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Strategic Arms Limitation After SALT I

IF THE VLADIVOSTOK AGREEMENT of November, 1974, is transformed into a treaty, we will have reached a turning point in the long, tortuous, frustrating effort to bring strategic nuclear weapons under control. This turning point will not necessarily be a breakthrough, however; no substantial controls on existing or planned strategic-weapons systems will have been accomplished. Still, some essential steps have been taken: The issues of forward-based systems, of asymmetries in the throw-weights of missile forces on either side, of strategic compensation for the British and French nuclear-armed submarines, and for the alleged geographical disadvantages of the Soviet Union have been resolved in the process of arriving at agreements on equal ceilings for the number of strategic delivery systems and the number of missiles that can be MIRVed (i.e., fitted with multiple independently targeted re-entry vehicles). The large numbers proposed for these ceilings allow the continuing development and deployment of most of the weapons systems now being planned by the two sides; only after these ceilings are reached will the limits begin to be felt, unless the present agreement is modified. Consequently, the agreement does not in itself constitute timely and visible progress in arms limitation. Clearly it was a disappointment for those who thought or hoped that the time had come for such an achievement. But it does provide for the elimination of several persistent obstacles to significant limitations and for a framework within which these limitations can be negotiated.

In addition, about a dozen other treaties negotiated over the last twelve years limit the nuclear-arms competition in various ways. The 1963 treaty, banning all but underground nuclear-weapons testing, and the 1972 ABM treaty were particularly important for introducing the two leading nuclear powers to the practice of verified restraint and the benefits to be derived from it.

In a sense, more has been accomplished than this assessment implies. In 1963 the concerns expressed in many public opinion polls in this country centered on the likelihood of nuclear war[1] and these concerns were echoed throughout the rest of the world. By contrast, a recent survey of six hundred corporate executives found only two or three who considered a strategic nuclear exchange likely in the next decade.[2] This evidence of diminished anxiety over the possibility of nuclear war is almost surely linked to the improvement in understanding between the two leading nuclear powers—and demonstrations of more rational behavior within them—which has been exemplified by the succession of nuclear treaties. On the other hand, these developments seem also to have produced an air of self-satisfaction and complacency. It is now argued, for example, that there is no urgent reason for dealing with the very difficult problem of curbing nuclear-arms competi-

tion to the extent of actually reducing the number of nuclear armaments on each side; the next decade should instead be spent in adjusting our strategic inventory to the Vladivostok ceilings, under the assumption that the present relative calm will continue.

But another side to United States policy is revealed by scrutinizing the three stated objectives set for the Strategic Arms Limitation Talks (SALT).[3] The first objective was to achieve essential equivalence in the strategic forces permitted to each side; the second was to find limitations that would improve the stability of these forces in times of crisis and, in this and other ways, reduce the risk of nuclear war; the third was to reduce arms competition and, in time, military expenditures. When the SALT II Treaty, based on the Vladivostok Agreement, is concluded, these three objectives will have remained largely unfulfilled. At first glance, essential equivalence may seem to have been established by the equal ceilings. But these in fact represent only very vague limitations in the simplest categories of judging strategic force. Moreover, they appear to have been made possible by settling on numbers sufficiently high to allow deferment of many problems that would have had to be solved had the numbers been lower. Thus the commitment to equivalence has so far been one that has functioned only at high levels, where a variety of asymmetries and uncertainties can be accommodated.

Progress toward the second objective has been even more limited. The principal achievement has been the limitation of anti-ballistic missiles to negligible numbers. This was supposed to allow both sides to forego multiplying their strategic forces to compensate for those that might fail to penetrate the defenses of the other side. However, this opportunity has not been grasped: the multiplication of warheads through MIRVing has instead become the major occupation of both strategic establishments. With the number of warheads growing toward a figure that is more than tenfold greater than that originally thought adequate for deterrence, with continued improvements in yield and accuracy, and with a growing effort on both sides to find ways to reduce the invulnerability of the sea-based deterrent of the other, we certainly do not seem to be moving toward a strategic environment that is more stable in times of crisis. That the third objective—the reduction of the arms competition and military budgets in the strategic area—has receded rather than come closer is evident in the budgets and planned strategic programs on both sides.

Thus the objectives that the United States government had set for SALT remain unrealized. Nevertheless, it is now at least possible to move into the area of significant limitations on strategic offensive arms for the first time since the arms competition began three decades ago. The will to do so is the first requirement; it will be absent in those military planners on both sides who seek military superiority rather than mutual benefit through mutual restraint. It will be absent in government leaders who subordinate the slow, demanding quest for the control of nuclear arms to attempts to gain diplomatic advantage from an alleged nuclear superiority in terms of one index or another. And it will be ineffective in those who underestimate the difficulty of reorienting the two largest institutions in the world, the American and the Soviet military establishments. But, for those who have the will, a new effort is clearly required.

The military environment which would be altered by the arms-control agreements that are now possible is itself undergoing rapid change. The complexity of the

problems and the potential for further change in the present strategic arsenals were not foreseen in the fifties and sixties, when many of the ideas for arms control took shape. Thus, a new effort is now needed to join these rather naïve and often elementary ideas to the complexity of the present situation. Such an effort will not recapture the expansive period of new conceptions that animated the fifties. The revolutionary phase of nuclear weaponry is over: the present task is the less heady one of finding ways to accept self- and mutual restraint in order to consolidate forces at lower levels more obviously related to justified needs. It is in this context that the role of balanced reductions of strategic forces will be discussed. However, it is necessary first to examine the alternatives that exist.

How many routes to the limitation of strategic arms should be considered? Although a large number can be identified, almost all of them fall into two main categories: 1) control over the numbers of weapons, and 2) control over the improvement of weapons. In other words, limitations can be applied by controlling either quantity or quality.

Numerical limits were placed on anti-ballistic missiles in the 1972 treaty, and on the number of launchers in submarines (SLBMs), as well as the number of SLBM-carrying submarines, in the Interim Agreement of that year. Agreements to slow down schedules for the deployment of new systems represent another form of numerical limit. Outright bans on certain types of weapons (such as space-based ABM systems) can also be considered a numerical limitation (by limiting the number to zero). To complete the set, the banning of weapons from certain locations, as in the Seabed Arms Control Treaty of 1971 and in nuclear-free zones, can also be classed as a numerical limitation (by limiting the number to zero in specific locations).

Qualitative limits, that is, limits on improvement, were placed on ABM radars and ICBM silos in SALT I. However, the greatest effort has been directed toward attempts to limit the quality (as well as the number) of MIRVed missiles. Restricting MIRVing to missiles below a certain size, limiting the number of re-entry vehicles per missile, and placing a ceiling on the total MIRVed throw weight (i.e., on the total throw weight of missiles allowed to be MIRVed) are illustrations of proposals that have failed to attract support from either side. Qualitative restraints on bombers, to limit their weight, range, and the numbers and types of missiles they may carry, are likely to be examined in the negotiations of a SALT II Treaty.

The foregoing illustrations show the basic distinction between the two types of limitation. The problems in numerical limits lie in deciding precisely what categories of weapons are to be subject to numerical control and how maintaining the numbers agreed upon is to be verified. Qualitative restraints usually enter the picture only after numerical controls are considered enforceable, for then it becomes evident that, if numbers are to be controlled, improvements in the quality of the weapons must also be limited by collateral restraints if the limitation of numbers is to retain its usefulness. Without qualitative restraints, agreements on number could simply shift the objective of an arms race from numerical to qualitative superiority.

The recognition that an arms race can easily shift from a quantitative to a qualitative one under the influence of numerical restriction is absent from earlier arms-control literature. Before the mid-sixties, it was commonly assumed that a numerical limit would provide a freeze, in which weapons, if they were replaced at

all, would be duplicates of the ones that had been eliminated, and that inspection would reveal the violation.

But this assumption regarding replacements became untenable as the speed with which technological improvements could be introduced was demonstrated and as satellite systems for verifying compliance were developed. In its place, three new categories of modification were recognized: 1) detectably different and allowed; 2) detectably different and not allowed; 3) undetectably different or the same, hence allowed. In almost every case, improvements can be gradually introduced into a fixed number of weapons using 1) and 3), although some specific major improvements can be prevented by enforcing 2) to control the rate of possible improvement for a fixed number of weapons. Not unexpectedly, the discussion of, and eventually the agreements regarding, qualitative restraints—and their operational counterpart, verifiability—became central issues in SALT I, in both the internal and external negotiations, and will continue to be central features of arms-control treaties.

The complexity of the issues arising from qualitative restraints is the result of the many features of a weapons system that significantly affect its military utility. For example, when considering an ICBM we are concerned with its size, payload for a given range, number of warheads, megatonnage of the warheads, guidance of the warheads (MIRV or not), accuracy, reliability, readiness, and silo hardness. Yet verification measures generally provide only for the counting of silos and approximate estimates of their size. Observations of flight tests can provide additional information if they can be reliably tied to missiles known to be in particular silos. However, it is obvious that limitations in the possibilities of verification severely restrict the extent to which qualitative limits can be agreed upon.

A potential solution to this problem arises from the fact that most substantial qualitative improvements of missiles require a development and testing stage that is also observable by the other side. Consequently, most substantial qualitative improvements can be controlled by severely limiting the annual number of flight tests. This kind of control could greatly retard the development of new or improved missile systems designed to replace existing ones. Moreover, such a restriction could also reduce the number of confidence firings of deployed missiles to the extent that a "first strike" would be even less conceivable than at present. Despite these desirable consequences, limitations on flight tests are very unpopular with the military, and the possibility of their being proposed at SALT is, at best, uncertain.

The usefulness of qualitative restraints in limiting improvements in a fixed number of weapons systems is also subject to the shortcomings of human foresight—it is impossible for all future developments to be discerned in advance and forestalled by negotiating qualitative restraints. Were one to try to do so, the number of necessary prohibitions that the imagination might suggest becomes too great and therefore too cumbersome to negotiate.

A further difficulty with qualitative restraints is that, to be effective, they must be introduced prior to large-scale deployment. The current attempt to negotiate a partial MIRV limit in SALT bears testimony to this. The appropriate time to have negotiated a MIRV ban or limit would have been in 1969 or 1970, before American deployment began. But the prudence of that course is only now becoming apparent to government leaders. At that time, the pressures on them to exploit the American advantage were too strong and their perceptions of the complications it would introduce were too dim

to prevent deployment. In general, it is asking more than the system will bear to impose limits at the end of a research and development cycle. Yet it is only then that limits can be expected to work.

A quite different kind of limit on qualitative restraints lies in their acceptability in negotiation. Insofar as the Soviet Union perceives itself as being at an earlier technological stage than the United States in the development of most major weapons systems, it will tend to avoid agreeing to a qualitative restraint that will freeze it in a technologically inferior position. Yet the limits on acceptable verification procedures require that the qualitative restraint be so simple and inclusive as to preclude the kinds of distinctions that would allow one side to catch up, while restraining any further development on the other. In practice, therefore, the usefulness of qualitative restraints will be restricted whenever one negotiating party considers itself technologically inferior to the other.

From these considerations, it is reasonable to conclude that an agreement to limit or freeze the numbers of strategic weapons systems will not by itself stop an arms race competition. Negotiated qualitative restraints based upon what is verifiable provide the principal means of restricting the growth of capability in a fixed number of strategic weapons. However, such measures as are possible and negotiable will only partially restrain or retard improvements in strategic-weapons performance. Within fixed numerical limits or ceilings strategic capability is thus destined to expand; only by recourse to reductions can it be diminished.

Because of the inability of qualitative restraints and numerical limits to stabilize the strategic capability of the two sides, some new scheme for numerical reduction must be brought into play, if the continued growth in strategic forces is to be reversed rather than simply retarded. Before examining how reduction agreements might operate, it is useful to summarize the argument for reduction. There are at least five points in its favor: First, it provides a means of compensating for the inevitable improvements in allowed systems. Military forces, conventional and strategic, will undergo continuous improvement. The imposition of a continuous rate of reduction provides a counter to hold strategic capability constant, or even to diminish it. Second, set at moderate rates, it provides for the orderly elimination of old weapons systems without their being replaced by new ones. Third, it engages the military of both sides in an institutionalized and continuous process of scheduled reductions and verification. Fourth, it provides a highly visible sign to all that arms control is at work; forces are being reduced by the most obvious index—numbers. Finally, the process can be made readily verifiable.

Against these positive features, one has to admit that the premeditated destruction of serviceable weapons will risk outraging both the dedicated officer and the thrifty taxpayer. This psychological barrier is admittedly very great, but only its breaching will make clear to all that arms control has begun in earnest.

A program of numerical reductions in strategic systems involves three essential components: the rate of reduction, the schedule of reduction, and the definition of the categories subject to reduction. Reduction programs can be undertaken in many ways. The rate of reduction is, of course, crucial to any proposed program. Although its choice obviously depends on many factors, it is important to recognize that it is closely related to qualitative restraints. At one extreme, reduction schedules may be

regarded simply as a supplement to the maximum use of qualitative restraints. In this case, reductions compensate for what qualitative restraints cannot do; used together in prudent fashion, they can produce either a constant strategic capability or a gradually diminishing one. At the other extreme, maximum dependence on reduction schedules assumes that, if reductions are sufficiently rapid, no amount of qualitative improvement can compensate; the burden to be carried by qualitative restraints is thereby greatly reduced, and only the more obvious measures need be negotiated. Clearly these two extremes enclose a broad spectrum of rates of reduction, and this should be borne in mind as we consider the other variations to which we now turn.

Four important distinctions encompass the more obvious reduction schemes:

1) single step versus progressive annual reductions;
2) reductions applicable to aggregates or individual categories of weapons systems;
3) random versus national selection of weapons to be eliminated;
4) destruction versus inactivation of eliminated weapons systems.

A single-step reduction over a few years, perhaps with a specification of minimum rates for reductions within each year, seems at first to be more manageable than a scheme of progressive annual reductions. The goal of a single-step program is finite; it implies consolidation at the end, and it corresponds to a period in which both sides would have fairly firm projections. It does, however, risk the development of tensions over whether it is to be regarded as one step not to be repeated, or as a process that could be renegotiated and repeated. In other words, it represents a single engagement rather than a commitment to a process.

A progressive annual reduction over an unstipulated period, even if less ambitious in the short run, would, by contrast, commit the military planning and procurement bureaucracies on both sides to a continuous process of retrenchment, and this could have far-reaching psychological and political consequences. Again, the rate of the reduction will be crucial. If it is sufficiently low to provide only for the orderly disposal of obsolete weapons, it will have one kind of impact; if it bites deeply into advanced weapons stocks, it will have quite another.

The rate of reduction can be most simply defined as the constant percentage by which the remaining weapons in certain categories must be reduced annually. Thus, ten per cent per year over five years would reduce the level to fifty-nine per cent of the original inventory; and over eight years to forty-three per cent. Obviously, the rate could be changed along the way, or "hold periods" could be inserted to permit intensive verification.

Of course, the question of where to stop reductions becomes crucial if one seriously contemplates beginning the process. For this there are no simple answers. As we have argued, the first years of balanced reductions would mean cutting into the excessively high forces that both sides were doing without only a few years ago. But the course and extent of subsequent reductions engages one's whole conception of future world-order arrangements, that is, it forces a consideration of the roles that all the nuclear powers and potential nuclear powers will want to play. As such, the proper treatment of this problem is far beyond the scope of our present considerations. But, clearly, it can only be deferred. The more timely questions arise in deciding what weapons are to be subject to control and how they are to be specified. Some possible classes for this purpose are illustrated by the following categories:

1) All those to be controlled can be put into a single class, usually designated as an aggregate. This may, in the view of one or both parties, involve only a part of the strategic force.

2) Sublimits may be imposed on the aggregate number, that is, there may be separate limits for broad categories of weapons (for example, ICBMs, SLBMs, and heavy bombers).

3) Size, or other characteristics, may be used to define other categories with specific limits. Thus, MIRVed missiles may be treated as a separate category, as in the Vladivostok Agreement, or ICBMs may be divided into two classes according to size, as in the Interim Agreement of 1972.

4) Classes may be defined in terms of existing weapons types; they will, in this case, differ for each side. If the classification is done comprehensively, it would represent an inventory for each side according to categories (for example, Minuteman II, Minuteman III, B-52 bombers, Poseidon, etc).

5) Within any category or class the number allowed might be determined by a separate criterion rather than by specific number. Thus the number of MIRVed missiles might be determined by the combined throw weight of the class, thereby allowing different combinations of different numbers.

The choice of the level of aggregation for an arms-control agreement is intimately related to what the two sides wish to accomplish, and it will probably be agreed upon prior to consideration of the manner in which reductions might subsequently be carried out. Reduction programs would then have to be fitted into an already existing agreement, and care would have to be taken to insure that a given reduction program preserves the aims inherent in the prior agreement that imposed the various ceilings and restraints. However, before pursuing this, a few more general observations may be useful.

The level denoted by 1) represents the simplest way of dealing with major systems, because a total aggregate number would be selected. It does, however, require that all major delivery systems (ICBMs of all sizes, SLBMs, and heavy bombers) are assumed to be equivalent, a very distant approximation to the truth. Nevertheless, if the preservation of the freedom to mix, that is, to change the composition of the strategic forces in the future within an agreed aggregate number, is an important condition for an arms-control agreement, this approximation will still be tolerable.

Reduction schedules would obviously lead to different consequences when applied to different levels of aggregation. If applied to the first level, that of a total aggregate number, it is likely that each side would tend to eliminate its older, less versatile weapons and preserve the most modern and effective ones. Under 2) or 3) the bias would be against the oldest or smallest weapons in each category. Since the freedom to mix would not be allowed outside of broad categories, each side could predict with some confidence the manner in which the other side's force structure would change over time. The results may not be equally agreeable to both parties. Consequently, the negotiation might again return to definitions of equivalency or relative value, so that asymmetries would not develop or increase as reductions proceed. This situation is avoided in schedules of the type indicated under 4), which represents the most controlled mode of reduction. Here all asymmetries are taken care of in the original assumption of parity, and each side's inventory is reduced on the same schedule, for ex-

ample, by five per cent per year. Consequently, problems of equivalency do not arise. Totally new weapons systems would not be allowed. However, it seems likely that each side would prefer to concentrate its reductions in categories that it wished to phase out. This could then be the subject of separate negotiations between military staffs.

The expectation that each side would insist on deciding for itself which weapons are to be retired, subject to the agreed reduction schedule, is so readily taken for granted that the consideration of any alternative seems academic. Nevertheless, one can imagine situations in which both sides would prefer random rather than self-selected eliminations of weapons. For example, if the land-based ICBMs of both sides were partially MIRVed, but both sides were uncertain of the extent, then it might be to the advantage of both not to risk passing through a potentially unstable period in which the missiles of one side were almost completely MIRVed and those of the other were not. Such a situation could be avoided if the missiles to be inactivated were chosen at random: this would then insure that the MIRVed-single-warhead mix was approximately preserved through the reduction stage. This unusual procedure would have the further effect of discouraging any attempt to improve the weapons systems being reduced, for a fraction of the newly improved weapons would also be picked for destruction. It is, in effect, an alternative way to avoid the development of asymmetries as reduction proceeds.

The final distinction lies in how weapons designated for elimination are dealt with. Their destruction under the supervision of inspectors would be unambiguous and decisive: it would convey dramatically the intention of the superpowers to curb the arms race. Insofar as the weapons involved would be those nearing obsolescence, this procedure would present little difficulty. But when more recent weapons in substantial numbers are designated, many objections can be expected. The anticipation of this opposition will surely affect the negotiation of the rate at which reductions proceed, although it is difficult to estimate the extent of its influence. Therefore, it is useful to consider the alternative of putting at least some weapons designated for elimination into an inactive state. Their availability in the event of abrogation of the treaty or other emergency would itself be the subject of negotiation. Another alternative would be to store them in groups, which would make them easy targets in the event of a nuclear exchange. In any event, conditions can be found that would diminish the anxieties of the negotiating parties, and, by adopting them, higher rates of reductions might be negotiable. Whether designated weapons are destroyed or inactivated, it would be useful if their identification were subject to inspection by the other side. This is contrary to a long-standing Soviet position, but it would greatly improve verification.

Still another option for weapons removed from national inventories lies in their being assigned to some future international force. Most versions of this option seem patently unacceptable, but one can envision some possibly acceptable versions, such as one in which the contributing nuclear powers could exercise some joint control and even have power of gradual withdrawal of weapons in crisis periods.

Although the foregoing considerations may appear somewhat theoretical, they do permit some practical observations on the course that might be followed if reductions were to be pursued in the framework expected from the Vladivostok Agreement. That Agreement proposed a ceiling (2,400) on the total aggregate of strategic delivery

vehicles subject to two sublimits: one set a ceiling of 1,320 on the numbers of MIRVed missiles for each side and the other limited overall missile sizes to approximately the sizes of those now deployed. The latter limit has the effect of allowing the Soviet Union about three hundred quite large ICBMs (of the SS-9 and SS-18 class) while denying comparably large missiles to the United States. Presumably this apparent asymmetry was equalized by such unspecified considerations as the decision not to provide numerical compensation in the aggregate for British and French submarines, and other similar requirements that the Soviets have now abandoned. Whatever the rationale, the critics are correct in pointing out the missile throw-weight gap in the present agreement, but it should also be noted that there is at present a bomber gap in the opposite direction.

The reason for emphasizing these two asymmetries lies in the importance that they would assume if reductions were undertaken. Reduction schedules that preserve the high degree of freedom to mix in the Vladivostok formula would allow the Soviets to carry their heavy-missile advantage and the Americans their bomber advantage into the smaller force structures prescribed by a reduction agreement. Asymmetries that were acceptable at high ceilings may become unacceptable to one or both parties when these ceilings are lowered.

This example illustrates a more general observation that is becoming increasingly apparent: In order to preserve a rough balance, or essential equivalency, a reduction program must diminish asymmetries as it progresses. To do so, it will be necessary to introduce new sublimits along the way in order to insure that the asymmetries are diminishing at least in proportion to the reductions. In this particular instance, specific sublimits may have to be established for heavy missiles and heavy bombers, and their numbers may have to be decreased on a separate schedule.

In retrospect, it seems likely that the very high ceilings of the Vladivostok Agreement were deemed desirable at the time because they permitted the agreement on an overall aggregate number and the ignoring of asymmetries within the respective strategic forces. If this is true, it follows that it would be unrealistic to assume that the ceilings could be greatly reduced without reopening and solving the problem of these asymmetries. Substantial reductions that allow each side to select what is to be removed from its strategic inventory will almost certainly increase the asymmetries in both force structures. Moreover, a preference to retain MIRVed missiles over un-MIRVed missiles, large missiles over small missiles, and quick-reacting weapons over slow-reacting weapons will probably produce a less balanced and less stable strategic situation. The principal task in negotiating a reduction program will be to avoid this and to promote more symmetric, more obviously equivalent strategic forces that are also more stable in crisis situations.

In order to keep the foregoing discussion general, we have employed the concept of a schedule of reductions proceeding over a period of years that would be widely applicable. This should not obscure the virtues of the simpler procedure of a single-step reduction where it is appropriate. At present, it would be appropriate in working out the Vladivostok Agreement. The number of MIRVed missiles allowed is now unnecessarily high. Despite the excursions into fantasy that are required to visualize either side mounting a first strike on the other, the degree to which this scenario has become a test of arms-control options is very great. By this test, the stability of the strategic situation would be vastly improved if the ceiling for MIRVed missiles were cut in half,

either in the SALT II Treaty or by a subsequent treaty negotiated in 1975-76. With this lower number of MIRVed missiles, a first-strike scenario would be assigned to oblivion. More important, such an agreement would in one step confer many of the gains that would take a decade or more to achieve were the MIRVed forces to be built up to 1,320 and then reduced back to the much safer number of, say, 660. Alternatively, both sides could agree to identify a comparable number of its older missiles for future retirement and refrain from upgrading or improving them. In either event, the capital and resources, not to mention the energies of the negotiating diplomats, that could be saved for more useful purposes are prodigious. Subsequent negotiations could then concentrate on the orderly restraining and reduction of already more manageable strategic forces.

This survey of what might be called the tactics of reducing numbers of strategic weapons has attempted to present the versatility and the complexity of this mode of arms control and to demonstrate that reductions would become unavoidable if the containment and the decrease of strategic capability are desired by both sides. Moreover, it has become apparent that numerical reduction programs would introduce a new dynamic into the arms-control situation. As reductions progress, it will become necessary to institute new sublimits, and accompanying reduction schedules, to deal with asymmetries that would otherwise increase. Likewise, verification procedures, which may have been acceptable in the context of high ceilings, will have to be tightened as numbers are lowered. In short, a commitment by the two leading nuclear powers to a treaty calling for substantial reductions will engage them in procedures exceedingly more complex than that process of simply certifying weapons for destruction that is sometimes taken to represent arms control.

Despite all that might be said for the usefulness, and indeed necessity, of reductions, it must be admitted that this mode of arms control is certain to encounter strong resistance. The destruction of expensive weapons has about it a touch of the futile and the tragic. This view is strengthened by the very short life of the SALT I option (Option D) which, according to the Newhouse report,[4] contained a substantial reduction schedule, the removal of one hundred strategic missiles per year for seven years, and had a "half life of one plenary session."

Apocryphal or not, this view was much more prevalent a few years ago than it is at present. Fundamentally, there are only two options in arms control: either control and limit numbers, or control and limit the technology that permits improvement. The armed forces, charged with maintaining the military strength of the nation, naturally find neither of these options congenial. But as the political interest in genuine arms control grows, some accommodation by the military will have to be made. The choice will not be an easy one for either side.

The military position, of course, will be based on what is perceived as constituting an advantage over the adversary. In this respect, the Soviets face a particularly acute problem. Their recollection of American production of planes and tanks—and especially the astronomical production of motor vehicles—in World War II tells them to seek controls on numbers and to reject technological restraints. On the other hand, they can sense the continued superiority of American military technology, reflect that the United States has been the side to introduce almost every new weapons system into the strategic inventory since World War II, and conclude that it would be pref-

erable to seek controls on technology rather than on numbers. But if they acquiesce in this, do they not risk placing themselves permanently in an inferior technological position? This must represent a continuing dilemma for the Soviets, and might explain much of the stalling that characterized the SALT talks.

It should be evident, however, that the current state of affairs is not so sharply drawn. For two decades the United States has been shifting to progressively more sophisticated weapons systems, with a consequently high unit cost that makes the large numbers turned out by endless production lines neither acceptable to us nor within our budgets. The technological "superiority" argument is also now open to question as the Soviet defense industry increases in sophistication and remains the recipient of unrestrained budgetary largess. Moreover, the Soviets could hardly expect the United States to make concessions on the expectation that we would have a permanent technological lead. Although these considerations moderate the dilemma, they do not remove it.

American views on this question display a characteristic diversity. The Soviet reaction to the apparent American technological lead has been to field much larger missiles and to concentrate a greater part of the Soviet strategic force in this visible, and potentially more threatening, component. The American response has not surprisingly involved proposals to limit the size and MIRVing of Soviet missiles. In these efforts both technological and numerical restraints are requested. At a rhetorical level, several branches of the American government have devoted a great deal of attention to the Soviet lead in the throw weight of ICBMs and the number of warheads that could be deployed in them, ignoring the fact that the deliverable megatonnage of the whole strategic force on each side is approximately equal, that the United States has a three-fold lead in warheads, that weapons beyond one or two thousand are of increasingly more marginal utility, and that we prefer our more diversified force in any case. More important, this concern is not, for the most part, matched by enthusiasm for jointly limiting technology so that the larger Soviet missile throw weights cannot be fully exploited. Instead, American interests tend to prefer limiting numbers and sizes of launchers, evidently assuming that, under these restraints, a continuing technological lead can be assured.

Taken together, these observations suggest that the military leadership on both sides would probably much prefer numerical reductions to equally drastic restraints on either technological improvements of existing systems or the development of new ones. Some further evidence for this preference can be found in official pronouncements on both sides. Despite allegations that Soviet representatives have not expressed any great interest in reduction formulas in the SALT discussions, we do have specific endorsement of them from Chairman Brezhnev in statements dating from the past three years.

> Evidently it would be a good thing to give some thought to how we could move from the limitation of arms to their gradual reduction, and also to the establishment of some kind of limits on their qualitative improvement.
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> The successful completion of the new phase of talks between the U.S.S.R. and the U.S.A. on questions of the further limitation and possible reduction of strategic arms can play a considerable role.
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> In short, if the government of the United States adheres to the principles of equal security and renunciation of attempts to gain unilateral advantages as set down in our agreements, it will

find the Soviet Union to be a conscientious and active partner in such an important undertaking as the limitation and reduction of strategic arms.[5]

On the American side, we find that reduction proposals have also been made by several Senators.[6] And, although Secretary Kissinger insisted in the early days of SALT that reductions could not be negotiated, he has more recently modified his opinion, as the talks enter a new phase. The following statement was made in defense of the Vladivostok Agreement in a *Newsweek* interview:

Now, what in fact is the significance of this agreement? The nightmare of the nuclear age is the fear of strategic arms based on the expectation of what the other side is doing. One has to get one's priorities right. The first objective must be to get that cycle of self-fulfilling prophecies interrupted. That has now been substantially achieved. Once that is built into the planning of both sides, I think the negotiations on reductions will be easier.

A number of people gained the impression that the reductions were to start only after 1985. The Vladivostok announcement in fact said that negotiations would start no later than 1980 for reductions to take place after 1985. That has now been eliminated from the aide memoire because it was never intended to preclude an agreement on reductions to take place well before 1985. So it is clear that negotiations can start as soon as possible and take effect as soon as there is an agreement.[7]

Finally, in his 1975 budget statement, Secretary of Defense Schlesinger states that:

. . . we would welcome reductions in these [strategic] forces provided that the Soviet Union were willing to reciprocate in an equitable fashion.[8]

It would seem, therefore, that a negotiated, balanced reduction in numbers of strategic weapons has at least become an acceptable item on the agenda for the next steps to be taken in arms control.

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[5] L. I. Brezhnev, *Pravda*, December 22, 1972, p. 1; October 27, 1973, p. 1; June 15, 1974, p. 1.

[6] E. g., Senator H. Jackson, *Congressional Record*, December 4, 1973; Senator W. Proxmire, *Congressional Record*, February 5, 1974.

[7] Henry A. Kissinger in an interview published in *Newsweek*, December 30, 1974.

[8] "Statement of Secretary of Defense James R. Schlesinger to the Congress on the FY 1976 and Transition Budgets, FY 1977 Authorization Request, and FY 1976-1980 Defense Programs" (mimeographed), February 5, 1975, p. 27.