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ARMS CONTROL**

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George W. Rathjens  
Laura Reed

CENTER FOR  
INTERNATIONAL STUDIES  
MASSACHUSETTS INSTITUTE  
OF TECHNOLOGY  
Cambridge, Massachusetts 02139

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by

George W. Rathjens

and

Laura Reed

Defense and Arms Control Studies Program  
Massachusetts Institute of Technology

Center for International Studies  
Cambridge, Massachusetts 02139

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George W. Rathjens  
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Throughout the whole of the post-World War II period there have been strong differences over aspects of American nuclear policy; notably, about the sizing of nuclear forces, about particular weapons systems (e.g. the B-1 bomber and the MX missile), and most significantly about the role of nuclear weapons in dealing with threats other than that of a direct attack on the United States (i.e., about "extended deterrence" and "nuclear war fighting"). But there were also broad elements of consensus, at least from the Kennedy through the Carter Administrations, on several fundamental points:

- 1.) There could be no effective defense of the American population and social infrastructure against Soviet nuclear weapons. Cities and most other works of humanity were seen to be so fragile and nuclear weapons so powerful that the offense would likely always have the advantage over the defense. Any effort to defend the whole country could be negated by improvements, at less cost, in Soviet offensive capabilities, and likely would be, leaving the U.S. vulnerable to total destruction.
- 2.) This meant that the only real hope of dealing with a possible direct Soviet attack against the United States lay in deterrence through the threat of inflicting punitive damage on the Soviet Union. By the early 60s it had to be accepted that symmetry of sorts was inevitable: that we were destined to live in a mutual hostage relationship, one of mutual assured destruction (MAD) capabilities.

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\*This paper is adapted from one written by one of us (G. W. R.) as a stimulus for discussion for the Exploratory Project on the Conditions for Peace(EXPRO). Although it reflects discussions within that group, the responsibility for it rests entirely with the authors. The first part of the title is drawn from an announcement for one of the sessions of a meeting of the Consortium on Peace Research Education and Development at which G. W. R. spoke, November 9, 1985. The authors are indebted to the Carnegie Corporation for partial support.

- 3.) There was an acceptance of the desirability of strategic arms control based on MAD. Thus a major objective of SALT I, the Vladivostok agreement, and SALT II was to assure stability: to limit the strategic arms competition so as to minimize the impetus in a crisis for either side to attack the other's strategic forces; i.e. to insure that MAD capabilities would not be compromised.

The Reagan years have witnessed significant changes. There has been a breakdown of consensus regarding the role of nuclear weapons. Nuclear deterrence as a basis for policy has been questioned increasingly by those in peace groups, by the American Catholic Bishops,<sup>1</sup> and by some from the right, including notably by President Reagan who has called for the replacement of punitive-based nuclear deterrence by active defense as the keystone of American military policy.<sup>2</sup> In addition, the lack of any substantive progress in arms control negotiations has brought disillusionment on both the left and the right with the prospects of limiting arms through negotiation.

The breakdown in consensus is reflected throughout the body politic.

There is incoherence within the Administration and among its supporters in its approach to nuclear weapons policy, in dealing with the Soviet Union, and in its approach to arms control and disarmament. There has been increased emphasis, already well underway in the Carter Administration, on "nuclear war-fighting" capabilities. We have had the President first advocating a strategic arms reductions proposal (START) with apparent indifference to its impact on "first strike" incentives, albeit at the same time warning of the attainment by the Soviet Union of such capabilities. We then had him

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<sup>1</sup> The Pastoral Letter of the U.S. Bishops on War and Peace, "The Challenge of Peace: God's Promise and Our Response," Origins, N.C. Documentary Service, vol. 13, no. 1, May 19, 1983

<sup>2</sup> Address to the Nation, "Peace and National Security," March 23, 1983, U.S. Department of State Bulletin, vol. 83, no. 2073 (Washington, D.C.)

proposing his Strategic Defense Initiative, the SDI, to "render nuclear weapons impotent and obsolete." This has been supported by some in the Administration, who have conceded that there could be no hope of realization of the President's objective for SDI without an arms control agreement that would impose severe constraints on Soviet offensive forces. At the same time, orthodox pragmatists, desirous of arms control and disarmament agreements based on MAD, have seen the SDI as a bargaining chip that should be used to exact Soviet concessions on strategic offensive forces. Still others, who believe that it may be possible to achieve an exploitable nuclear superiority over the Soviet Union, have supported the SDI presumably not because they are optimistic about the deployment of effective defenses but rather, cynically, because they see commitment to it as consistent with the dual objectives of preventing the realization of arms control agreements and of increasing stress on the Soviet Union. Finally, there are those who see no hope of the President's SDI objective ever being realized who support the program because they believe it is desirable and possible to "enhance deterrence" by defending military assets.

Just as there is incoherence within the Administration and among its supporters, so too is there dissonance in the opposition. Those in the orthodox arms control community continue to believe--with, as noted, some support from within Administration circles--that the best hope for dealing with the Soviet/nuclear problem is through the maintenance of nuclear deterrence, coupled with SALT-type negotiations. Concerned as they are about "the arms race", the "arms controllers" are troubled particularly by the prospect of a breach of SALT limits on offensive forces and especially about the possibility of SDI-related erosion of the ABM treaty. With some overlap, one comes next to the freeze movement. While many have seen nuclear freeze

proposals mainly and simply as vehicles for mobilizing opposition to the policies of the Reagan Administration, there has been the belief at the heart of the freeze effort that qualitative improvements in nuclear arms, as well as increases in number, are dangerous and should be stopped, on a bilateral and verifiable basis. But the freeze appears increasingly to be a movement whose time has passed.

Dating from perhaps the beginning of the second Reagan Administration, concern has shifted increasingly from the arms race to questions of the morality of nuclear deterrence. There appear to be a number of reasons for this: the Bishops' letter, the President's denunciation of deterrence in his Star Wars speech, and the view that the arms race seems less "out of control", with the Congress apparently less willing to give the Administration a free hand with respect to increases in the military budget than it was during the President's first term. There appears also to be increasing concern in many circles about the possibility of nuclear war occurring, notwithstanding the maintenance of robust MAD capabilities. (Note discussions of how nuclear war might come about from such diverse quarters as Richard Nixon<sup>3</sup> and the Harvard "Avoiding Nuclear War" study group.<sup>4</sup>)

Can order be brought out of this chaos? Perhaps, but it is the thesis of this paper that a new and viable consensus, if based either on approaches favored in the Administration or on those of the orthodox arms control community, is unlikely and would, moreover, be undesirable. Punitive

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<sup>3</sup>Superpower Summitry, Foreign Affairs, vol. 64 no. 1, Fall 1985

<sup>4</sup> Hawks, Doves, and Owls, Graham Allison, Albert Carnesale, and Joseph Nye, eds., Norton, New York, 1985

deterrence based on nuclear weapons is morally unacceptable and excessively risky; and any effort to solve the Soviet/nuclear problem primarily through tinkering with arms--i.e. through a technical fix, be it a Star Wars defense, a "build-down" agreement, a nuclear freeze, or some other collection of arms control measures--has to be seen as an illusion. Such efforts reflect the failure to face up to a need for radical change such as was called for by Einstein in his often quoted, but generally heavily discounted, observation of almost 40 years ago that new modes of thinking are needed if we are to deal with "the unleashed power of the atom."

We must turn our attention from arms to the causes of war. If, having done so, we conclude that the potential for affecting the likelihood of catastrophe through changes in military posture is small, though perhaps not negligible, there can be no escaping a fundamental dilemma: the possibility that many initiatives aimed at affecting arms, including arms control efforts, may be so diversionary as to be, on balance, pernicious, even though they may seem desirable from a narrow perspective.

In what follows we elaborate on some of the faults with the four weapons-related approaches--deterrence, arms control, disarmament, and defense--to "our problem", and offer suggestions about changes of emphasis.

### Nuclear Deterrence<sup>5</sup>

Although there has been much speculation--and a number of novels, motion

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<sup>5</sup> Unless otherwise qualified, the term "nuclear deterrence" refers to punitive deterrence, i.e. the threat of punishment in order to deter. This is in contrast to deterrence by denial, i.e. deterrence through having war-fighting capabilities, nuclear or conventional, sufficient so that an attacker can be denied a high probability of achieving his objective.



pictures and television dramas--about how a nuclear war might begin, war planning, weapons acquisition, and approaches to arms control have been largely predicated on two main scenarios: a disarming attack by the Soviet Union against the strategic forces of the United States, and a Soviet attack against Western Europe using conventional forces. These will serve as points of departure for a discussion of nuclear deterrence.

The first possibility has had disproportionate emphasis in U.S. strategic forces planning (and it might be added, in approaches to arms control and disarmament). This may be a legacy from Pearl Harbor, but it is probably mainly due to two other considerations: the fact that disarming attacks (particularly those directed at land-based strategic forces) are peculiarly susceptible to simple quantitative analysis; and the belief, widespread particularly during the period of American nuclear superiority, that such an attack would be the most worrisome imaginable. If we could be confident that no such attack could succeed, we would be able to deal with all other threats by "unleashing" SAC, the Strategic Air Command, or, more likely, through deterrence, i.e. as a result of its being apparent that we might do so.

By the 70s, many had begun to question the necessity or the wisdom of relying on nuclear deterrence to prevent war that might be initiated by a Soviet disarming attack, and some--e.g., Fred Ikle<sup>6</sup>--questioned it on both grounds. The necessity is questionable on the grounds that such attacks would not be initiated by a rational leadership, given the enormous uncertainty in expected effectiveness and, indeed, the unlikelihood of success, considering the redundancy of forces that would have to be attacked and the virtual

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<sup>6</sup>Foreign Affairs, vol. 51, no. 2, January, 1973

impossibility of large scale military preparations going unnoticed. The wisdom of the whole concept of nuclear deterrence (and the force planning associated with it) is questioned on the grounds that it is predicated on the assumption of rational adversary leadership, even though we know from the record that political leaders have often behaved in ways that we consider irrational.

But notwithstanding such criticisms and widespread incredulity about the seriousness of "the threat", the "first-strike" scenario has had great impact on weapons acquisition and deployment decisions and on approaches to arms control. This follows because, to the degree that one takes the scenario seriously, the details of force posture should matter. The less vulnerable strategic forces are to a "first strike", the greater their effectiveness as a deterrent. But the greater the counterforce capability of strategic forces, the less is their suitability for deterrence because of the reciprocally reinforcing incentive to strike first in crises. (Hence, the arguments against missiles like the SS-18 and the MX). And, in general, the larger the forces, the more they are likely to be stabilizing. (The obverse of this is that small nuclear forces--or even nascent nuclear programs--may be tempting targets in confrontational situations; witness Israel's attack against Iraq's Osirak reactor.)

Thus, believers in the "first-strike" scenario see it as an important factor, even the determinant in weapons acquisition and arms control decisions. Others find the scenario a useful one for "selling" weapons programs they favor, whatever their real reason for wanting them.

But the most demanding role for nuclear weapons is in "extended deterrence". There have always been two views about this.

There is, first, the belief (or the hope), prevalent mainly among

Americans, especially military planners, that nuclear weapons can be used to affect military operations in a favorable way. Implicit in this view are the concepts of "flexible response" and "escalation dominance": the contention, or at least the hope, that having superiority in capabilities at all levels of conflict can deter an adversary from escalatory actions, thereby permitting the possessor of the superior capabilities to use them, if necessary, in a limited and flexible way.

But a policy based on this concept is open to most serious questioning on two counts:

- 1.) there is not the slightest reason to believe that either the Soviet Union or the United States would allow the other to develop dominance across the whole spectrum of conflict. Any attempt could only result (as, indeed, it has) in a costly and indecisive arms race; and
- 2.) in the fog of war, unwanted escalation is likely. This no doubt applies especially to the European theater, considering the magnitude, density and diversity of military capabilities deployed there by the two alliances. It is inconceivable that nuclear weapons could ever be used on a large scale, many of them against fleeting, time-urgent targets, in a coherent way without a considerable delegation of authority for such use to field commanders and probably the redeployment of some forces. Yet, once such preparations for coherent use are taken, it is unbelievable that it would continue to be possible to maintain tight central control over the use of such weapons. Moreover, the potential for unwanted escalation will almost certainly increase if the firebreak between the use of conventional and nuclear weapons erodes, as seems likely;<sup>7</sup> and this may well carry over into war in other theaters, including naval operations.<sup>8</sup>

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<sup>7</sup> This tendency is probably inevitable and irreversible given improvements in target location, data processing, and guidance systems that make it increasingly realistic to contemplate destroying point military targets, including nuclear delivery systems, with conventional weapons rather than by covering large areas (or volumes) with nuclear effects. The implications of the trend ought not to be overstated, but it does suggest that in the early stages of conflict there may be heavy and effective non-nuclear attacks against nuclear delivery capabilities, a possibility already being reflected in planning by NATO and Warsaw Pact forces. The obvious inference is that there will likely be an increased propensity to use nuclear capabilities rather than lose them.

<sup>8</sup>The possibility of escalation as a result of attacks by and on naval forces is discussed in an illuminating paper by Barry Posen, "Inadvertant Nuclear War? Escalation and NATO's Northern Flank", International Security, Volume 7, Number 2, Fall 1982.

The alternative view of the role of nuclear weapons in extended deterrence seems more plausible. In this view, the prevalent one among political leaders and especially Europeans, the role of nuclear weapons is not to deny an adversary the realization of military objectives but rather to make unacceptable punishment so credible as to deter attack in the first place. This is not to suggest that the threat of nuclear escalation will ever be totally incredible. For as long as nuclear weapons, or even prospects of production, exist, some sort of deterrence -- what McGeorge Bundy has called "existential deterrence"<sup>9</sup>--will always be operative; but the likelihood of escalation of conflict to the point where nuclear weapons will be used is, of course, susceptible to manipulation by, e.g., diffusion of nuclear weapons and authority and capacity to initiate their use.

The fundamental problem with extended deterrence is in setting the probability of escalation at the appropriate or "right" level. If it is too low--if the use of nuclear weapons is not sufficiently credible--they may not serve to prevent conflict; witness Korea, Vietnam, Afghanistan and the Falklands/Malvinas war. If deployments, command and control arrangements, and doctrine are such that the probability of use is high, nuclear war may be triggered by events that are below the intended threshold of deterrence. A fundamental criticism of extended deterrence is that there may be no acceptable probability: a level low enough to be "safe" may not deter; a level sufficiently high so as to deter may involve too great a risk of inadvertent catastrophe. Equally troublesome is the fact that it will never

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<sup>9</sup> "Existential Deterrence and its Consequences," The Security Gamble, edited by Douglas MacLean, Totowa, N.J., Rowman and Allanhead, 1984.

be possible to set the probability at a level that might be judged desirable with anything remotely resembling precision, given that the probability will generally depend in complex ways on actions by both sides. Indeed, it may not even be clear whether some changes in weapons deployment, command and control, and/or doctrine will result in an increase or decrease in the likelihood of nuclear war. Thus, most of those who favor NATO's renouncing the possibility of first use of nuclear weapons argue that such a change in policy will make their use less likely in the event of conflict in Europe, while proponents of a first use policy argue that a change would increase the likelihood of conventional conflict and therefore, the consequent risks of escalation involving nuclear weapons. Thus, the overall effect of such a change in policy on the likelihood of nuclear war must be contentious and, from a logical perspective, indeterminate.

The thoughtful reader may object that partitioning the extended deterrence problem between deterrence based on superior war-fighting capabilities and deterrence based on punitive damage is a bit too neat. This may be right, perhaps particularly with respect to conflict in theaters outside of Europe. With respect to any given threat, deterrence may be operative because of a combination of fear of military defeat and fear of punitive damage. But no matter. Although weapons deployments, doctrine, etc. may differ depending on which concept one believes in or wishes to emphasize, the basic fact remains: extended deterrence based on nuclear weapons is a very chancy proposition. There can be no way of assuring that unwanted adversary actions can be deterred without there being a concomitant, and, in our view, unacceptable, risk of conflict and destruction grossly incommensurate with the stakes at issue.

We are led, then, to questions of morality, not only of extended

deterrence, but of nuclear deterrence in all its manifestations.

Critics generally argue that threatening societal destruction as a means of deterring offensive acts by an adversary is immoral on two grounds: that the threatened damage is disproportionate to the objectives and that the main victims may be non-combatants who may have had little or no role in the instigation of the events that trigger their destruction. There are obvious counters to these arguments. First, the threat may not be disproportionate when account is taken of the uncertainty that a retaliatory attack will actually occur (If there is a 10% chance of inflicting 10 times the damage appropriate to the stakes at issue and if once a provocative act has occurred it is pragmatically impossible for political or high military authorities to affect the likelihood of use of nuclear weapons, is that threat disproportionate?) Second, in modern war, is it any more immoral to kill and maim non-combatants than draftees? Still, for many, the morality argument will be sufficient and decisive; never mind those relating to risk and effectiveness.

The morality argument may, however, be undercut with changes in weapons allocation policies. There has developed within the Reagan Administration the view that the Soviets may be more effectively deterred from taking actions contrary to Western interests by threatening the centers of Soviet political and military control than by threatening other elements of social infrastructure and population. And with the dramatic improvement in the accuracies with which nuclear weapons can be delivered, and with that, reductions in yield (the average yield of American "strategic" weapons fell from 2.3 megatons in 1961 to 0.35 in 1982), there are at least conceptual possibilities for threatening fewer innocents and for getting around the proportionality argument against nuclear deterrence.

The foregoing critique suggests that basing policy on nuclear deterrence warrants serious questioning on the three counts of effectiveness, risk and morality. It is just such questioning that has undermined, if it has not broken, the consensus among the American public (and among Europeans as well).

But the arguments against nuclear deterrence are much stronger than suggested. This will become apparent as we consider how the arguments change as we put aside the simple bipolar model of the world on which all of the foregoing discussion has been based and replace it with a richer model. And put it aside we must, for a world in which key decisions that may lead to the large scale use of nuclear weapons will be made exclusively by the political leaders of the main nuclear powers is increasingly unrealistic. More and more, important decisions are being made by other nations and sub-national entities over whom the superpowers have little control. It is increasingly, and probably rightly, believed that if there is to be a nuclear war that will engulf the two superpowers, it is likely to have its origins in a catalytic or instigating event involving a third party, very likely a client state or "satellite" of one of the superpowers. Thus, it may be more likely that a nation in the Middle East, or the PLO, or Solidarity, or other dissidents in Eastern Europe would take action that threatens peace and security than that either superpower would make a calculated decision that a military attack could be carried out with advantage. Alluding to a perhaps overworked and simplified analogy, we may have reason to worry more about a World War I-type scenario leading to a nuclear holocaust than about its resulting from a World War II-type deliberate attack. The critical point in discussing the efficacy of deterrence is that it is implausible that developments such as the Sarajevo assassination, the rise of Solidarity, or Arab-Israeli conflict would have been, or will be, much affected by the nuclear postures of the two

superpowers. It is true that their propensity to intervene, or to allow themselves to be drawn into such conflicts, may be affected by their assessments of the nuclear balance, but the opportunities for the greatest leverage in averting catastrophe are likely to have been at earlier stages, where nuclear postures are largely irrelevant.

If the "last clear chance", or even the greatest hope, is in those earlier stages, is it either morally acceptable or pragmatically desirable to base policy on threatening either the population or the political/military leadership of the adversary superpower with nuclear attack? Certainly not.

But if not through deterrence alone, how else can we deal with the problem of security in a world of nuclear weapons and conflict between nations? The orthodox answer has been through arms control based on deterrence.

### The Problems with Traditional Arms Control

With over twenty-five years of more-or-less serious efforts to reach agreement with the USSR (and other nations) to limit nuclear arms, the record has been dismal and the lessons unencouraging. The Limited Test Ban Treaty (LTBT) of 1963 and the Anti-Ballistic Missile (ABM) Treaty of 1972 are perhaps the most important arms control agreements of the period. Yet, while the Limited Test Ban Treaty has been useful as an environmental protection measure, it has been of almost no importance in limiting weapons' development and of only marginal importance in limiting research on weapons' effects. The ABM Treaty has probably reduced concern somewhat about the possibility of adversary deployment of ABM defense, but this agreement is mainly a reflection of the fact that neither the US nor the USSR saw much technical promise in ballistic missile defense anyway.



One other treaty has commanded considerable approbation, at least in the United States: the Nuclear Non-Proliferation Treaty of 1970 (NPT). But such support has its basis more in hope than in effect. Most of the countries of concern--India, Pakistan, Brazil, Argentina, Israel, and South Africa--are not parties to the treaty; and in the case of some others that are signatories--Iraq, South Korea and Libya--there have been doubts about its adequacy. Moreover, it is hard to identify instances where the treaty has had any effect in slowing the spread of nuclear weapons. Instead, the NPT has codified the nuclear status quo. In addition, the general acceptance of non-compliance with its article VI which calls for "cessation of the nuclear arms race at an early date" casts doubt on the importance the superpowers, and others, attach to the treaty.

Other main arms control efforts--SALT I, SALT II, START, the INF negotiations--have attempted to limit offensive nuclear forces. Certainly neither of the two SALT agreements has had any significant effect on the magnitude of damage that would be expected should a nuclear war occur, and it is doubtful if either has significantly enhanced deterrence or strategic stability, despite the fact that these goals have been the central objectives of US efforts for strategic arms limitation going back to the end of the Eisenhower Administration.

Indeed, it is doubtful if arms control has had much effect at all on major weapons programs. While American proponents of SALT have claimed that the agreements imposed important constraints on the Soviet Union, it is impossible to know whether the Soviets have scrapped some of its weapons in order to stay within SALT limits or whether they have done so because of obsolescence. Unsurprisingly, critics of SALT have argued, without effective challenge, that the agreements have not prevented the Soviet Union from going ahead with its

weapons modernization program. Administration witnesses, in testimony before Congressional Committees, have made similar claims that the agreements would not interfere with any preferred US weapons programs. This appears to have been almost literally true. It was not until the fall of 1985--just months before the expiration date of the SALT II Treaty--that the US was forced, in order to stay within the SALT limits, to give up a Poseidon submarine to make way for a new Trident submarine. (Even this move faced opposition by Secretary of Defense Weinberger and others in the Administration.)

The START and INF negotiations of the Reagan Administration, were of course, total failures as regards arms control, although both might be counted successes in some circles inasmuch as they made it possible to sustain support for some weapons programs--rationalized as being needed for bargaining with the USSR--that would not otherwise have been likely to survive public opposition. While both negotiations have virtually come to a standstill, the possibility of a START agreement continues to be used by the Administration in soliciting support for its strategic modernization programs which are rationalized as being needed to bargain with the USSR "from a position of strength."

What accounts for this dismal record? By and large, the efforts at arms control have been predicated on the belief that numbers and detailed performance characteristics of weapons are important. Beyond contributing to complicated and prolonged negotiations, the significance placed on differences in capabilities has been exaggerated to the point where political leaders and the public have been led to believe that such differences could be exploited militarily, when almost certainly they could not be. Can one really believe that an American president (or the Soviet leadership, or that of a third country) would behave very differently in a crisis if the United States had no

MX missiles, or a thousand instead of the number now envisaged; or if the Soviet Union had never developed the SS-20, or alternatively had thousands of them? It is most unlikely.

In keeping with the myth of the significance of small differences in force posture, verification has assumed unwarranted importance.

Moreover, it has proven virtually impossible to reach agreements where major asymmetries in military posture exist, as was manifest in the INF negotiations of 1980-83. It is only recently, as it has seemed that the NATO build-up would be completed without major change, that there is more hope of agreement; and even with this change the prospects remain cloudy, in part because of the asymmetry inherent in Britain and France having independent nuclear forces.

Throughout SALT, and in START as well, there has been a tendency to treat improving strategic stability as virtually synonymous with mitigating the ICBM vulnerability problem. As a result, a major focus of arms control efforts has been an attempt to affect strategic force postures (especially that of the Soviet Union) so as to deal with this perceived problem. Thus, there has been a continuing interest in trying to limit the number of "heavy" Soviet ICBMs due to the fear that they might carry a large number of MIRVs (multiple independently-targeted reentry vehicles). The US has also attempted to get the Soviets "out to sea," that is, to get the USSR to emphasize SLBM forces at the expense of ICBMs, in the belief that the former would pose less of a threat to American ICBMs.<sup>10</sup>

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<sup>10</sup> As evidence of the above concerns, several particulars are noteworthy. The "freedom to mix" conditions in SALT I, the Vladivostok agreement, the Carter "comprehensive" proposal of 1977, and SALT II, were designed to permit the replacement of ICBM launchers by SLBM launchers but not vice versa. The "counting rules" for SALT II were developed to limit the numbers of MIRVs per launcher. And, the "build-down" proposals of the last couple of years gave preferential treatment to single warheads as compared with MIRVs, and preference to MIRVs on SLBMs as compared to MIRVs on ICBMs.) Nuclear freeze proposals have also allowed for the replacement of missile-launching submarines but not of ICBM launchers.

But neither the US nor the USSR was very eager to seize what was surely the greatest opportunity of the last two decades to deal with the ICBM vulnerability problem: i.e., to agree in SALT I to limit the development and deployment of MIRVs, even though the unfortunate implications were easily anticipated and widely discussed. This failure is perhaps the most dramatic evidence that neither power seems prepared to forego weapons systems that are technically attractive, whatever their impact on stability. We may have a similar example in the Reagan Administration's intransigence on limiting anti-satellite (ASAT) development and deployment.

In summary, the evidence of the last twenty-five years points overwhelmingly to the shortcomings of efforts that focus on constraining the development and/or deployment of weapons themselves (or, in the case of the NPT, on limiting access to the materials out of which they can be made) rather than on the reasons nations desire to acquire and would potentially use these weapons. While there have been some modest successes--the CTB and ABM treaties are undoubtedly worthwhile--the agreements reached so far have done little, if anything, to reduce damage should war occur or the cost of maintaining military establishments, two of the generally accepted objectives of arms control and disarmament. As for the third, that of making nuclear war less likely, the record is no better.

Probably the most that we can hope for from further arms control efforts along the lines of SALT or, for that matter, START (and, we would extend this to a nuclear freeze) is conclusion of agreements that would lead to some general improvement in Soviet-American relations and perhaps in each of the superpower's relations with other nations. On the record, however, there is

no reason to believe that such improvement will be of long duration.<sup>11</sup>

Further light on negotiations is to be found in four agreements which are generally not considered in discussions of arms control efforts but which in the view of many observers have been more successful than the mainstream "strategic" efforts. We refer to the negotiation of the Austrian State Treaty (1955), the resolution of the Cuban missile crisis (1962), the normalization of relations between the US and the People's Republic of China (1972), and the Camp David agreements (1977).

The Austrian State Treaty has made it unlikely that a crisis in one small part of the world will be a *causus belli*. Had similar agreements been possible in other parts of Europe, we would all feel more secure about peace on that continent. The treaty is more important than any we are likely to agree to relating to numbers of missiles or their characteristics. It illustrates both the importance of focussing on political arrangements and of trying to minimize the likelihood of crises.

The resolution of the Cuban missile crisis actually did affect deployment of both Soviet missiles in Cuba and American missiles in Turkey. While there has been a wealth of discussion of the crisis, a most important point is that the time required for negotiations was so short that, in contrast to other arms control negotiations, strong constituencies for particular positions and

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<sup>11</sup>One of us (GWR) has spoken and written elsewhere on problems with arms control and security, e.g. Nuclear Arms Control Agreements: Process and Impact, with Abram Chayes and Jack Ruina, Carnegie Endowment for International Peace, Washington, D. C., 1974; "Are Arms Control Negotiations Worthwhile?", Before It's Too Late: The Challenge of Nuclear Disarmament, edited by Paul Abrecht and Ninan Koshy, World Council of Churches, Geneva, 1983; and "Arms, Defense Policy and Arms Control", an address at the University of Wisconsin-Madison, University Forum: World Without War: Political and Institutional Challenges, edited by Peter Dorner, Madison, Wisconsin, March 1984.

for new weapons programs had no opportunity to develop.

In the case of the normalization of relations between the US and the People's Republic of China, we managed to push ideological differences aside in deciding that we had more to gain through cooperation than through confrontation. We are left with the interesting questions of whether the change in climate will persist; whether it would have come about had both countries not had differences with the Soviet Union; and whether such a dramatic and rapid reversal might be possible in Soviet-American relations given the new leadership in the Soviet Union. It is noteworthy that existing force postures and possible changes in them appear to have been irrelevant to the process of changing the Sino-American relationship.

While one must still be cautious in drawing conclusions about the Camp David Agreement, even pessimists will concede that it was a significant factor in reducing the likelihood of another Arab-Israeli war. Moreover, it may well have been the greatest non-proliferation success of the Carter Administration in that the impact on Egypt's interest in nuclear weapons and conceivably on the nature of the Israeli program, probably dwarfed anything else that the Administration was able to do to affect the proliferation of nuclear weapons to additional countries.

In concluding a critique of arms control, it is perhaps worth giving a little more attention to the nuclear proliferation problem. There are two reasons why it is likely to be one of increasing gravity absent major changes in world politics. The credibility of the superpowers as guarantors of the security of other states is likely to erode, and the technology for nuclear weapons production will become increasingly accessible in the 1990s. In the recent past there have been only three or four nations that have had both the resources and a strong motivation to acquire nuclear weapons (India, Israel,

South Africa and perhaps Pakistan) but the number meeting both criteria will grow. And, it is hard to refute the arguments for beleaguered nations moving in this direction. While nuclear weapons may not be very useful for "compellance" or as offensive weapons (they have been of no value for the United States in Vietnam or for the Soviet Union in Afghanistan), it does seem plausible that they can be a cheap and effective deterrent of last resort. Would the Arab states, if they had overwhelming superiority in conventional strength some years hence, really take the risk of pushing the Israelis into the sea, given an Israeli nuclear deterrent capability? It is doubtful.

At issue is how best to deal with the proliferation problem. The main focus of effort in the Ford and Carter Administrations, and to even a greater degree in Congress, was the attempt to prevent proliferation through the denial of sensitive technologies and critical materials. But, as suggested in the reference to Camp David, one may do better by addressing the sources of potential conflict and the impetus to acquire nuclear weapons.

This is not to suggest that efforts to prevent or slow the proliferation of nuclear weapons by restricting access to critical materials and technologies is necessarily counterproductive or destined to fail. There can be the possibility of at least buying time, as has almost surely happened in the case of Pakistan where denial efforts have almost certainly been an impediment to the early realization of a weapons capability. But there can be a significant pay-off in buying such time only if it is used to reduce the motivation to acquire nuclear capability, for ultimately one must expect that most nations determined to acquire such a nuclear capability will succeed. Most importantly, reducing the motivation to pursue a nuclear weapons program is best accomplished through political means: the provision of security guarantees and/or the resolution of differences with potential adversaries.

### Disarmament

If one is so pessimistic about arms control, can one be more optimistic about nuclear disarmament? The answer must be a qualified 'yes'.

Reductions in levels of strategic forces by 50% or so, as have been suggested in recent Soviet and American proposals, would not necessarily make much difference in the levels of damage to be expected in the event of war. Nor is there reason to believe that such cuts, even if they involve selective reductions in "counterforce" weapons, would necessarily make much difference in the likelihood of a nuclear holocaust. As noted earlier, the risk of a nuclear conflict will be much less a function of strategic force posture than of other factors.

But cuts to "minimum deterrence" levels (i.e. to levels as low as possible without major changes in political relationships), would be more significant, even if they did not lead to changes in the likelihood of war, in that they would be likely to lead to reductions in expected damage levels.<sup>12</sup> While, in the view of many, such reductions would be significant (Some years ago, one of us, G. W. R., concluded that 90% reductions in 1985 strategic force levels would likely mean reductions in fatalities in the event of large-scale nuclear war by factors of around two to ten, depending on the scenario.)<sup>13</sup>, reducing

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<sup>12</sup> In drawing this conclusion, we put aside the possibility of disastrous "nuclear winter" effects. While such effects can not be excluded on the basis of present knowledge, it is unlikely that they would be large in the case of the combatant states compared to more direct effects. There is no possibility, in our judgment, that they would be so severe as the more dire prognostications of Ehrlich, Sagan, et. al., (as in, The Cold and the Dark: The World After Nuclear War, Paul R. Ehrlich, Carl Sagan, Donald Kennedy and Walter Orr Roberts, New York, Norton & Company, 1984).

<sup>13</sup> "The Conditions for Complete Nuclear Disarmament: The Case for Partial Nuclear Disarmament," A New Design for Nuclear Disarmament, William Epstein and Toshiyuki Toyoda, eds., Spokesman, Nottingham, England, 1977.



arms to minimum deterrent levels would hardly be the solution to the nuclear problem.

Moreover, to the degree that force levels are significant, lower levels may be more worrisome than higher levels. They may imply less stability. Although we would discount this line of argument heavily in the case of forces involving thousands or even hundreds of weapons (much less tens of thousands, which the superpowers would each have, even after 50% cuts), one can imagine a situation with countries possessing less than a dozen weapons each, where there might be enormous advantages in striking first in a crisis, and perhaps even some hope of disarming the adversary.

There have been, of course, suggestions for going still further with nuclear disarmament, e.g. Jonathan Schell's proposal for the total abolition of nuclear weapons<sup>14</sup> and General Secretary Gorbachev's disarmament proposal of January 15, 1986.<sup>15</sup> Schell argues that even if all nuclear weapons were destroyed, there would still be a kind of effective nuclear deterrence due to the possibility that new weapons might be assembled if two nations became engaged in a confrontation; not perhaps the best of all worlds, but a situation that would be tolerable. One could have the deterrent effect of nuclear weapons, but there are two reasons why there would be a much reduced likelihood of their use. Nations would not need to worry about preemptive disarming attacks as crises developed, and there would be a substantial time

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14 Johnathan Schell, The Abolition, Knopf, New York, 1984.

15 Statement by Mikhail Gorbachev, News and Views from the USSR, Press Release, January 16, 1986. General Secretary Gorbachev proposed a phased reduction in nuclear arms, with their ultimate elimination by the year 2000.

for addressing and resolving differences before weapons could be used.

The thesis is flawed in important respects as is Gorbachev's disarmament proposal. First, the time required for nations to assemble weapons would vary enormously from one country to another. Without a major change in political relationships, less industrialized countries would, therefore, be unlikely to give up weapons, even if more advanced states did so. Could China give them up, given that the USSR (and the US) would for many years have greatly superior production facilities? Second, the time required for weapons production could be shortened by advance preparation. As crises developed, would we not have something akin to the mobilization that preceded World War I, and a period of great instability as the realization of nuclear weapons capabilities seemed imminent? Third, in a world where most nations had no weapons, retention (or production) of a few by others could give them great advantage. How could one possibly verify compliance with a total abolition without procedures that would imply radical changes in political relationships?

One can think of going still further, beyond just nuclear disarmament to general and complete disarmament (GCD). If considered a means to the realization of a peaceful world, GCD suffers from the same defects (and more) that apply in the case of nuclear disarmament. As many have pointed out, it is probably better viewed as an end that can be expected if it ever becomes possible to develop a world order system that includes effective means for the peaceful resolution of differences.

#### Defense as an Alternative to Nuclear Deterrence

In his Star Wars speech of March 1983 in which he launched his Strategic Defense Initiative (SDI), President Reagan called for an active defense with

the objective of "escaping the nuclear nightmare by going from deterrence based on offense or the threat of retaliation to deterrence resting on defense or the security of protection." This entails a defense so effective as to render nuclear weapons "impotent and obsolete." While the President said nothing about the defense being space-based, much of the effort since has focused on space-based components. That and emphasis on lasers and directed-energy weapons led to the Star Wars sobriquet. Although ostensibly still a research program, the Administration plans to spend about \$26 billion over the next five years on SDI and has made it clear that SDI is "not an optional program at the margin of the defense effort. It's central. The one and one-fifth percent of the budget that it requires for the coming fiscal year will build the very core of our long-term policy for reducing the risk of nuclear war."<sup>16</sup>

It should be obvious that the defense must be perfect in order to meet the President's objective, i.e., it must be 100%, not just, say, 99 or 99.9% effective. And it must be this effective against all means of delivery of nuclear weapons against all targets in which the US might have an interest. This follows because if nuclear weapons are to be rendered impotent and obsolete decision-makers everywhere--in the United States, the Soviet Union, and other countries--must be able to behave as if nuclear weapons did not and could not exist, and people everywhere must be able to live without concern about them. With delivery of a single weapon sufficing to destroy a city, how

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<sup>16</sup>Fred Ikle, Undersecretary of Defense for Policy, in testimony to the Senate Armed Services subcommittee on strategic and theater nuclear forces on February 20, 1985, cited by Bill Keller in the New York Times, February 22, 1985.

else could this come about except that there be no possibility of delivery?

But virtually no one with either responsibility or knowledge--with perhaps the exception of President Reagan--believes that such an effective defense is feasible. The result has been ambiguity--perhaps, more accurately, doublespeak--about the objective of the President's initiative. Conceding the infeasibility of a perfect defense, most supporters defend the program on the grounds that it can enhance nuclear deterrence (and it is generally obvious that they mean deterrence based on an ability to retaliate, i.e., punitive deterrence), despite the fact that the President and Defense Secretary Weinberger, in contrast, have made it clear from the outset of the program that in their view the objective is not a partial defense that might contribute to such deterrence but rather a defense that can replace it: a defense so effective as to deny the Soviet Union the ability to inflict damage on the United States (or its allies).

With the President holding out one vision of the goal of SDI while most other proponents are making much more modest claims for the program, the debate has become confused. As a result, it has now become common to refer to two versions of SDI: SDI I, a defense consistent with the President's vision; and SDI II, a limited defense of strategic forces, command and control facilities and other military assets in order to enhance the ability of the US to strike back after a Soviet attack.

Confusion about the objective of SDI has been compounded in the last year by references to "interim deployment plans", the intent of which is clearly to provide a partial defense, mainly or exclusively of military assets. In an introduction to a White House SDI pamphlet of January 1985<sup>17</sup> the President

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<sup>17</sup> The White House, The President's Strategic Defense Initiative, GPO, January 1985, Washington, D.C.

essentially reiterates his earlier position, but this is followed by a text where the emphasis is on enhancing deterrence because the defense might "increase an aggressor's uncertainty regarding whether his weapons would penetrate the defenses and destroy our missiles and other military targets."

The confusion and inconsistency concerning the goals of SDI could be greatly reduced if the Administration would be scrupulous in distinguishing between punitive deterrence and deterrence through denial (see footnote 5) when commenting on SDI objectives. Clarification would, however, not likely serve the Administration's interest. If SDI is intended to enhance punitive deterrence, the program, i.e. an SDI II program, would be inconsistent with the President's vision and would lose much of its popular support; if the intent is deterrence to deny an adversary the ability to deliver nuclear weapons, the program, (i.e. an SDI I) would lose most of the support it now commands in the defense community.

Many defenders of the SDI, incidentally are so persuaded that only SDI II makes sense that they argue that to criticize SDI I, the President's version, is to attack a straw man (or a dead horse). But for the purposes of this paper it is only SDI I that is of interest.

If all that the country envisaged was simply SDI II, as distinguished from the President's version, SDI I--it would hardly imply a radical shift in US policy. Such a limited defense was rejected in 1975 with the dismantling of the limited Safeguard defense at Grand Forks, North Dakota. Although there has been a continuing R&D effort on such defense since then, the possibility raises only marginal questions in defense management: whether particular US military assets are likely to be excessively vulnerable to attack; whether the preferred remedies should involve active defense or other options--greater hardening, redundancy, or mobility, etc.--and; finally, if defense, of what

design? SDI I raises, as the President intended, more fundamental questions.

Both SDI objectives raise the question of why defense is so difficult.

Paul Nitze has explained this succinctly in a qualified defense of the SDI.<sup>18</sup>

The technologies must produce defensive systems that are survivable; if not, the defenses would themselves be tempting targets of a first strike. This would decrease, rather than enhance, stability.

New defensive systems must also be cost-effective at the margin, that is, it must be cheap enough to add additional defensive capability so that the other side has no incentive to add additional offensive capability to overcome the defense. If this criterion is not met, the defensive systems could encourage a proliferation of countermeasures and additional offensive weapons to overcome deployed defenses, instead of a redirection of effort from offense to defense.

Nitze observes that we do not now have such technologies and, in a monumental piece of understatement, concedes that his two criteria are demanding. Like the President, however, he expresses the hope and expectation that "the scientific community can respond to the challenge." He offers nothing in support of his expectation and, as will be apparent from technical critiques of the program<sup>19</sup> there is little, if any, basis for hope.<sup>20</sup> This will be especially the case to the extent that the focus is on perfect defense, for the cost-effectiveness arguments to which Nitze refers militate increasingly against the defense, the lower the level of damage that is acceptable. (If the criterion were to lose not a single city, the offense could concentrate the full weight of its attack on any target of its choosing, while the defense would have to defend all potential targets, each with sufficient force to cope

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<sup>18</sup> On the Road to a More Stable Peace," Speech to the Philadelphia World Affairs Council, February 20, 1985.

<sup>19</sup> See next page.

<sup>20</sup> See next page.

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- 19 Ashton B. Carter, "Directed Energy Missile Defense in Space," Background Paper prepared for the Office of Technology Assessment, Congress of the United States, Washington, D. C., April 1984.
- Sidney D. Drell, Philip J. Farley, and David Holloway, The Reagan Strategic Defense Initiative: A Technical, Political, and Arms Control Assessment, Stanford University, Stanford, California, July 1984.
- Hans A. Bethe, Richard L. Garwin, Kurt Gottfried and Henry W. Kendall, "Space-based Ballistic-Missile Defense," Scientific American, Volume 251, Number 4, October 1984.
- Sidney D. Drell and Wolfgang K. H. Panofsky, "The Case Against Ballistic Missile Defense", Issues in Science and Technology, Fall 1984.
- Harold Brown, The Strategic Defense Initiative: Defense Systems and the Strategic Debate, Survival, Vol. XXVII, No. 2, March/April, 1985.
- F. A. Long, Jeffrey Boutwell and Donald Hafner editors, Weapons in Space, W. W. Norton, New York, 1986; also Daedalus, Volumes I and II, American Academy of Arts and Sciences, Cambridge, Massachusetts, Spring and Summer 1985.
- James R. Schlesinger, "Rhetoric & Realities in the Star Wars Debate", International Security, Volume 10, Number 1, Cambridge, Massachusetts, Summer 1985.
- Office of Technology Assessment, Congress of the United States, Ballistic Missile Defense Technologies, Washington, D. C., September 1985.
- Harold Brown, "Is SDI Technically Feasible?", Foreign Affairs: Vol. 64, number 3, 1986.<sup>18</sup>

- 20 While it is not our purpose here to dwell on the technical problems of SDI, it is perhaps worth calling to the reader's attention the extreme difficulty of meeting Nitze's first criterion in a competitive environment. Because of the likelihood that large numbers of reentry vehicles and decoys would be released very early in missile trajectories, and the great difficulty of dealing with them, any highly effective defense will almost necessarily depend heavily on destruction of missiles in the boost phase or very shortly thereafter. This will almost necessarily depend on the defense having some satellite-based components and these will be highly vulnerable. Assuming some symmetry in capabilities, this means that it will likely be far easier for either side to destroy the adversary's defense than to destroy its offensive forces.

with the whole of its adversary's offensive capability.) And even if technologies could be developed that appear to meet Nitze's criteria, and on this basis we were to go ahead with a deployment, could we ever have confidence that the defense would work as expected, given that it could never be tested in a simulation that would remotely resemble a real attack? Of course not.

Efforts to replace nuclear deterrence by defense must be seen, then, charitably, as a triumph of uninformed hope and appropriate revulsion about deterrence over reality, or at worst, as a hoax: in any case, as a quintessential example of an effort to apply a "technical fix" to a problem not susceptible to such a solution.

### The Challenge and The Hope

In considering near-term change, visions of where we want to go are clearly important, maybe critical, but even without consensus on ultimate objectives, something can usefully be said about preferred directions for the near term. In an attempt to do so, some reiteration of points made earlier may be in order. We have suggested

- (1) that defense against nuclear weapons that is so effective that it can replace nuclear deterrence--so effective as to "render nuclear weapons impotent and obsolete"--is an illusion;
- (2) that both the capability and impetus to acquire nuclear weapons is likely to spread to an increasing number of nations;
- (3) that an erosion in the "firebreak" between nuclear and conventional weapons seems inevitable; and
- (4) that a major war involving the large scale use of nuclear weapons is far more likely to arise out of actions by third parties, over which the present nuclear weapons states may have little or no control, than as a result of a calculated decision by one of the nuclear weapons states that it could use nuclear weapons advantageously.



This final argument (4) undercuts decisively whatever case there may be for extended nuclear deterrence as a keystone in security policy. One is driven to the conclusion that reliance on such deterrence is unacceptable on both moral and pragmatic grounds. The above-stated arguments concerning the erosion of the firebreak and the likelihood of war stemming from the action of third parties (3 and 4) lead to the conclusion that the points of greatest leverage in preventing a nuclear holocaust are likely to be in the prevention and nonviolent resolution of crisis. Thus, a more appropriate locus for attention is the avoidance of any significant military conflict rather than the point when nuclear weapons have already been used or are about to be used. Ultimately, this must mean the abolition of war.

The above-stated arguments (and the historical record) also suggest that attempting to deal with the dual problem inherent in the existence of nuclear weapons and a difficult adversary through measures affecting arms--whether those measures involve increases, decreases, or constraints and whether they be unilateral, bilateral, or multilateral--are not likely to be very effective. The erosion of the distinction between conventional and nuclear ordnance suggests that this is especially likely to be the case if the focus of arms control is limited to nuclear weapons systems.

Questioning our priorities in dealing with the Soviet Union is therefore in order. In our arms control efforts we have given the greatest weight to the question of Soviet strategic forces (those that can hit the US); second priority to intermediate range nuclear forces (SS-20's, etc); third, to conventional forces; and fourth, to "confidence building" measures. At an even lower priority have been efforts to reach agreement with the Soviet Union on codes of behavior, the role of each in specific trouble spots in the world, and, more generally, in improving relations between the two countries. The

ordering should probably be totally reversed.

And, we should be relatively less concerned than we have been about the details of the Soviet-American nuclear balance and more about potential problems in third countries, especially around the periphery of the Soviet Union, and in the Middle East, i.e., in countries where there is a potential for conflict and where one or both superpowers might intervene. It is far more important to try to reach understandings about non-intervention and rules of behavior than about weapons.

The reader may well concede that we have made little progress in dealing with "our problem" by focusing on arms, but is there any basis for optimism about focusing on the other end of the spectrum: on sources of conflict, and on politics? The answer is 'yes'. Fortunately, there are very few areas where both the Soviet Union and the United States have really vital interests. Although both have massive problems with which they must deal during the remainder of the century, in neither case are the major problems a consequence of actions by the other. Moreover, we have had examples of political agreements reducing the potentiality of conflict: as referred to earlier, the Austrian State Treaty, the dramatic and constructive change in Sino-American relations engineered during the Nixon Administration, and the Camp David agreement.

All of this is not to suggest that we should eschew considerations of arms in trying to find our way out of the wilderness. Of course not. Many arms programs are wasteful; some may contribute to East-West tensions; others may make war more likely in particular circumstances; and some could conceivably be a direct cause of conflict. (One cannot forget the Soviet attempt to deploy missiles in Cuba.) Thus, some arms programs merit strong opposition and others, perhaps, support; and the same can be said of various arms control

measures. But, it may not be obvious what position one should take with respect to such measures, individual weapons programs, movements, or changes in policy (e.g. the no-first-use of nuclear weapons initiative). The case of the MX missile illustrates this point. It is clearly expensive, unneeded for deterrence, and, in our view, of no real military utility, and so should have been stopped. It was most effectively opposed, however, by calling attention to its threatening characteristic as a "first strike" weapon and its attractiveness as a target for a "first strike" by the Soviet Union. But it is just such arguments that have led to what we have characterized as a distortion of our priorities in looking at likely scenarios for the initiation of conflict, in approaches to arms control, and in the search for points of leverage to reduce the likelihood of a holocaust. Thus, opposition to the MX is certainly justified in one sense, but, it is diversionary in another.

There would seem to be no clear cut rules for dealing with these kinds of dilemmas, but we would conclude on a note of caution about any measures relating to particular weapons or arms control agreements. We have generally overrated the importance of both, relative to the resolution of political problems. How events play out in Poland and the Middle East is likely to be a far more important determinant of whether we will survive than whether the US deploys tens or hundreds of MXs or abandons its triad.

The arms race is really not the problem, but rather more a symptom, and dealing with it is not the solution.

In turning to the longer term, a number of most difficult questions will have to be addressed in the search for a new world order: most fundamentally, those of surrender of national sovereignty to a world government or other international institutions; what political powers and coercive authority for such a government or institutions will be necessary and tolerable; and what

mechanisms for effecting change will be acceptable, recognizing that we will always live in a world where values conflict.

These questions will become more acute as nuclear weapons, or the potential for making them, spreads. We do not have to worry much in 1986 about either the Iraqis or the Iranians--much less about any of the factions in Lebanon--making nuclear bombs. Nor, do we worry much about Alabama's getting the bomb, Tom Lehrer notwithstanding, because presumably there is not much motivation and the federal presence and police powers are adequate to prevent it. But as capability becomes more widespread, we may well have to make hard choices. Iraq and/or Iran could, for example, be the Israels of tomorrow. And to then get them out of the nuclear weapons business would require enormous effort either to improve their security situation or to deny them the capability to build weapons.

If we are to have a world free from the threat of nuclear war, it will take some combination of, on the one hand, alleviation of grievances and concerns that nations and other groups may have about their security and, on the other, instruments of denial to prevent such nations or groups from acquiring nuclear weapons (or other means of mass destruction). The questions are what balances are realistic (if any), what are preferred, and who must enforce denial? It is our conviction that on both moral and practical grounds dealing with grievances and security concerns should take priority insofar as possible over countering the threat of use of weapons by force or policies of denial.