear attack. To accomplish this goal, the system

would have to be substantially perfect. Nuclear weapons are so powerful and so many of them are deployed on both sides that if even a very small percentage of warheads launched in a mass attack should penetrate the SDI defense, the death and destruction wrought in the defender's cities would be unthinkable. Because a perfect population defense is such a remote possibility, more recent administration statements have emphasized the potential of the SDI for developing defensive systems to protect land-based intercontinental ballistic missiles (ICBMs) in the United States, thus making a strike against them more difficult for the attacking force. In either case, however, a three-layer system is contemplated, including space-based boost-phase interception.

The SDI does not operate in a legal vacuum. A number of treaties and agreements regulate national activities in outer space. As far as strategic defensive systems are concerned, the most important is the Treaty between the United States and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty).<sup>1</sup> This Treaty, which is of indefinite duration, was one of the two agreements produced by the SALT I negotiations, concluded in 1972. It is the only arms control treaty in full force and effect between the two countries. It represents a very large part of what we have to show for four decades of US-USSR arms control negotiations.

The basic premise of the Treaty is that it will be easier to negotiate reductions in offensive weapons, that the strategic balance will be more stable, and that each side will be more secure if systems designed to defend against strategic weapons are substantially prohibited. Although it is this idea that is challenged by the President's SDI proposal, the idea to prohibit defensive strategic weapons was originally conceived in the United States. Soviet leaders, at first, took a position similar to that now advanced by the administration's supporters of SDI. At Glassboro, New Jersey, on his 1968 visit to the United States, Soviet Prime Minister Kosygin engaged in a heated argument with Secretary of Defense McNamara on this point, maintaining that weapons capable of defending against strategic missiles were positively

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1. Limitation of Anti-Ballistic Missile Systems, May 26, 1972, United States-U.S.S.R., 23 U.S.T. 3435, T.I.A.S. No. 7503 [hereinafter cited as ABM Treaty].

beneficial in that they might reduce the carnage and destruction of a potential nuclear exchange. Secretary McNamara argued that defensive systems were destabilizing because they might undermine the parties' confidence in the reliability of their retaliatory capabilities. But McNamara's arguments fell on deaf ears. Indeed, it has never been clear whether the Soviets ultimately adopted McNamara's theory, or whether some other reasons finally induced them to agree to the United States' demand for simultaneous negotiations on limitation of offensive and defensive weapons in SALT I.

In the end, both sides agreed to the prohibition of substantially all defensive systems. That is the fundamental point of the ABM Treaty: with one very limited exception, it outlaws ABM systems. Under article I of the Treaty, "[e]ach party undertakes not to deploy ABM systems for a defense of the territory of its country."<sup>2</sup> That, of course, is exactly what the President says he wants to do: to provide a fool-proof defense for the United States' national territory. Thus, the objective of the program as defined by the President is illegal under the Treaty. This point has special significance in relation to boost-phase interception. Whatever its ostensible purpose, that layer of the system is inherently a defense of the national territory, because in the boost-phase it is impossible to discriminate among the offensive strategic missiles on the basis of their ultimate targets.

Articles II and V reinforce the breadth and categorical nature of article I. Article II is a definitional article and establishes the coverage of the Treaty. It states that "[f]or the purposes of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory."<sup>3</sup> Article V is cast in equally sweeping terms, stating that "[e]ach party undertakes not to develop, test, or deploy ABM systems or components which are sea-based, air-based, space-based or mobile land-based."<sup>4</sup> In this unequivocal language, article V covers all basing modes (other than fixed land-based), including space, which is the intended arena for SDI. It covers development and testing, as well as deployment. And it applies to exotic technol-

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2. *Id.* art. I.

3. *Id.* art. II.

4. *Id.* art. V.

ogy as well as to technology that was available in 1972, when the Treaty was concluded. It is a substantially universal prohibition of the testing, development, and deployment of all ABM systems.

What, then, is permitted by the ABM Treaty? Article III authorizes limited deployment originally at two defensive sites, but now reduced to one, either around the national capital of the party or centered on an ICBM silo field. The site may contain only 100 launchers and missiles (single war-head and without capability for rapid-reload) deployed in an area no more than one hundred fifty kilometers in radius. The number and capacity of the associated radars are also strictly limited.<sup>5</sup>

The Soviet Union has exercised its rights under article III, and has deployed a system (nicknamed the Galosh) around Moscow. The United States began construction of an ABM site around the ICBM field in North Dakota, but subsequently concluded that it would be ineffective, and has abandoned the project.

Article VII of the Treaty permits "modernization"<sup>6</sup> of these article III systems. Thus, development and testing work on fixed land-based systems is permitted. But under article IV, this activity must be conducted at predesignated test sites, two on a side, containing no more than fifteen launchers each.<sup>7</sup> Within these limits, testing and development of new technologies is permitted by the Treaty. But before they can be deployed, "specific limitations on such systems and their components would be subject to discussion . . . and agreement" between the parties.<sup>8</sup>

There is no doubt that these provisions of the Treaty were intended to mean exactly what they say. Secretary of State Rogers, in presenting the Treaty to the Senate for ratification, testified:

The treaty provides for other important qualitative limitations. The parties will undertake not to develop, test or deploy ABM systems or components which are sea-based, air-based, space-based or mobile land-based . . . . Perhaps of even greater

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5. *Id.* art. III.

6. *Id.* art. VII.

7. *Id.* art IV.

8. *Id.*

importance as a qualitative limitation is that the parties have agreed that future exotic types of ABM systems, i.e. systems depending on such devices as lasers, may not be deployed, even in permitted areas.<sup>9</sup>

And even the Reagan Administration, in the latest Arms Control Impact statement issued by the Arms Control and Disarmament Agency (ACDA) in 1984, agrees:

The ABM Treaty bans the development, testing, and deployment of all ABM systems and components that are sea-based, air-based, space-based, or mobile land-based. In addition, although the Treaty allows the development and testing of fixed, land-based ABM systems and components based on other physical principles (such as lasers or particle beams) . . . the Treaty prohibits the deployment of such fixed, land-based systems and components unless the Parties consult and amend the Treaty.

The ABM Treaty prohibition on development, testing and deployment of space-based ABM systems, or components for such systems, applies to directed energy technology (or any other technology) used for this purpose. Thus, when such DE programs enter the field testing phase they become constrained by these ABM Treaty obligations.<sup>10</sup>

In the face of broad and sweeping prohibitions, what are we to make of the Administration's repeated assertions that SDI activities will not violate the Treaty? For general public consumption, including discussions with European leaders, the formula is that the present program is a "research" program, and that research is permitted, or at least not prohibited, by the Treaty.

As a statement about the language of the Treaty, that is undoubtedly correct. But the question is, what is "research"? As a professional audience will recognize, we have now entered the realm of lawyer's talk. It is at least possible to raise the question whether, in the context of the Treaty, an expansive definition of

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9. *The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Antiballistic Missile Systems: Hearings on S.J. Res. 241 & 242 Before the Comm. on Foreign Relations*, 92d Cong., 2d Sess. 6 (1972) (statement of William P. Rogers, Secretary of State).

10. COMMS. ON FOREIGN AFFAIRS AND FOREIGN RELATIONS OF THE HOUSE OF REPRESENTATIVES AND THE SENATE, 98TH CONG., 1ST SESS., FISCAL YEAR 1984 ARMS CONTROL IMPACT STATEMENTS 266-67 (Comm. Print 1983) (Su. Doc. No. Y4.F76/1:Ar 5/21/1984) (footnote omitted).

“research” can be made to cover a twenty-seven billion dollar program that sets out with the deliberate objective of accomplishing the very thing that is prohibited by the Treaty.

At a more technical level, the negotiating history of the Treaty gives some guidance on what was meant by “research,” or at least at what point the prohibited development begins. In a formal statement on this issue, prepared in response to a question from the Foreign Relations Committee during the hearings on the Treaty, the State Department said:

It was understood by both sides that the prohibition on “development” applies to activities involved after a component moves from the laboratory development and testing stage to the field testing stage, wherever performed. The fact that early stages of the development process, such as laboratory testing, would pose problems for verification by national technical means is an important consideration in reaching this definition.<sup>11</sup>

The reference to “national technical means” of verification is important. This is the only verification process recognized by the Treaty. The United States, in particular, was insistent that the Treaty should not contain obligations the performance of which could not be verified. Research, therefore, corresponds roughly to what cannot be observed because it is done in the laboratory. The obverse is that, at least to a first approximation, if the activity could be observed by reconnaissance satellites it falls within the meaning of “testing” or “development” under the Treaty.

Now it is clear that the SDI program is to some extent already out of the laboratory and can be observed by the Soviet’s technical means of verification. Thus, the justification that the SDI program is “research” permitted under the Treaty is short-lived at best. Consequently, the technical legal defense is now based primarily on two other areas of ambiguity in the Treaty.

First, the Treaty’s prohibitions against testing and development apply to “systems” and “components,” so the questions

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11. *Military Implications of the Treaty on the Limitations of Anti-Ballistic Missile Systems and the Interim Agreement on Limitation of Strategic Offensive Arms: Hearing Before the Senate Comm. on Armed Services*, 92d Cong., 2d Sess. 377 (1972) (statement of Gerard C. Smith, U.S. Ambassador to SALT delegation) (available on CIS microfiche: No. S 201-22 (1972)).

that are being asked are: "What is a 'component'?" and "What is something less than that?" The second ambiguous area is dual-purpose technology. Anti-satellite systems (ASAT) and anti-tactical ballistic missile systems (ATBM) are not, as such, prohibited by the ABM Treaty because the Treaty is limited to systems designed to intercept *strategic* ballistic missiles. But there is a large overlap in the technologies that could be used for both ABMs, on the one hand, and ASATs or ATBMs, on the other. Thus, it might be possible to conduct significant portions of ABM testing and development under the rubric of these other two programs. It will be seen that we are now moving from lawyers' talk to tax lawyers' talk.

Let us examine briefly two experiments that have been conducted under the SDI program to see how this type of legal argument works. The first experiment is Talon Gold, a program that has been abandoned, although follow up work with modified elements is still being contemplated. Talon Gold consisted of three parts: a land-based laser, a space-based mirror, and a pointing telescope. In a functioning system, the notion was that the laser beam would be reflected by the mirror and pointed by the telescope so as to hit the target. Assuming all the parts worked as intended (a big if), the only elements missing for a complete ABM system would be a sensor to locate and track the target and the necessary computational facilities.

So the question becomes whether the three parts of Talon Gold, either taken together or separately, are "components" of an ABM system. The Treaty defines components as "currently consisting of: (a) ABM interceptor missiles . . . (b) ABM launchers . . . and (c) ABM radars."<sup>12</sup> Elsewhere the language indicates that the term also includes "components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars."<sup>13</sup> It seems clear that the parts of Talon Gold are not missiles, launchers, or radars. And, although they would add up to a large portion of an ABM system if they could actually be made to work, they do not, in any strict sense, substitute for missiles, launchers, or radars. With the new technology, the sys-

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12. ABM Treaty, *supra* note 1, art. II.

13. Agreed Statements Regarding the ABM Treaty, 1(a)[D], 23 U.S.T. 3456, T.I.A.S. No. 7503 [hereinafter cited as Agreed Statements].

tem concept is different, and there are no direct analogues to the components mentioned in the Treaty. Thus, it is argued, Talon Gold and its parts are not components, and so their testing is not prohibited under the Treaty.

Consider next the Homing Overlay Experiment (HOE). This is the much celebrated test in which, as it is said, "a bullet hit a bullet." The achievement was by no means unprecedented. It occurred before with comparable fanfare in the late 1960s when the Defense Department was seeking appropriations for the since abandoned Safeguard ABM System. Moreover, the experiment had almost no significance for any currently envisioned operating system. But it has been very important in providing some public credibility for the SDI in the face of the almost universal skepticism of the scientific community.

In any case, in the experiment, a specially modified Minuteman I missile was launched from the Kwajalein test range (one of the two approved under the Treaty for the United States) and intercepted an incoming Minuteman that had been launched from Vandenberg Air Force Base in California. Article VI of the Treaty, however, prohibits giving "missiles . . . other than ABM interceptor missiles . . . capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and . . . test[ing] them in an ABM mode."<sup>14</sup> This was an important provision from the U.S. point of view, designed to prevent the Soviets from "up-grading" their extensive air-defense system to give it an ABM capability. Yet it seems difficult to deny that the Minuteman I was, in the language of the Treaty, a missile "other than an ABM interceptor missile," that it was given "capabilities to counter strategic ballistic missiles . . . in flight trajectory," and that it was tested "in an ABM mode."<sup>15</sup> The justification given by the administration is that once the specially adapted Minuteman was used for this purpose, it became an "ABM interceptor missile," and the test in all other respects complied with the requirements of article VI.

I do not mean to suggest that the United States is alone in playing these treaty-interpretation games. The Soviet Union has a large research program in ballistic missile defense. The Soviet

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14. ABM Treaty, *supra* note 1, art. VI(a).

15. *Id.*

government does not operate under a requirement of public accountability, so the exact size and scope of their program is not publicly known. But based on past performance, there is no reason to believe it is any less accomplished or sophisticated than our own.

Soviet behavior with respect to the Treaty limitations can be illustrated by the case of the Krasnoyarsk radar, which has now been formally designated by the Administration as an ABM Treaty violation. What is being constructed at Krasnoyarsk is a large phased-array radar. These radars exemplify the difficulties, under the Treaty, with multiple-purpose technology. They can be used for ABM battle management, and so were of concern to the negotiators of the ABM Treaty. But they are also used in systems for early warning against nuclear attack, for space tracking, and as national technical means of verification. The Treaty deals expressly with radars used for early warning and provides that these cannot be deployed "except at locations along the periphery of [the] national territory and oriented outward."<sup>16</sup> The reason for the provision is that radars so located would be properly sited to perform the early warning function but could not readily be used for ABM battle management, for example, as part of an ABM system.

Krasnoyarsk is in the middle of Siberia, more than 700 kilometers from the nearest border, and the radar is pointed across Siberia to the east toward Alaska, rather than directly outward over the nearest border, which is with Mongolia, to the south. According to American experts, both pro- and anti-SDI, it seems to be ideally situated to fill a gap in the Soviet early warning system, and its technical features are well-designed for that purpose. Of course, it also has ABM battle-management capability, and a number of experts think it is well-sited for this purpose. However, the restrictions of article VI do not apply to radars "for the purposes of tracking objects in outer space or for use as national technical means of verification."<sup>17</sup> The Soviets blandly maintain that Krasnoyarsk is intended for space tracking, and that the United States will see that this is so once the radar is completed. Recent reports from Great Britain suggest that there

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16. *Id.* art. VI(b).

17. Agreed Statements, *supra* note 13, 1(a)[F].

may be some truth in this explanation. Even if this turned out to be true, however, the radar would still have ABM battle management capabilities.

Tax lawyers, of course, operate with the Internal Revenue Service looking over their shoulder, and behind that, the courts, and behind the courts, the Congress. So there are limits to how far they can stretch the language of the tax code to create loopholes for their clients. No such constraints operate on the American and Russian lawyers charged with interpreting the ABM Treaty. Due to this process, pursued by both countries, we are witnessing the shredding of the Treaty.

The fundamental assurance that the parties were seeking in entering into the Treaty was the assurance that the other side was not planning an ABM system — not putting itself in a position where it could break out, that is, abrogate or withdraw from the Treaty and quickly deploy a system. That assurance is being steadily undermined by increasingly tenuous and casuistic interpretations of the Treaty, developed by both countries in a kind of “conscious parallelism.”

More important, whatever one thinks of the plausibility of the arguments discussed in this Article, it is admitted that these rationalizations will be available for only a very short time. In a very few years, three or four at most, SDI program activities will clearly go beyond the Treaty limits. That will happen long before the availability of adequate knowledge of the technologies involved, knowledge that is essential to making intelligent deployment decisions. Thus, the proposition that we can learn enough to decide whether a defensive system is feasible by means of a research program permitted under the Treaty — no matter how far that term is stretched — is quite simply false.

What is to be done? The ABM Treaty is clearly and unmistakably at risk. But the Treaty is not holy writ. Like other laws, it can be changed or repealed if the circumstances change or for other reasons it no longer meets the needs of the community.

So, the United States could withdraw from the Treaty. Article XV provides: “Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty [on six months notice] if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme

interests.”<sup>18</sup> As former Secretary of State Dean Rusk has remarked, it may be hard to characterize the possible emergence of new defensive technologies as “events related to the subject matter of the Treaty” that “have jeopardized supreme national interests.” But in any case, neither party shows the slightest indication of wanting to withdraw from the Treaty. Each side has publicly accused the other in strident tones of fundamental violations of the Treaty. Yet both sides seem to want to maintain the Treaty’s regime. Why? It seems obvious that the political costs of withdrawal — both at home and in the international sphere — are simply too high.

A second alternative would be to renegotiate the Treaty. That seems to be what the Administration is hoping for in the current arms control negotiations in Geneva. But it is hard to hold out much hope for such an effort if, as the President insists, the SDI program goes on, pending the outcome of the talks. In such circumstances, the delegates at Geneva are negotiating at a moving target.

The clearest and simplest counter to potential defensive systems is more offensive missiles to ensure penetration of any defensive shield that may be developed. Why would either side accept limitations on its right to deploy offensive missiles while the other was continuing to work at full blast on ABMs, or during an inevitably lengthy transaction period for the development of defensive systems if they should prove successful? On the contrary, until the achievement of a fully effective defensive system (for which there is small ground to hope), it would behoove each side to maintain and expand its offensive arsenals.

Moreover, to negotiate an agreed level of testing, development, and deployment of ABM systems is to accept an agreed level of breakout capability for the other side. How much of “breakout capability” will either party be willing to live with? In the past, the answer, at least for the United States, has been substantially zero. As already noted, the United States insisted on the inclusion of article VI in the Treaty to prevent any possibility of breakout. And over the past fifteen years, it has equally insisted on the strictest enforcement of those provisions. The only reason for a change in that attitude would be the hope that,

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18. ABM Treaty, *supra* note 1, art. XV 2.

if the limitations on testing and development of ABM systems were relaxed, the United States could exploit a technological lead over the Soviet Union. Such hopes have proved disastrous before. The Soviet Union has invariably matched United States' technological achievements in the field of strategic weapons, often, as in the case of the MIRV, to the ultimate disadvantage of the United States. There is no reason to suppose that this pattern will not be repeated as to ABM weapons.

ABM research programs contain a further threat to successful negotiations at Geneva. If the programs continue, they are bound to generate numerous activities, like Talon Gold, HOE, and Krasnoyarsk, of doubtful validity under the existing Treaty. These will necessarily become matters of contention in the ongoing talks. The ensuing charges and countercharges will inevitably poison the negotiating atmosphere.

If withdrawal and renegotiation are both precluded, what is left? My proposal would be to terminate the SDI program as such, at least while the Geneva talks are continuing. To maintain an enterprise with the fiscal and bureaucratic resources of SDI, with a policy of building, if at all possible, a system forbidden by the Treaty, does not in my view amount to the conscientious fulfillment of treaty obligations. ABM research could continue, but on a scale that is clearly within the range of activities permitted by the Treaty. Otherwise, I believe, in the process of trying to negotiate a new Treaty, we will destroy the Treaty we have.

If that should happen, it would be a fatal blow to the arms control process that has been going forward more or less continuously since 1945. The prospect for future agreement depends on the parties' sense that, if a treaty is finally agreed to, they can rely on it to safeguard the fundamental interests they were trying to protect through negotiated agreements. If the most important of the arms control agreements collapses, it will be impossible to sustain that sense on either side; and, in this country, it will be even harder than it is now to mobilize public support for approval of any agreement.

The consequence would be an unconstrained arms race in both offensive and defensive weapons, in an atmosphere of intensifying confrontation. That, I believe, would be the most dan-

gerous situation we have faced in the four decades since the invention of nuclear weapons.