collateral damage, will enhance the deterrence of a significant range of action against our interests. We should not only seek to have such capabilities ourselves, we should also encourage the Soviets to move in this direction. In short, these properties are qualitatively different from those widely assumed to be characteristic of what we call "strategic" weapons. It would be the height of foolishness to try to discourage this development. Cruise missiles, it should also be mentioned, are much cheaper than ballistic missiles.

There are, in addition, extraordinarily difficult and probably insoluble problems of verification of cruise missile limitations. The current U.S. missile is designed to be launched from 21 inch submarine torpedo tubes; it also could be carried in large numbers inside many types of aircraft. There appears to be no practical way to count through national means of verification the number of these missiles that might be deployed. And because possible luanchers would presumably have to include all submarines and medium sized or larger aircraft, not to mention surface ships, the counting of launchers also seems impractical.

There are equally difficult problems in verifying cruise missile range limitations. The range of a cruise missile of given dimensions could be varied enormously, from several hundred miles to several thousand miles within the same airframe. This can be done by trading off bomb weight and volume for fuel. Such variation could also not be monitored by national means of verification.

Limitations on cruise missiles apparently were not discussed at all at Vladivostok. It became an issue after Vladivostok apparently because our negotiators agreed to language which says that air launched missiles should be limited instead of ballistic missiles. The Soviet negotiators, conscious of the U.S. lead in long range precise cruise missile technology seized the opportunity; they have insisted that the limitation applies to both ballistic and cruise vehicles. We have belatedly taken the position that such limitation should apply only to ballistic missiles. It is important to observe in this connection that the Soviets have both air and sea launched cruise missiles today and we should not deceive ourselves about the difficulties of monitoring them.

For the reasons I have given, it appears undesirable to try to limit a technology which promises to move both the U.S. and its adversaries in the direction of a more discriminate, less vulnerable and more stable and possibly more economic posture. And limitations based on range or on trying to count vehicles that can fit inside of a 21" cylinder promise to be unverifiable anyway. The U.S. so far has opposed restrictions on this system and the Congress should support the U.S. position.

Other Problems of Verifying Compliance

There are other serious problems of verification beyond those associated with cruise missiles. One has to do with the distinction between MIRVed and unMIRVed missiles which is central to Vladivostok. Secretary Kissinger made it clear after Vladivostok that the problems of monitoring compliance with the MIRV limit were so difficult that one would have to assume that any type of missile that had been tested in a MIRVed mode would have to be counted as MIRVed when deployed. I know of no good reason to question the necessity for this counting rule which would have to apply to both SLBMs and ICBMs. But this means that the Soviets would be constrained from introducing more than 1320 missiles of types which have been tested at least once with MIRVs. In view of the large scale modernization program now underway, I believe that the Soviets will modernize to a degree which will exceed the limits implied by Secretary Kissinger's counting rule.

This issue is a most serious one. It means that there should be no deviation from Secretary Kissinger's counting rule and, if I am correct in my surmise about Soviet missile modernization, there will be a question of possible violation of the agreement some years from now.

What is to be Limited in SALT II, Launchers or Vehicles?

The SALT I Interim Agreement limitations were expressed in terms of launchers: e.g., silos and missile launching tubes in submarines. But much public discussion since Vladivostok refers to vehicles: missile and bombers. It makes a difference. Either side would be able under SALT I to procure say an additional 1000 ICBMs, or not destroy old ICBMs replaced by new ones. They could be kept for

"reloads", extra ammunition so to speak. The U.S. so far has not found the capability to reload launchers with long range nuclear missiles to be an interesting one. Nor am I recommending it. But I do not know if the Soviets see it this way. In any case, members of Congress should not be shocked if it is revealed some day in the future that the Soviets have a thousand or so extra ICBMs stashed away.

Nevertheless, there is a large difference between the difficulty of verifying the number of silos or submarines carrying ballistic missiles on the one hand, and the numbers of missiles on the other. This is why SALT I limits were imposed on launchers. Vladivostok raises more serious problems of launcher vs. vehicle limitations. What is a bomber? Obviously a vehicle. But what is a bomber carrying air to surface missiles? It looks like a launcher. And since the missiles inside a bomber, or a submarine, can't be counted, then perhaps SALT II should be limited like SALT I to launchers (counting bombers as honorary launchers for purposes of seeing that the total of 2400 isn't exceeded) or a mix of missile launchers and bomber vehicles. But what should be done about the vexing problem of missiles inside of bombers (or submarines for that matter if the imprudent decision were to be made to also try to limit them)? The alternative of including in a missile total the maximum capacity of all of the relevant aircraft and submarines would far exceed 2400.

Similar problems arise with land mobile ICBMs. The Soviet SS-16 ICBM is apparently designed to be capable of land mobile operation. The mobile launcher for such a system may be no easier to monitor than the missile it carries. In this case, neither launchers nor vehicles will be reliably monitored by national means of verification.

In sum, the monitoring of missiles as vehicles is virtually an impossible task. Among vehicles considered in SALT only aircraft appear reliably monitorable, and unfortunately we seem not to be very serious about counting many of these. The monitoring of ballistic missiles launchers in silos or submarines is clearly feasible. There are exceptionally difficult or impossible problems with air (or submarine) launched cruise missile launchers and with land mobile ICBMs.

The upshot is that we should continue to insist that limitation apply to launchers (plus bombers), while recognizing the limita even in counting launchers for cruise and land mobile missiles.

What Does the Word "Strategic" Mean in SALT Anyway?

SALT, an acronym for Strategic Arms Limitation Talks, is on the premise that the meaning of the word "strategic" is clea Everyone knows what "strategic" means. For instance, that some "tactical" is not being referred to. In reality the confusion the use of these terms is enormous and it makes a difference. is often used, among other things, to refer to 1) long range v 2) to nuclear delivery means or conflicts, 3) to weapons desig for use against great power homelands, 4) to attack on deep ta well behind the battlefield, and especially attack on urban ta ICBMs and SLBMs carrying nuclear weapons seem at first glance correspond to these meanings but what about Poseidons assigned SACEUR for use in the European theater? Would they be strateg What about U.S. F-4s used against a power plant in Hanoi or Is F-4s used against a refinery in Syria in the 1973 war. Were uses of fighter aircraft strategic or tactical? B-52s were u close support in South Vietnam carrying non-nuclear bombs of Yet B-52s are a major system of the Strategic Air Command and counted as strategic in Vladivostok. What about cruise missi with non-nuclear warheads that might be sent against shallow t inside of a great power homeland in response to an attack in Or short range Soviet cruise missiles with nuclear warheads l from Soviet submarines against U.S. coastal targets?

The fact is, that whatever use there might have been i past to the strategic-tactical distinction, by now it has vi lost all meaning. This of course, does not mean that distin in the use of force are unimportant. On the contrary, with growth of nuclear armaments, they have become increasingly i Distinctions between nuclear and non-nuclear, homeland and population and non-population attacks are crucial. But not between strategic and tactical. This fact nas made increasi arbitrary the inclusion or exclusion of weapons from SALT li

Why does this confusion matter? Arbitrariness and terminological inexactness are commonplace and often inevitable in the world of affairs. But it is especially important here because we don't seem to know what we want in SALT agreements beyond the act of reaching agreement. There has not been adopted a reasonably consistent set of operational objectives which furthers U.S. security discernible in the SALT process. Part ofthe reason why is because the exercise has been defined in terms of limiting some weapons which seem vaguely "strategic" and about which we might arrive at agreement. For example, on something as fuzzy as equal aggregates. Instead we should have in the past, and should in the future if we continue with this kind of exercise, define one or a few specific objectives in which there might be a mutuality of interest with the Soviets. For example, reducing the destructiveness and indiscriminateness of existing nuclear weapons or saving money or improving the protection of long range nuclear forces.

The Need for Force Adaptation Not Preservation

Earlier I asserted that there is no simple way of measuring relative strength. Force ratios are totally arbitrary in estimating the outcome of a conflict. Things which are different (e.g., missile throwweight and bomber payload) are treated as though they are alike. In effect, a type of conflict which is unknown and to a significant degree unknowable (a two-sided nuclear war) is implicitly treated as if it is known. The SALT process attempts to freeze in place relationships which happen to exist at a moment in time. This is doomed to fail because technologies and circumstances change. There is a positive need for adaptation over time, for increases, decreases, changes in force structure, in weapons and in doctrine. Treaties try to preserve things according to an understanding which exists at time t; at time t plus several years, things are almost certain to appear very different.

I have mentioned the adaptations in the U.S. missile and bomber forces during the 1960s and early 1970s. These produced a less vulnerable, more stable posture at lower dollar cost. These changes were part of a continuing adaptation of U.S. strategic forces over a long period of time to changes in the international environment,

new threats and new technological possibilities. These changes clearly have not produced inexorably rising budgets. Moreover, in the absence of the qualitative changes that were made, large quantitative increases in forces would have been necessary in order to have preserved stability.

The continuing need for adaptation is illustrated by the major changes that have taken place in the past two decades. A major shift in the deployment of U.S. strategic forces occurred in the early 1950s as the result of some work with which I was associated. The emergence of a Soviet nuclear threat made it evident that Strategic Air Command bombers could no longer depend on overseas bases for repeated combat operations. This threat, together with the adoption of air refueling techniques and the limiting of overseas bases to staging use, led to the planned operation in combat of SAC bombers from bases in the continental U.S. But it was also apparent that Soviet offensive capabilities also threatened bombers or bases in U.S. and it became necessary to build radar warning systems and to put many of the aircraft on a high alert status in order to assure the survival of a significant number of them. With the advent of thermonuclear weapons--which were initially and wrongly thought only to make possible large yield bombs--it became possible to build small missiles and base them in hardened and dispersed silos and in Polaris submarines. The adaptation process could not stop there. Silos have been increased in hardness, and a decision was made to protect silo fields with ABM (a decision which was negated by the 1972 ABM treaty in SALT I. This leaves silo based forces increasingly vulnerable.) Sea based missiles have been adapted to a growing anti-submarine warfare threat by progressive extensions of their range which opens up more and more of the ocean within which submarines can hide, and by efforts to make submarines quieter.

It is evident that continuing adaptation will be needed. Agreements which attempt to freeze things (no ABM protection of fixed strategic forces, little silo change, limitations on protecting missiles by land or air mobility, fixing numbers of launchers) are a mistake. Only a small proportion of the relevant parameters can, in any case, be limited, even in principle. Change will be forced

by new technology and should be responded to by constructive selection among the available options. Although I do not hesitate to assert that parochial bureaucratic interests often cause the DOD to choose to buy weapons which are not in the public interest, I do not think that the solution to this problem is to try to pretend that it is in the public interest to try to freeze what is an inherently dynamic process. (Such limitations often respond to what is another set of parochial bureaucratic interests.) The result is to make agreements of the SALT type increasingly unstable or irrelevant.

Trying to Prevent Qualitative Changes is Undesirable and Moreover Fruitless

Such efforts have largely the effect of increasing domestic pressures for unilateral restrictions. The recurrent efforts in the Congress to limit improvements in the accuracy of missiles are a case in point. These efforts, if successful, would slow progress towards greater precision, flexibility, and discriminateness in the use of force and to enhancing our non-nuclear capabilities. Such efforts in effect amount to playing the role of King Canute because the changes that are occuring in the technologies of precision are fundamental and broadly based. They could slow us down but not the Soviets; the Soviets do not seem to have a comparable domestic political force which seeks to impede its military technology.

In short, the model that we should adopt is one of acompetitive adaptation through the introduction of new technologies which meet our needs, not through an attempt to form a cartel with adversaries in restraint of technology. (In saying this I do not mean to advocate an all-out technocratic position that any new technology is good. I can think of some that are very bad indeed and that we should seek to collaborate with the Soviet Union and others in limiting--nuclear fuel reprocessing plants for example.) But any cooperative anti-technology efforts should be sharply focussed and should be based on a realistic appreciation of where our interests lie.

Summitry Produces Loopholes and Exploitable Ambiguities

It is inevitable that when statesmen get together at the Summit to settle matters at an appropriately general conceptual level that there will be room for disagreement later on about what was decided.

These disagreements are often regarded as loose ends or technical details. But they can have a large cumulative effect, especially if one side works harder at exploiting them than does the other. It is now clear, three years after the SALT I agreement, that the Soviets in fact do diligently exploit the ambiguities in summit understandings.

An important example is the Soviet exploitation of the distinction between heavy and light ICBMs and associated restrictions on silo dimensions. Much was made in SALT I of the distinction between heavy and light ICBMs. We had in mind preventing the Soviet large missile and throwweight advantage from growing even larger. To achieve this it was agreed that launchers for "light" ICBMs could not be converted into "heavy" ones. It was also asserted by the U.S. and ambiguously agreed to by the Soviets that an increase in silo dimensions could "not be greater than 10-15 percent of present dimensions." Unfortunately, the terms "heavy" and "light" were not defined. However, the U.S. representative said unilaterally that we "would consider an ICBM having a volume significantly greater than that of the largest light ICBM now operational on either side to be a heavy ICBM." The Soviets, who had not agreed to this understanding, in the next several years then proceeded to modify silos, shift to cold launch, pop-up techniques, and to develop four new larger and higher payload ICBMs. In the process, the effective size of the "light" missiles involved, measured in terms of payload, will be increased from two to four times. Whatever the ambiguity in the constraints, we have not called these increases a violation.

The exploitation by the Soviets of the loopholes and ambiguities in SALT I should not have come as a surprise to the U.S. It was foreseeable--and it was forseen by some analysts. Their predictions, which were in some instances quite specific, were brushed aside as being far-fetched. These predictions were based on the view I have stated, that the Soviets would use arms control to improve their relative advantage.

The part of the 1972 agreement that is perhaps its apogee of ambiguity is the 10-15% limitation on increases in silo size. An increase of 10-15% (meaning in effect 15%) could refer to 1) silo depth, 2) silo diameter, 3) silo volume. The difference in the volume of

the missile that it could hold (which has a good deal to do with the difference between a light and heavy missile of which we made so much) would be, respectively, 1) 15%, 2) 32%, 3) 52%. The background to the negotiations makes it clear that an increase of 15% in one dimension or the other would be permitted but not both. Secretary of Defense Laird said that he would consider it a violation of the agreement if the Soviets were to increase both dimensions: "In no case would it be possible for the Soviet Union to retrofit their SS-11 silos with a new significantly larger missile. . ." The Soviets have had a different understanding, one that is compatible with their vigorous efforts to replace old light missiles with new bigger ones. Despite the ambiguity in the constraint the Soviets have certainly violated the spirit of the Interim Accord with this program. They have also violated the letter of the agreement as it was described to the Congress at the time of its approval.

A more recent example of confusion at the summit is in the ambiguity I have discussed in the limitation on air launched missiles at Vladivostok. By failing to distinguish between ballistic and cruise missiles at Vladivostok, the Soviets have been given an opportunity to try to eliminate or restrict the U.S. cruise missile program. Moreover, some confusion apparently existed in the minds of our negotiators which could have resulted in the range constraint being greater by a factor of two (depending on whether kilometers, statute miles or nautical miles were used).

The ability of the Soviets to press ahead with vigorous programs which are inconsistent with our understanding of what was decided at SALT I raises serious questions about the adequacy of the limitations which have been adopted and of the verification measures. There seems to be two positions that one might adopt: either our negotiators have formulated the agreement so ambiguously that the Soviets are not significantly constrained in what they may do, or they are violating the agreement--or both. Either way it is a sad commentary on our performance.

A contributing cause to these defects has also been the extraordinary secrecy with which the negotiations have been carried out from the start. I believe in the need for secrecy and I am not arguing for open covenants openly arrived at. However, the obvious exclusion of much of the government that has statutory responsibility for U.S. security has been a serious error. It may be, as some of those involved in the SALT process aver, that the bureaucracy will not produce conceptual breakthroughs in the field of arms control. But the exclusion of the relevant parts of the bureaucracy from important aspects of the SALT process seems to have contributed to the generation of unequal agreements and exploitable ambiguities.

The Tendency of U.S. Negotiators to Write Agreements so as to Conceal Disagreements and to Be Passive in the Face of Provocations

Daniel Patrick Moynihan, in a recent article in Commentary Magazine, entitled "The United States in Opposition," has described the profound tendency of American spokesmen to accept passively, even supinely, the most outrageous claims and assertions of spokesmen of the Third World. He calls for a reversal in our traditional role, for an increase in candor and for a forthright statement of our interests. His injunction is needed also in the realm of arms control. The experience of the Laotion Accord in the 1960s, of International Control Commissions and with the Non-Proliferation Treaty fits this pattern. SALT exhibits a similar behavior on the part of the U.S. spokesmen. Mr. Moynihan's plea that we be more vigorous in defending our interests with respect to the Third World could be applied with even greater diligence to the more serious matter of our interests as they relate to our principal adversary.

Is SALT Necessary for Detente or Detente for SALT?

When the disparities in SALT are pointed out, some U.S. spokesmen have replied that the alternative is greatly heightened hostility with the Soviet Union, an unleashing of an unlimited arms race, or even nuclear war! Faced with that alternative, an unfavorable SALT agreement would seem greatly to be preferred. But one wonders how we managed to reduce spending on strategic offensive and defensive arms so much before SALT. Evidently we have always had detente. Or maybe the given alternative posed is false.

On the other hand, those who regard skeptically the benefits we have derived from detente, for example in S.E. Asia or in the Middle East or in grain transactions with the Soviet Union, are asked to direct their attention to the accomplishments of SALT. This is held to be the premier accomplishment of detente. If this is so, then the others must be very modest accomplishments indeed.

What Should Congress Do?

It is evident that the Vladivostok accord does not promise to produce a SALT II agreement or treaty which will satisfy PL 92-448, passed after SALT I, which requires that future agreements not leave the U.S. in an inferior position with respect to intercontinental strategic forces. The Congress should stick on this position. This means refusing to endorse an agreement that:

1. Prevents the U.S. from building large missiles of the type the Soviets have, and that gives the Soviets an advantage in throwweight and the potential of a large advantage in warheads. I doubt that we should build such missiles and I am not in favor of spending a lot of money on trying to redress the throwweight disparity, but the future is uncertain and we should not be prevented from doing so in the future. An agreement of the proposed duration of SALT should not condemn us to an inevitably inferior position.
2. Excludes manned Soviet bombers obviously capable of attacking the continental U.S. such as Backfire (and also Badger) while comparable U.S. bombers are counted in the agreement. The exclusion of Backfire in particular would make a travesty of the entire agreement and transfer it from one of equal aggregates at the 2400 level to one of unequal aggregates at whatever superior level the Soviets choose.
3. Limits cruise missiles, whether air, sea, or land-based. This is a technology that promises to help move capabilities away from large scale indiscriminate character to more precise, discriminate and stable character, and toward the substitution of non-nuclear for nuclear weapons in some case. It should be encouraged, not limited.

4. Is dependent on behavior which is not reliably monitorable by national technical means. Secretary Kissinger's counting rule on MIRVed missiles is a sound one; alternatives that might be proposed should be viewed critically and with skepticism. In addition, limits on cruise missiles or on land mobile ballistic missiles which are obviously unverifiable or subject to large uncertainties should not be accepted.

Finally, I hope that the Congress comes to recognize the basic defects of the SALT negotiations: the obsessive secrecy, the summitry uncontrolled by other parts of the government, the concentration on short term, largely illusory political benefits at the expense of essential elements of our military capability. There is an important role here for continuing Congressional oversight.