

THE ARMS CONTROL CALCULUS:  
Factors Affecting the Susceptibility of  
Military Instruments and Activities  
to International Regulation.

by

RONALD GORDON PURVER  
B.A., University of British Columbia, 1973

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS

in the Department  
of  
POLITICAL SCIENCE

We accept this thesis as conforming to the  
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

October, 1974

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of POLITICAL SCIENCE

The University of British Columbia  
Vancouver 8, Canada

Date OCTOBER 10, 1974

ABSTRACT

A realistic assessment of the prospects of arms control must take into account the full range of "factors affecting the susceptibility of military instruments and activities to international regulation." What arms control theory presently lacks is the explicit and systematic analysis of these key factors, in general and applied to specific cases. This paper offers a typology of such factors, drawn from the existing body of arms control theory, and applies it to a concrete historical case--the Soviet-American Strategic Arms Limitation Talks of 1969-1972. It is hoped thereby to throw light on both the initiation and success of negotiations, and the specific form which agreements are likely to take--that is, the types of weapons systems or activities most susceptible to international regulation, and why.

The diversity and abundance of conceivable factors, together with the general paucity of "hard data" available, cautions against a premature attempt at precise quantification or rigorous comparative analysis. Instead, for the moment, the method must be used as a mere guide to the deeper understanding of given historical phenomena.

The factors fall into four broad categories: (1) the "nature of the system (instrument or activity) to be regulated;" (2) the "characteristics of the strategic landscape;" (3) the "characteristics of the political environment;" and (4) the "nature of the arms control system envisaged." The initial

analysis and the subsequent case study concentrate on categories (1), (2), and (4), viewed as constants, promoting or hindering efforts toward agreement regardless of the alignment of domestic political interests at a given moment. The holding of given negotiations or the successful conclusion of given agreements may owe more to quite transitory political circumstances than to any of these more "intrinsic" variables. Yet the latter will shape the form and content of agreements reached, if not provide the underlying impetus.

While it is not possible to compare the relative saliency of the factors identified, the case study approach can be used to generate general hypotheses relevant to this end. First, the ways in which SALT may be an atypical example of arms control are discussed. Then, conclusions are tentatively advanced, based on the detailed analysis of SALT, with respect to: (1) the enhancement of strategic stability as a prime criterion for regulatory efforts; (2) the costs of weapons systems as an increasingly salient factor; (3) the decreased concern with problems of verification; (4) the importance of "parity" between adversaries; (5) the possibility of "trade-offs" within the armaments field, as well as from outside of it; (6) the significance of disparities in the cost-effectiveness of defense and offense; (7) the not necessarily negative influence of rapid technological development; (8) the apparent strength of mutual interests in arms control among political adversaries; and (9) the type of restraints most likely to be achieved.

Analysis of the "factors affecting the susceptibility of military instruments and activities to international regulation" may be useful in explaining the success or failure of past efforts, identifying areas of likely or possible future agreement, and assessing the prospects of particular proposed measures. Ultimately, by drawing upon a sufficiently large number of case studies, it may be possible to develop more rigorous (perhaps even quantitatively-based) theory.

## TABLE OF CONTENTS

INTRODUCTION.....	1.
PART I.....	4.
I. Nature of the System to be Regulated.....	6.
II. Characteristics of the Strategic Landscape.....	23.
III. Characteristics of the Political Environment.....	30.
IV. Nature of the Arms Control System Envisaged.....	39.
PART II.....	47.
I. SALT: Factors Affecting the Initiation of Negotiations.....	47.
II. ABM's.....	69.
III. Offensive Missiles.....	81.
IV. The Nature of the SALT I Agreements.....	88.
CONCLUSION.....	99.
FOOTNOTES.....	104.
BIBLIOGRAPHY	
I. Arms Control Theory.....	108.
II. S.A.L.T.....	113.

ACKNOWLEDGEMENTS

I would like to express my appreciation to Mark Zacher and Ole Holsti, who guided me through the planning stages of this paper; and to Dan Middlemiss and Kal Holsti, for their helpful criticisms of the first draft.

## INTRODUCTION

A distressingly large proportion of the existing literature on arms control and disarmament--apart from purely historical or journalistic studies--is confined either to exposing and lamenting the manifest shortcomings of past measures or agreements; or to formulating "ideal" programs and policies, without much regard to the realistic chances of their being implemented. Little effort has been devoted explicitly and systematically to identifying and analyzing the key variables affecting the initiation and success of attempts at international "arms" regulation. The lack of such analysis, crucial to any realistic assessment of the limitations of international action, may partly account for the surfeit of disillusionment and cynicism concerning the subject.

This paper represents an attempt to help fill the apparent void in theory. By definition ("international" and "regulation"), it will not be concerned with measures of unilateral disarmament, whether voluntary or (as at Versailles) imposed from without; nor (directly, that is) with the very important subjects of "tacit" arms control and war limitation.\* Our analysis shall be restricted to those agreements reached as the result of two or more independent and self-reliant Parties (the equivalent on the international political plane of "consenting adults") freely negotiating and bargaining on a basis of mutual

---

\* Which is not to say that some of the same variables will not be applicable in both areas.



respect and equality. We shall also assume a certain degree of "genuineness" on the part of the states concerned in entering into such negotiations and agreeing to abide by such limitations, the presumption being that in its absence there can be no hope whatsoever for "successful" measures of arms control. It is the latter with which we are concerned, not the phenomenon of arms control negotiations per se.

The paper will comprise two parts. Part I is a general discussion, based on the existing body of arms control theory, of the "factors affecting the susceptibility of military instruments and activities to international regulation." In Part II the individual factors identified in the preceding section will be applied to a concrete historical case, namely the Soviet-American Strategic Arms Limitation Talks of 1969-1972 and the agreements which they spawned. Throughout, we will focus on both the factors influencing the initiation of arms control negotiations (given that these may also bear upon the prospects of subsequent regulation), and the qualities of particular military "systems" which affect their susceptibility to agreement. It is assumed that much the same factors will be operative in either case--for example, the high cost of weapons systems generally, and the exorbitant price-tag of a given system; the threat to strategic stability of unregulated "arms racing" in general, and the destabilizing characteristics of a particular type of weapon. Consequently, no attempt will be made in Part I to distinguish between those factors affecting the initiation of negotiations, and those shaping their ultimate

success. In dealing with a particular case study as in Part II, however, it becomes convenient to make such a distinction--as we will by considering separately the initiation of SALT and the specific agreements reached therein.

The typology of variables presented in Part I will be used merely as a guide to the deeper understanding of a given historical phenomenon, not as a framework susceptible to either precise quantification or rigorous comparative analysis. Any attempt at the latter would be self-defeating in view of the bewildering array of conceivable factors and the general paucity of "hard data" on the subject available at the present time. Yet it may be hoped that, however unsophisticated, a systematic analysis such as follows will prove more useful than the haphazard--though undeniably enthusiastic and well-intentioned--expositions with which we are, sadly, most familiar.

## PART I

The various "factors affecting the susceptibility of military instruments and activities to international regulation" can be grouped into at least four broad categories: (1) the "nature of the system (instrument or activity) to be regulated;" (2) the "characteristics of the strategic landscape;" (3) the "characteristics of the political environment;" and (4) the "nature of the arms control system envisaged." Each of these categories embodies all three of the traditional "levels of analysis," i.e. the systemic, the nation-state, and the individual. For example, the "nature of the system to be regulated" can refer to the (individually-perceived) moral repugnance associated with the use of a particular type of weapon; to its utility, in terms of national goals; or to its effect upon the international balance of power. Similarly, the "characteristics of the political environment" include the general tenor of relations between states, in terms of trust or hostility; the relative power and influence of domestic bureaucracies involved in national decision-making; and the personalities and predispositions of key individual decision-makers.

The trend in the most recent literature on arms control has been to focus attention upon the "bureaucratic politics" associated with the process and with given accords.\* Indeed,

---

\* See, for example, Newhouse (1973); and Chayes (1972), who writes: "It is probably fair to say that the principal reason arms control agreements take so long to negotiate and are not more far-reaching is not so much the difficulty of one side convincing the other as the need for each side to generate a broad base of agreement and acceptance within its own (cont.)"

domestic in-fighting and jockeying over "disarmament" issues is a prime determinant of outputs in this, as in any other, area of public policy. While crucial to the understanding of a given decision, however, such a focus poses formidable, if not insuperable, problems for abstract analysis. One can speak only in very general terms of the relative strength and influence of various bureaucracies, constituencies, or ideologies, for instance, unless one focuses upon a particular historical case. On the other hand, certain characteristics of weapons or of their distribution throughout the international system, for example, may be considered as constants,<sup>\*Q</sup> promoting or hindering efforts toward agreement regardless of the alignment of domestic political interests at a given moment. It is upon such factors that the bulk of this section will be concentrated.

The distinction corresponds roughly to that between more narrowly nationalistic goals and the interests of the world community as a whole. The maxim that an international agreement is effective only to the extent that it reflects the continuing mutual interest of all the major parties suggests that the effort to identify and elaborate areas of common concern and benefit is not without merit. And, while keeping in mind the inherent limitations of the "rational-actor" model of foreign policy, one must not lose sight of the fact that domestic debate is conducted largely on the basis of allegedly rational analysis of the

---

(cont.) and allied policymaking establishments."(1)

\* Strictly speaking, of course, it is the perceptions of these "constants" by the actors concerned that matters.

"national interest." To the extent that such is the case, and that the debate is at all relevant to the policy-making process, the "rational-actor" model retains a certain validity.\*

#### I. NATURE OF THE SYSTEM TO BE REGULATED.

The first category of variables may in turn be broken down into a number of components, three of which roughly correspond to what are usually understood to be the primary objectives of arms control: (1) to reduce the likelihood of war breaking out; (2) to mitigate its severity and consequences when it does; and (3) to reduce the economic burden of the arms race. The corresponding variables are: (1) the effect of the particular system upon strategic stability; (2) the magnitude or nature of the destruction associated with it; and (3) its monetary cost.

##### Effect Upon Strategic Stability

Most popular support for general and complete disarmament has been founded upon the rather simplistic belief that by abolishing armaments, the resort to war could thereby be rendered impossible, and eternal peace thus ensured. This view completely misses the point, of course, that the war potential of states cannot be reduced without corresponding reductions in, for example, their levels of industrialization and social organization. More sober proponents of arms control have been satisfied

---

\* Cf. Colin Gray: "To escape from the blind alley of analysing the current phase of the arms debate in the United States exclusively in terms of bureaucratic politics, it is necessary to ascend to the greater aridity of 'rational actor' strategic analysis....it is certainly possible to describe fairly (cont.)

with the following arguments linking disarmament to the enhancement of international security: that that proportion of hostility and distrust accounted for by the mere presence of threatening arsenals would thereby dissipate; that, insofar as it depends on the sheer availability of weapons and the magnitude of resources already invested in them, the general willingness of states to go to war will be reduced; that longer periods of mobilization will provide greater opportunity for attempts at reconciliation to be undertaken and voices of restraint to be heard; and finally, that wars fought at a lower level of technological sophistication or with much smaller arsenals are likely to be less destructive and costly.\* So rests the case for general and complete disarmament.

As the latter has appeared progressively less capable of attainment, however, the "arms control" school has gained ascendancy.\*\* Efforts have, at various times, come to be devoted more

---

(cont.) standard lines of institutional argument...as reflecting a severely bounded rationality....[However,] 'Where you stand depends upon where you sit' should be the beginning of analysis; it should not be viewed as a statement charged with much explanatory power concerning policy resultant. Policy is not just the predictable resultant of a weighing (by whom? Is the process leaderless?) of the complex balance of interest inveighing or advocating on a particular issue. It is true that to be the standard-bearer of a more or less plausible argument is only one among the factors that will be weighed by the policy judge, but it is a factor of no mean importance." (2)

\* This may not always be the case, of course. In André Beaufre's words, "it is important not to forget that wars formerly conducted with very primitive weapons have led to the massacre of entire populations and that currently prolonged conflicts fought with very simple weapons at the guerrilla level lead to considerable destruction and losses." (3)

\*\* The two terms, "arms control" and "disarmament", are used interchangeably throughout this essay, although they have occasionally been counterpoised in the existing literature. The latter term suggests an actual reduction in the level (cont.)

closely to the abolition or restriction of particular types of weapons or military "systems." And the criteria for selection have often been related to the stability of the "strategic balance" or "balance of power"--in other words, to the likelihood of war breaking out. Such has been the case notably at the time of the World Disarmament Conference in the early 1930's, and throughout the period since the mid-1950's.

The delegates to the World Disarmament Conference recognized that certain types of armaments, which they chose to call "aggressive," were of greater utility to the offense than to the defense. The existence of such weapons in national arsenals, it was reasoned, contributed materially to the danger of war by offering both the prospect of a relatively quick and easy victory, and a certain advantage to the party which struck first. Were such weapons abolished, it was hoped, the relative advantage accruing to the defense would serve to restrain any potential aggressor and thus to forestall the outbreak of war, at least insofar as the latter is rationally determined. Heavy mobile artillery, large tanks, battleships, aircraft carriers, submarines, bombers, and chemical and bacteriological weapons were at one time or another singled out as being essentially

---

(cont.) of armaments of a state (though it has not always been used exclusively in this sense); the former--which might best be characterized as any conscious or purposeful attempt--whether unilateral or multilateral, tacit or explicit, peacetime or wartime--to place restrictions upon military forces or activities--is much broader in scope and may be considered to subsume all measures of "disarmament." "Arms control school", however, refers to that body of commentators which has shifted emphasis from general and complete disarmament to more modest (and hopefully, hence practicable) arms limitations.

"aggressive."<sup>4</sup> The key criteria seemed to be mobility, protection, and striking power, which, when "combined to the highest degree," were "more nearly indispensable to the attack in tactics, strategy, and grand strategy."<sup>5</sup> "In theoretical conception," wrote Marion Boggs, "...the defense disposes especially of striking power and protection, to a lesser extent of mobility, while the offense possesses mobility and striking power, and protection to a lesser degree."<sup>6</sup>

The thesis that weapons could be classified according to degree of innate "aggressiveness" met with considerable skepticism, of course.\* It would seem more correct to say that a given weapon or type of weapon might be employed either offensively or defensively, as the most innocuous military instrument (a metal shield, for example) could be used aggressively, or at least serve aggressive purposes. As Quincy Wright puts it: "While the shield would ordinarily be spoken of as defensive and the sword as offensive, it is clear that even in this simple case the distinction is relative. The shield increases the offensive effectiveness of the sword, and the sword can be used to parry as well as to cut or thrust."<sup>7</sup> In strategic terms, defense on one front might be used to aid and abet aggression on another front; this was one of the arguments of France at the Conference, fearing German designs upon her allies to the east. Indeed, the precise determination of what constituted an "aggressive" weapon,

---

\* E.g. Hans Morgenthau: "Weapons are not aggressive or defensive by nature, but are made so by the purpose they serve." (8)



and which particular systems fell within that category, proved a major obstacle to the success of the Disarmament Conference. Not surprisingly, perhaps, each participant tended to downplay the "aggressive" characteristics of its own major weapons systems, while emphasizing those of its rivals or potential rivals, in what has been aptly described as the "tendency of technical arguments to follow the flag."<sup>9</sup>

Despite the great practical difficulties encountered in applying this "qualitative principle" of disarmament, as it has been called, in theory it remains basically sound. As Boggs points out, "in the present stage of military development, certain weapons exist without which aggressive policy cannot be carried to a rapid and profitable conclusion."<sup>10</sup> Again: "it is conceivable that there are certain armaments which, even though capable of both offensive and defensive use, contribute more to the success of the attacking state than to the success of the defending state."<sup>11</sup> "The problem," she states, "is not to determine the absolute character of a weapon, but to make a comparison; to discover whether or not the offensive potentialities predominate, whether a weapon is more useful in attack or in defense."<sup>12</sup>

The preoccupation of the arms control community with strategic stability was also characteristic of the post-World War II period. Again, efforts came to be devoted chiefly to measures designed to reduce tensions and forestall the outbreak of war. All-out war between the Great Powers, in the nuclear age, was considered highly unlikely; a premeditated, strategic assault

by one nuclear Power upon another deemed practically unthinkable. Nevertheless, it was feared such a war might be initiated either accidentally or, under certain conditions, deliberately, in one of the following ways: (1) if an attacker could be reasonably sure of escaping retaliation in kind, or at least that measure of retaliation out of all proportion to the conceivable gains to be had; (2) if a state considered itself to be in imminent danger of an all-out attack, and perceived an advantage in striking first ("pre-empting"), so as to reduce its own damage and casualties or blunt the attack altogether; or (3) as the result of mechanical or human failure--for example, of a faulty warning system, an accidental launch, or the actions of mad--or at least irrational--men.

A number of international accords have been reached with a view to reducing this type of danger, although most such measures--such as the protection of retaliatory forces, and improved command-and-control procedures--have been taken unilaterally. The hot-line agreement between the Soviet Union and the United States was intended to help avert the accidental or "miscalculated" initiation of a strategic exchange. The nuclear non-proliferation treaty--insofar as it was motivated by the fear of catalytic war, degraded command-and-control safeguards, and less-responsible decision-making--was a measure of this type. All attempts to prevent local conflicts from spreading and escalating into "central" ones also fall under this category, of course, as do proposals for the "disengagement" of opposing front-line forces in particularly tense areas of the world.

It is symptomatic of the overriding concern with strategic stability displayed by "arms controllers" since the mid-1950's that one of the first subjects of international discussion after the shelving of early postwar plans for general and complete disarmament was "the prevention of surprise attack." This topic became particularly prominent after the advent of the ICBM, with its drastically-reduced warning time and virtual invincibility once airborne. Suddenly it became conceivable that an "aggressor" might be capable of simultaneously wiping out all or most of his victim's strategic missiles and bombers on the ground and thus, in one lightning stroke, of virtually forcing its surrender. Given such a potential, it seemed, the danger of war breaking out was enhanced on at least three counts: (1) that of making an aggressive policy more feasible and, hence, attractive; (2) the necessity of automatic response to perceived attack (a "launch-on-warning" policy), which increased the chances of accident; and (3) the heightened desirability of pre-empting a threatened attack, which likewise increased the chances of "miscalculation" by either side and made major crises that much more unbearable and potentially explosive. Such considerations led France to propose the abolition of "guided missiles" altogether. Less ambitious schemes called for the stationing of observers at launching sites, to give added warning time; limitations on the numbers of missiles permitted, to deprive them of a counterforce capability; and a variety of "passive" measures to protect the retaliatory forces of each side. In the end, multilateral efforts came to nought and

strategic stability was temporarily preserved by unilateral actions.

As the doctrine of "mutual deterrence" or "mutual assured destruction" became enshrined in the strategic lexicon during the 1960's, what had earlier been a question of "aggressive" and "defensive" armaments resolved itself into one of "first-strike" and "second-strike" capability. In a sense, the principle behind the distinction was the same: weapons systems of greater offensive than defensive utility were inherently destabilizing, in that they increased the chances of war. Thus unprotected intercontinental ballistic missiles came to be considered "provocative" since, being highly vulnerable to attack themselves, the only use to which they could logically be put was as part of a first-strike; while missiles in hardened silos, or airborne bombers, or submarine-launched ballistic missiles were all capable of "riding out" a first-strike and inflicting sufficient damage in retaliation to deter the potential aggressor from attacking in the first place. The avoidance of war being assumed to be in the interest of all sides (especially in the nuclear age), the limitation or abolition of "first-strike" weapons was viewed as a legitimate concern of arms control negotiations.<sup>13</sup>

In another sense, of course, the traditional distinction between "offensive" and "defensive" had lost all meaning. For, once states had come to rely for strategic stability upon a "balance of terror" (that is, the mutual holding-hostage of civilian populations), any attempt to limit civilian damage or

casualties (by means of massive shelter programs or ABM's, for example) became disruptive and undesirable, threatening aggressive intentions and itself subject to limitation or prohibition.

### Magnitude or Nature of Destructiveness

Underlying all of the mass movements for the "banning" of "the Bomb" since the dawn of the atomic age has been the realization of the terrible, unprecedented destructive power of the new weapons. Never before have men possessed the military capability of virtually annihilating their own kind. More than anything else, it is this fact which is responsible for "disarmament" itself being considered at times practically synonymous, in the public's eye, with "nuclear disarmament." It is this fact, too, which has impelled governments to expend the greatest amount of their arms control effort since World War II upon the question of nuclear weapons alone.<sup>14</sup>

Hopes have been aroused that their task might be made easier by virtue of the great disproportion between the destructive power of the weapons and the practical uses to which they might be put.\* Nuclear powers have a common interest in avoiding their use so long as the threatened destruction exceeds beyond all measure the conceivable gains to be had.\*\* Ironically, then,

---

\* See, for example, Louis J. Halle, who writes: "The development of the instruments of war beyond the point where they have any political utility or feasibility in active use must certainly be regarded as a permanent factor tending to deprive the resort to general war of its former legitimacy." (15) And, it might be added, tending to increase support for their abolition or limitation.

\*\* In Donald Brennan's words, "it would seem that each side is likely to be able to inflict far more damage on the (cont.)

their overwhelming power may render them practically obsolete as instruments of diplomacy; certainly of warfare. At the same time, however, it enhances both their utility as weapons of last resort, the threatened use of which might appear credible in the direst of circumstances; and their status as weapons of prestige, a kind of passport to greatness in the modern world.

Even schemes of less than complete nuclear disarmament have been rationalized on the grounds of reducing the extent of the destruction accompanying a possible war.<sup>16</sup> If nuclear war is to come, it has been argued, one can at least hope that it will be limited, by restrictions on the absolute size of the available arsenals, if by no other means.

The universal abhorrence of nuclear weapons owes a good deal as well, however, to the qualitative nature of the potential destruction, as illustrated so graphically in the ruins of Hiroshima and Nagasaki, for example. In particular, the immediate and long-run effects of excessive radiation exposure are considered intolerable byproducts of war by the world community.

Indeed, the use of nuclear weapons violates almost every precept relating to armaments which has been enshrined in the "laws of war." Traditionally, in the words of one author, it has been "a fundamental principle...that the choice of means of injuring an enemy is not unlimited."<sup>17</sup> Restrictions have been laid down in two cognate areas: against "inhumane" weapons, those

---

(cont.) other in a general war than either would find at all justified by the original objectives of the conflict, whichever side suffered the greater absolute damage." (18)

which cause injuries superfluous to the military necessity of rendering an opponent hors de combat (that is, which cause "unnecessary suffering"); and against the indiscriminate use of weapons on combatants and non-combatants alike. On both counts, nuclear weapons must be classed among the greatest of offenders.

It was the concern for the "inhumanity" of the weapon which led to the prohibition of dumdum bullets by the Hague Conference of 1899, and which was at least partly responsible for the 1925 Geneva Protocol and subsequent efforts to restrict chemical and biological (or bacteriological) warfare. More recently, weapons of excessive firepower, chemical sprays, "area weapons," delayed-action fuses, and the like have been identified as particularly "indiscriminate;" and napalm, white phosphorus and other incendiary weapons, hypervelocity rifles and anti-personnel bombs as especially "inhumane," instruments of warfare.<sup>19</sup> Napalm and other incendiary weapons were singled out in an October 1972 report of the U.N. Secretary-General because of the intense painfulness of injuries caused by them, the sophisticated medical resources demanded for their proper treatment, the lengthy period of recovery required for survivors, and the high probability of permanent deformity, as well as various toxic and asphyxiating side-effects.<sup>20</sup> In its words: "when judged against what is required to put a soldier out of military action, much of the injury caused by incendiary weapons is...likely to be superfluous."<sup>21</sup>

Not all of the common objections on humanitarian grounds are completely logical, of course. It is not certain that,

given the choice between being vaporized by a nuclear explosion and dying a slow death of "normal" bullet wounds, the rational man would opt for the latter. In particular, tear gas and other non-lethal chemical agents have been defended as more humane than more conventional weapons, although they fall under the same rubric as dreaded CBW weapons in the popular mind.

A third criterion for prohibition which has been suggested in recent years is an "ecological" one: that of the damage inflicted upon the natural environment.<sup>22</sup> Concern about this issue has been spurred by the massive use of chemical defoliants in Indochina, as well as by the heightened public consciousness of ecological problems generally. A somewhat related factor is what might be termed the "harmful side-effects" associated with the "deployment" of a given "system." This was particularly salient in the case of atmospheric nuclear testing, where public concern about radiation levels and possible genetic damage provided much of the impetus for controls. It also applies, with reference to possible radiation leakage or accidental detonation, to the introduction of nuclear weapons into any new environment; or to any activities interfering with other, non-military, uses of an area (such as the expropriation of vast expanses of the open ocean for missile firing ranges or naval maneuvers, for example).

#### Monetary Cost

According to Hedley Bull, pure economics is "the most ancient and the most simple of the arguments for disarmament,"



as well as being the most important motivation for attempts at arms control prior to World War I.<sup>23</sup> Quincy Wright, in his monumental Study of War, noted that "Disarmament movements have been common after great wars when countries were nearly bankrupt and wished to save money."<sup>24</sup> He attributes the calling of the 1899 Hague Peace Conference by Czar Nicholas II to the latter's being "advised by his minister of finance that his exchequer could not stand the strain of maintaining competition with Germany in making rapid-fire field artillery."<sup>25</sup> Of more recent vintage, the series of naval limitations negotiated during the inter-war period has been attributed in part to the unwillingness of key parties, for economic reasons, to pursue an arms race.<sup>26</sup> And clearly, many of the less important signatories of the Non-Proliferation Treaty were at least partly motivated by the realization that the cost involved in an independent nuclear capability was simply beyond their means.

As Bull points out, all weapons procurement decisions are constrained by economic factors, in spite of the importance of military security to the nation and the general priority accorded defence over "opulence."<sup>27</sup> Even for superpowers like the U.S. and the Soviet Union, certain measures, such as a truly effective civil defence system, while perhaps within the realm of technical feasibility, are ruled out partly on account of their prohibitive cost (also, of course, in the example given, because of its effects upon the quality of day-to-day life). Lesser powers are similarly denied the privilege even of only competing with the world's armament leaders.

At the same time, many authors warn against the false hope that a reduction in military expenditures will necessarily accompany the conclusion of arms control agreements, pointing out that verification procedures (as in the case of nuclear testing, for example) may well prove as costly as the system or activity prohibited--in addition to what has been described as "the iron law that every organization strives to maintain or increase its budget."<sup>28</sup>

#### Politico-Military Utility/Reliability

Sometimes arguments against a military authorization on the grounds of economy succeed only when buttressed by additional doubts concerning the utility and/or reliability of whatever is being proposed. In other cases, doubts about the utility of forces in being alone may suffice to engender a willingness to discuss their mutual limitation--as with various past proposals for the reciprocal "bonfire" destruction of obsolescent weapons, for example.<sup>29</sup>

The significance of almost every successful disarmament measure has been assailed on the grounds that whatever was prohibited either had ceased to be militarily useful or had never been considered so. Thus it is claimed by some that states have generally refrained from using poison gas mainly because of the tactical difficulties involved in its use in support of military operations, rather than through any ethical or legal inhibitions.<sup>30</sup> The partial nuclear test ban treaty was greeted by the Chinese and others with the conviction that atmospheric testing

had ceased to be of great importance to the powers concerned; or at the very least could, without much difficulty, be adequately substituted by underground explosions.<sup>31</sup> It was possible to agree on reducing battleship strength at the Washington Conference of 1922, asserts Hans Morgenthau, because military experts had come to the conclusion that the future lay with lighter and speedier ships.<sup>32</sup> The sponsors of the Non-Proliferation Treaty had no intention of freely disseminating nuclear weapons, point out the critics. Antarctica was never considered particularly strategic or environmentally hospitable to military activities. The Seabed Denuclearization Treaty is described as being "equivalent to one prohibiting the bolting of aeroplanes to the ground."<sup>33</sup> And so on.\*

Actually, the "desirability" of a given system is based on a rather complex calculus of cost, reliability, the existence of functionally-comparable systems, bureaucratic interests, and so forth, which defies all attempts at precise measurement of the effect or significance of a control arrangement. In many cases "military utility," strictly defined, has little bearing on the final decision whether or not to proceed with a programme or deploy a system (the American ABM system being a classic example).<sup>34</sup> Conversely, a negotiated limitation may well prove meaningful even in the absence of any evidence of such "utility."

Finally, a weapons system or given configuration of forces

---

\* For a persuasive argument in defence of such treaties, see Hedley Bull (1970), pp. 149-150, 152.

can be politically advantageous--in terms of "status" or diplomatic influence--even without being, in the strictest sense, militarily useful. Looking at the field of disarmament as a whole, it goes almost without saying that (in its broadest sense) the "political" utility of weapons or of armed forces --in a system of international "anarchy," marked by sharp conflicts, in which "national security" may be a relatively scarce commodity--constitutes a prime (if not the primary) obstacle to any controls. Thus the general susceptibility of a weapon or activity to international regulation may safely be said to vary in inverse proportion with its politico-military utility.

#### Susceptibility to Verification

Perhaps no aspect of arms control has been more exhaustively canvassed in the postwar literature than the technical feasibility of verifying compliance with various kinds of measures. The verification problem seems to have come almost full circle since the naval conferences of the 1920's and 1930's. Then, it has been pointed out, there was virtually no problem at all: whether or not a battleship was under construction, for example, could be verified easily enough through traditional intelligence means; furthermore, the injured party would have a sufficiently long time to recover before any real damage had been done; and a few more ships on one side or the other was not likely to alter the balance of power drastically in any case. Nuclear weapons were something entirely different, however: small enough to make the task of detection highly problematic; and powerful

enough that a very few could quite possibly upset the global balance.<sup>35</sup>

For many years East-West disarmament negotiations were hamstrung on the question of verifying compliance with the prohibition of nuclear weapons, each side fearing that the other would maintain a secret stockpile in reserve, if only for "insurance" purposes. Similarly, the Soviet Union's 1960 proposal to eliminate all strategic delivery vehicles<sup>36</sup> was opposed on the grounds that it would not be possible to prevent civil aircraft from being covertly converted into nuclear bombers. Recently, however, the remarkable capabilities of satellite reconnaissance have greatly simplified the task of verifying most kinds of arms control agreements. In most cases, verification need not be completely foolproof; all that is required is the capability of detecting a militarily-significant program of whatever kind. Before entering into an agreement, the parties concerned must examine: the technical feasibility of evasion; the degree to which it might affect the military balance, and whether irreparably or for how long; and the interests in and propensity towards evasion of the other parties, taking into account the likely penalties of such an action--all of these estimates subject to an unpredictable degree of misperception which causes them habitually to be calculated on the basis of the "worst possible case."

The technical feasibility of verifying an agreement is not always as crucial a matter as it is sometimes made out to be, of course. It did not prove sufficient to block achievement

of a ban on bacteriological weapons, for example, in spite of the manifest impossibility of verifying either their production and storage or the destruction of existing stocks. Here, as perhaps in the case of poison gas, it may be the fear of reciprocal use (given widespread potential capabilities)--together with its questionable military utility--which are the deciding factors.<sup>37</sup> This merely illustrates the general point that mutual self-interest in restraint may under certain circumstances serve to obviate the need for rigorous verification.

## II. CHARACTERISTICS OF THE STRATEGIC LANDSCAPE.

### Distribution of Capabilities Among States

Probably the most important of the factors falling within the "strategic landscape" category is the distribution of capabilities, or the existence of disparities in power and/or technical expertise, among states. How is it possible to reconcile the interests of the most powerful and advanced with those of the least? Or is it really necessary?

The relationship of forces between any two states, in general or with respect to a particular type of military system, may be expressed in one of the following ways: (1) unassailable predominance of one side over the other, in which case the possibility of competition is so slight that it poses no obstacle to arms control agreements; (2) temporary superiority of one side over the other, conducive to sharp competition with its attendant problems for arms control; and (3) approximate parity

between the two sides, also conducive to "arms racing" but at the same time providing greater opportunities for regulation. "Unassailable predominance" and "temporary superiority" are here considered as functions of the subjective impressions of the "inferior" side as to its middle- or long-run capabilities vis-à-vis its rival.

Of course, the relationship of military forces is by itself no sure guide to a state's behaviour, being tempered above all by political conditions, both domestic and external. Nevertheless, other things being equal, it may play an important role in determining the acceptability of proposed limitations to the parties concerned.

The chief problem in a situation of "unassailable predominance" is undoubtedly the lack of incentive on the part of the dominant power to risk jeopardizing (or in fact abdicate) its favourable position, unless there are compensatory benefits to be obtained in other areas. Where temporary superiority is the case, the leading power is usually driven to maintain its lead, while its adversary strives to equal or surpass it. Parity may lead to a similar competition, especially if one side or the other is unsatisfied with the political status quo, but is by its very nature more politically acceptable, as a state of permanent inferiority is likely to be less defensible for one side than the decline from superiority to parity is for the other. Parity of forces is assumed conducive to arms control also on account of its presumed connection with a stable "balance of power," which, by reducing the threat of war, may improve the

political climate for such negotiations. Finally, the formerly superior side may be more inclined to make concessions by the threat of a renewed arms race, while the formerly inferior ceases to be motivated by the fear of negotiating from a position of weakness.

When dealing with nuclear arsenals of the vastness of those of the Superpowers, of course, the concepts of "superiority" and "inferiority," as with those of "offensive" and "defensive," lose much of their meaning. Deterrent value or second-strike capability, as previously mentioned, becomes more critical than sheer numbers of weapons. There comes a point at which any further increment in "strength" is practically useless, except perhaps for psychological purposes, destructive capacity beyond this point being popularly dubbed as "overkill." A Power which has achieved such a "minimal deterrent" has in effect achieved parity with its rivals, in spite of any discrepancies in absolute numbers of weapons.<sup>38</sup> It has been suggested that, in the case of China for example, the attainment of such a capability might be sufficient to induce its entry into serious arms control negotiations.<sup>39\*</sup>

Where technical skills and capabilities are widely scattered throughout the world, it is naturally more difficult to

---

\* The same may have been true for the Soviet Union. Walter C. Clemens notes that "All the U.S.-Soviet accords since 1958 (the moratorium on nuclear testing) have been concluded against a backdrop of mutual deterrence, even though Soviet strategic forces have generally been weaker than American. The first promising moves toward arms control took place in 1955, i.e., at the very moment the USSR first acquired numbers of long-range bombers capable of delivering nuclear weapons to the United States, thereby giving the USSR (cont.)



achieve agreement on control measures, the chances of the latter varying perhaps directly (in inverse proportion) with the number of parties whose interests must be taken into account and adherence gained.\* It is this simple principle which lies behind the oft-expressed fear that further proliferation of nuclear weapons will destroy whatever chances of control presently exist. Furthermore, when desired<sup>10</sup> third-party adherence cannot be gained, the negotiation of agreements is likely to be both more complicated and less productive, as the possibility of outside forces upsetting an agreed balance in an unpredictable fashion at some point in the future must be taken into account, as well as the danger posed independently by these forces to either one of the original parties.

Several other "strategic landscape" factors may be briefly mentioned, among them the existence and relative costs of functionally-comparable systems. This is intimately connected with the "military utility" factor previously discussed, and more or less speaks for itself. Where a particular military system, proposed or in being, has a functional counterpart whose cost compares not unfavourably with its own (taking into account such "political costs" as public opinion and the autonomous "momentum"

---

(cont.) for the first time a terror weapon to deter external attack." (40)

\* Cf. W.K.H. Panofsky: "the surest way to frustrate the progress of arms control negotiations is to invoke an excessive amount of 'linkage' and to involve an excessive number of conferees. In fact 'linkage' or an overly large forum have at times been demanded by participants in arms control negotiations in order deliberately to inhibit progress without overtly assuming the responsibility for doing so." (41)

towards arms control), then it is, quite simply, more likely to be made the subject of international regulation. Thus atmospheric nuclear tests were done away with, without too much sacrifice on the part of those conducting them, because of the feasibility and capabilities of underground testing. And the considerable potential strategic advantages of seabed missiles proved no obstacle to agreement on their prohibition, in view of the cognate advantages of SLBM's. Some would argue that fixed land-based ICBM's should be comprehended under the same principle and made to suffer a similar fate, but, for a number of reasons (primarily the bureaucratic interests of the services involved), such has not proved to be the case.

The rate of technological development is another strategic "environmental" factor worth mentioning, which figures prominently in numerous analyses of the prospects of arms control.\* A point sometimes made is that where technology is rapidly changing, it becomes more difficult to "accurately assess the relative power" of weapons<sup>42</sup> and thus to calculate on the basis of approximate parity. Perhaps more importantly, agreements in one area may be seriously undermined by new technological innovations in the same or a cognate area. In any case, the major problem is undoubtedly the general feeling of uncertainty

---

\* Thus Hedley Bull devotes an entire chapter to "The Problem of Continuous Innovation" in his Control of the Arms Race, for example. About the only dissenting view on the significance of this factor is that of Colin Gray, who argues: "The record of the interwar years would seem to demonstrate that arms control tends to be subverted by politics rather than by technology. New technological possibilities will induce weapon designers to improve upon the state of the art, but --given the political will--a special or a regular (cont.)

generated, which exacerbates the tendency to "worst-possible-case" theorizing and tends to inhibit any kind of agreement.<sup>43</sup>

Another problem, distinct from the rate of technological development though not entirely unrelated, is represented by what might be called the asymmetries in opposing force-structures and strategies. As Hans Morgenthau points out, once disarming Powers have agreed on a certain overall relationship of forces, there remains the difficult task of formulating "standards to be attained according to which different types and quantities of armaments are to be allocated to different nations within the agreed ratio."<sup>44</sup> How can one possibly compare battleships with submarines? missiles with infantry divisions? or reserves with regular forces? The proliferation of disparate types of weapons systems (and strategies, too, which complicates matters still further) tends to be aggravated by rapid technological development, of course, but the basic problem owes more to the simple fact of differing geographical positions, resources, and defensive needs.<sup>45</sup> The attendant difficulty of measuring and comparing force-levels has plagued many negotiations, from the World Disarmament Conference of the 1930's to the Mutual and Balanced Force Reductions talks of the 1970's. It has even led to suggestions that as a first step towards disarmament, the major Powers might consider standardizing their strategic forces to the point where meaningful comparisons

---

(cont.) reconvening of an arms-control conference should be able to accommodate new weapon potentials." (46) This fails to address itself to the fundamental, underlying problem of uncertainty, however.

could be made.<sup>47</sup>

Overall disparities in the cost-effectiveness of defense and offense are also an important part of the arms control environment. When the offense is supreme, as has apparently been the case since the dawn of the missile age, concern over vulnerability to attack may spur efforts at international regulation with greater force than under other circumstances. Further, the recent apparent acceptance of mutual second-strike capability by the Superpowers--which may further the interests of arms limitation by promoting the concept of "finite deterrence"--is undoubtedly partly, if not primarily, a result of the technical obstacles to a successful first strike (involving neutralization of the opponent's retaliatory forces). And the ease with which defensive missile systems could be "saturated" by much cheaper offensive missiles contributes to the willingness of states to preclude the former by mutual agreement.

Finally, the structure of the international system, in terms of the general distribution of power and influence, may bear upon the prospects of arms control. It is difficult to say, however, which of the most commonly cited types of international systems are most conducive to it. In his balance-of-power model Morton Kaplan stresses, among other things, the limited objectives of war and the universal application of the rules-of-war, which suggest highly fertile grounds for arms control.<sup>48</sup> Furthermore, the absence of deep ideological cleavages<sup>49</sup> might be presumed to militate in favour of agreement. On the other hand, the fact that alliances are constantly shifting<sup>49</sup> lends a

certain amount of instability to the picture which might prejudice attempts to explicitly define and institute, or ensure the continuance of, given power balances. Operation of the so-called "unseen hand"<sup>50</sup> might, of course, obviate entirely the need for explicit agreements.

Under the "loose bipolar" system as posited by Kaplan<sup>51</sup>, wars would (in the absence of the threat of a nuclear conflagration) tend to be unlimited, with total elimination of the rival bloc the ultimate goal rather than preservation of the system. While ideological antagonism might further hinder negotiations, however, the fact that the major military powers had coalesced into just two blocs might simplify matters considerably, depending of course on the degree of "looseness" of the system. And the relatively strong presence of a supranational actor, together with a number of mediating states (however militarily insignificant), might provide the necessary impetus towards control.

It is rather pointless to speculate on the tendencies of universal and hierarchical systems, as the primary actor in both cases would by definition be able to impose virtually anything it desired on the system as a whole. Insofar as the latter is characterized by a notable absence of conflict, of course, arms control arrangements (imposed from above) would seem to be a logical concomitant.

### III. CHARACTERISTICS OF THE POLITICAL ENVIRONMENT.

In discussing the political factors affecting arms control

we should distinguish between the inter-state and the domestic arenas; between those political conditions within a state which cause it to seek negotiations, and those between states which permit the successful conclusion of international agreements.

### International Relations

The critical nature of external political conditions is attested to by all writers on arms control.\* Some, however, insist on the absolute unattainability of meaningful agreements in the face of continued hostility between the parties concerned\*\*, while others take a more sanguine view and maintain that such agreements can be reached in spite of underlying political antagonism. The argument of the first group is seriously undermined if taken to its logical conclusion, since, were perfect peace and harmony to reign among men, there simply would be no need whatsoever for explicit agreements; what they seem to be implying, then, is that meaningful arms control per se is but a chimera. Most authors agree, however, that such is not the case. It has even been pointed out that a certain amount of political conflict is indispensable for a situation to arise in which arms control is deemed necessary and priority duly accorded it.<sup>52</sup> Without political conflict, presumably, there would

---

\* In Hedley Bull's words: "unless the political conditions for arms control are present, the question of what method or procedure is appropriate in arms control negotiations, and the question how the technical problems involved in arms control can be solved, are of minor importance, and attempts to solve them in abstraction from political circumstances are of no significance." (53)

\*\* See, for example, Hans Morgenthau: "political settlement must precede disarmament. Without political settlement, disarmament has no chance for success." (54)

be no arms; and without arms, certainly no arms control. At another level, a near-holocaust or disastrous clash of arms may be helpful in providing the necessary stimulus to serious negotiations, as the First World War may be said to have laid the groundwork for the spate of inter-war conferences or the Cuban Missile Crisis for the Soviet-American accords of the 1960's and '70's.<sup>55</sup>

At the same time, it must be admitted that many of the problems commonly deemed "technical" do in fact stem from underlying political disagreement or hostility, and are more susceptible to negotiation and compromise than to scientific formulae.\* Since no verification scheme can be 100% accurate, an element of trust must inevitably enter into any control arrangement.\*\* And "trust" is pre-eminently a "political" factor in the world of nations.

What we are primarily concerned with, then, is the degree of trust or hostility characterizing the general relationship between the states involved, which in turn depends on the existence, strength, and character of outstanding conflicts between them, as well as a host of other considerations ranging from

---

\* Cf. Hedley Bull: "The problems of definition (what is an effective? what a military aeroplane, heavy gun, tank? etc.) are not in fact technical problems, but matters of bargaining. In other words, what the negotiators have to agree on in considering, for example, the limitation of tanks, is not what is a tank, but what they can agree to call a tank. This is a political question, not a technical one." (56)

\*\* Cf. Walter Clemens: "Though arms control accords are held to depend upon mutual interest for their durability, even the act of entering into the negotiating process requires a modicum of trust on each side." (57)

historical antagonism to sheer racism. Where the necessary conditions are lacking, pressure and/or guarantees from an outside agency or agencies, such as the U.N., the non-aligned bloc, or (in the case of regional conflicts) the Superpowers, for example, may be required. The relevant factors here are the susceptibility of the parties to outside pressure and the feasibility of outside guarantees. The latter factor depends on the capability and willingness of such outside actors to impose a solution upon the protagonists, if necessary, or to compensate for any upsetting of the agreed arrangements. It should not be assumed that the world's greatest Powers necessarily remain immune to the influence of the first factor, which may take the form, for example, of "world public opinion" favouring broad measures of disarmament. On the other hand, the concern of allies over the continued viability of guarantees extended them by the principal parties may adversely affect the possibility of agreed limitations between the latter, depending, among other things, on their willingness to subordinate their own interests to those of their client-states.

A final important characteristic of the external political environment is the existence of issues upon which "trade-offs" from other areas of negotiation may be feasible--especially in cases where outside pressure in favour of limitations is either non-existent or ineffective. Such issues must be both relatively important (roughly comparable to those of the arms policy under consideration) and, of course, "negotiable." As few other national interests are as great as those of defence policy,



however, it might be postulated that such trade-offs may be possible only with respect to the less significant measures of arms control. In any case, this factor would seem to assume a fairly broad relationship of interaction between the parties concerned.

### Asymmetry in Negotiating Styles

A subdivision of the "political environment" category groups those factors relating to the actual conduct of negotiations which may have a bearing on their ultimate success. In this regard, arms control negotiations are no different than those undertaken in any other issue-area, success requiring a certain amount of technical preparation, diplomatic skill, "good faith," and so on. One particular factor which should be mentioned, however, having received much emphasis in the literature critical of SALT I, is the possible asymmetry in the negotiating styles of the participants in arms control talks. If one side adopts a primarily political/competitive/bargaining-type stance, while the other focuses exclusively on technical issues (to take an extreme example), then the resulting dialogue des sourds may be totally unproductive (as was apparently the case with the Surprise Attack Conference of 1958) or, alternatively, the consequent asymmetries embodied in the final accord may prove more prejudicial to the original purposes of the negotiations than would the failure to have reached an agreement at all.

### Asymmetry in Domestic Political Regime

Yet another "asymmetry" factor is that dealing with the nature of the domestic political regime of the nations involved. The argument has been made that democratic states, by virtue of their greater responsiveness to public opinion, are more susceptible to disarmament "propaganda" and to appeals above the heads of their leaders for substantive concessions during negotiations. Insofar as one side may consequently feel itself to be at an unfair disadvantage, and adjust its negotiating strategy accordingly (in a more conservative or less flexible direction), this may have an adverse effect upon the overall prospects for arms control. Again, too, there remains the danger of asymmetries in an accord negotiated from positions of less than equal strength. And this factor also has implications for the verification question, as will be discussed shortly under the heading of "nature of the arms control system."

### Domestic Politics

Whatever the diplomatic climate, the impetus towards arms control must, in the final analysis, come from within the state itself. A favourable conjunction of domestic interests or at least the advocacy of key decision-making bodies and personalities is an absolute necessity. Such advocacy may be based on a wide range of considerations apart from those described in Section I with reference to the "primary objectives" of arms control. It may be "political" in the narrow sense of pander-

ing to public opinion or diverting attention from serious domestic problems, or "political" in the wider sense of promoting détente or seeking strategic advantage; it may be bureaucratic, in the sense of serving to preserve or enhance the power of a particular governmental organization; or it may be ideological, in which case the relative strength of pacifist, isolationist, militarist, or internationalist sentiment will largely determine the outcome. Under whatever circumstances, the importance of the military to national security, and of national security to the nation, predisposes against the imposition of undue restrictions on military activities. Not surprisingly, the military or military-industrial establishment (within which Hedley Bull includes "the armed forces, the armaments industries, the military branches of science and technology and of government, [and] the settled habits of mind of those who think about strategy and defence"<sup>58</sup>) is commonly viewed as the chief obstacle to arms control.

Obviously, the range of possible variables is too great to bear any but the most generalized analysis. Some rather primitive efforts at an overall synthesis have been made, however, by scholars attempting to assess the "arms control-mindedness" of particular states such as the Soviet Union and China. In their study of Chinese disarmament policy Halperin and Perkins, for example, identify two distinct elements as being necessary components of a "general philosophy" of arms control: (1) "viewing the use of military force as a political instrument, one which can and should be controlled by political means;" and (2)

"the notion that there is a cooperative as well as a competitive element in the nature of the military forces of potential enemies."<sup>59</sup> To these might be added a number of others: the realization that arms control can be a "non-zero sum game," that is, that both or all parties to an agreement can gain from it, and not necessarily differentially or at the expense of each other; the "perception and recognition by each government that there are responsible forces in the other country that favor arms control agreements of value to both sides"<sup>60</sup>; recognition that the alternative of unrestricted growth in armaments does not necessarily promise to enhance national security<sup>\*</sup>; where an arms race is in progress, the perception that the other side possesses the requisite combination of capabilities and will to match any new deployment which threatens to upset the existing balance of forces, and thereby to render illusory the attainment of a more than ephemeral superiority<sup>\*\*</sup>; with regard to nuclear-armed adversaries, the rejection of a first-strike capability as a desirable object of national policy; and finally, rejection of the all-purpose "devil theory" analysis of an opponent's intentions, which sees behind his every move and every proposal an ill-concealed bid for unilateral advantage.

---

\* Donald G. Brennan notes that despite vigorous arms programs on both sides of the "Iron Curtain", "that part of our national security that is measured by our ability to guarantee national survival in all its various senses has undergone a precipitous decline in recent years" (61) and "the absolute national security (measured in the same sense of their ability to guarantee national survival) of the Soviet Union has also undergone a precipitous decline since 1946." (62)

\*\* This is expressed in a slightly different form by Morton Kaplan, to the effect that "Where neither state appears to be in a position to acquire a substantial advantage over the (cont.)

This brings us to another, more general political factor to be considered, namely the overall foreign policy orientation of a state. It is not surprising, perhaps, that "satiated" states, content with the international status quo and seeking to preserve it, should welcome agreements which reduce the offensive capabilities of states generally; nor that unsatisfied nations should be at least as equally adamant in opposing such agreements.\* This factor is intimately connected with the nature of the agreement, however (especially its effect upon the existing relationship of forces), since even a revisionist Power may pursue arms control as a means to reduce the relative capabilities of its opponents, just as a proponent of the status quo may seek thereby to perpetuate its dominance. The revisionist Power in any given conflict relationship is simply not likely to be satisfied with a mere "balance of power," in which case differential restrictions may have to be imposed or conceded (depending on the willingness or capability of the conservative state(s) to do so) or some kind of overall political settlement worked out simultaneously with the controls. Thus, in a paper on arms control in the Arab-Israeli conflict, Fuad Jabber stresses the necessary "provision of non-violent means for challenging the status quo--such as diplomatic negotiations,

---

(cont.) other either by means of the economic resources it is capable of diverting to military production or by virtue of political seduction, the states would seem to have a joint interest in what for want of a better term is often called strategic stability." (63)

\* Evan Luard warns that "The rudimentary measures...already introduced between the United States and the Soviet Union may be...only a reflection of the growing common interest as status quo superpowers, rather than an independent (cont.)

arbitration, or legal adjudication."<sup>64</sup> It is somewhat doubtful that a state would be willing to exchange military power for such non-violent channels alone, however, unless quite sure of the ultimate settlement being resolved to its satisfaction.

#### IV. NATURE OF THE ARMS CONTROL SYSTEM ENVISAGED.

The final category of factors, the "nature of the arms control system envisaged," is different from the others in being posited, rather than given, not so much a matter of environment as of invention. Still, it is no less important a consideration to the conclusion and ultimate success of arms control agreements. When we speak of the "system envisaged" we are referring, of course, to the willingness of states to agree to a particular proposed arrangement, a purely hypothetical future state of affairs; yet the same considerations applied at this stage will carry over into implementation or evasion of whatever agreement is reached.

Among the most important of these factors is a definitional one, namely the type of restraints imposed, whether a reduction of existing armaments; a ceiling on existing armaments; a preventative measure of "non-armament"; or a qualitative restriction on the arms race. It is a generally accepted principle in the arms control field that it is far easier to legislate restrictions on weapons yet to be built or activities yet to be

---

(cont.) contribution to reducing tension between them. They give no indication whether similar agreements, covering new and rising powers which share no such common interest, may be attainable." (65)

undertaken than on forces or deployments in being. Such reasoning has been used in defence of the Antarctic, Outer Space, Nuclear Non-Proliferation, Latin American Nuclear-Free Zone, and Seabed Denuclearization treaties, for example. Two contributory factors may be cited: (1) the problem of vested interests, the strength of which is likely to vary according to the degree of effort and resources already expended on a particular program; and (2) the fact that, as Abram Chayes points out, it is much easier for the potential violator of an agreement "to replicate existing activities at a higher rate or in a new setting" than to embark on an entirely novel program.<sup>66</sup> In his words: "Modest or token as opposed to zero ceilings greatly simplify the problems of expansion and deployment after breach."<sup>67</sup> As well as increasing concern over the likelihood of evasion, adequate verification also may be more problematic in the case of "modest or token" ceilings, where preparations for expansion can be relatively easily concealed. Thus the susceptibility of a system to international regulation may in a sense be said to vary inversely with the stage of its development and/or deployment\* --with the notable exception of controls over pure research, which are scarcely feasible in view of the verification

---

\* But these factors may be offset, depending on the circumstances of the case, by several others: the lack of general public interest in developments yet to be undertaken or even planned; and the possible lack of theoretical knowledge, which may make states hesitant to negotiate about the area concerned.

problem. The latter also largely explains why it is generally believed easier to legislate quantitative restrictions than qualitative ones.

Success in negotiating an agreement may be assumed to vary inversely with the comprehensiveness of the measures proposed as well--although it has been suggested that comprehensiveness may sometimes aid in facilitating the task of verification, in cases where it is easier to detect the total absence of military activity than to discriminate among numerous disparate systems.

The other factors in this category fall under one of two headings: the nature of the verification and/or enforcement procedure envisaged; and the effect of the control system upon the relative capabilities and security interests of the parties.

The verification problem is found in one form or another under all four main categories. Thus, although a particular weapon may, by its nature, be more or less susceptible to verification, the verification requirements of an agreement also depend on the state of political relations between the parties concerned (and therefore the extent to which they may be able to "trust" each other) and the degree to which evasion of various magnitudes might affect the strategic balance (which is in turn dependent upon the nature of the latter, the absolute size of opposing forces<sup>\*</sup>, and so on). But whatever the purely technical requirements of adequate verification, it is the political

---

\* A very small number of missiles on each side might lend itself to instability, for example, if a marginal violation thereby could have a disproportionate effect on the strategic balance. In principle, this was recognized by Boggs. (68)



acceptability of such measures to those upon whom they will operate which counts the most. No matter how nearly foolproof the possibilities of guarding against evasion, they will not in themselves be adequate to ensure an agreement, even when other conditions are favourable, if they are not politically viable (as well as economically feasible). The same holds true for enforcement provisions intended to apply in the event of evasion.

In general, the likelihood of a control arrangement being found politically acceptable may be said to vary inversely with the degree of its "intrusiveness" upon national sovereignty. Thus measures affecting non-sovereign territories such as the high seas, Antarctica, and Outer Space have an advantage from the start. And satellite reconnaissance is revealed as a particularly appropriate means of verification, in view of its "low profile." Of course, "national sovereignty" being a relative term, interpreted differently from state to state, makes for some difficulty. What one Party considers an infringement of its sovereignty may not be considered so, or at least to the same extent, by its opponent. This may in turn be related to the form and nature of the domestic political regime.\* Similarly, a state may object on principle to entrusting supranational bodies with responsibility for verification and/or enforcement. In general,

---

\* So-called "closed societies" being assumed to be less willing to expose their inner workings and population to the outside world, in this manner, than more "open" ones. When dealing with negotiations between such dissimilar societies, a further problem is created by the asymmetries in advantage to be gained by such exposure. The "closed society" will have little or no manifest need and hence incentive to press for such privileges, in view of the very "openness" of its opponent, while its own secrecy constitutes a military asset and potential bargaining-chip. (69)

the greater the magnitude and complexity of such arrangements, the less likely they are to elicit support from the interested Parties as a whole. And as we have previously mentioned, the cost of the control system in certain cases may well exceed that of whatever is being prohibited, which is not to say that it may not be worthwhile in terms of enhancing security.

In de-emphasizing the need for complex institutionalized controls, Abram Chayes stresses the self-enforcing nature of any arms control agreement,<sup>70</sup> given the intense "negotiation and ratification" within the bureaucracies of each side which "tends to generate powerful pressures for compliance." According to Chayes,

At least three interrelated phenomena contribute to these pressures: (1) by the time the treaty is adopted, a broad consensus within governmental and political circles will be arrayed in support of the decision; (2) meanwhile, principal centers of potential continuing opposition will have been neutralized or assuaged, though often by means of concessions that significantly modify the substance of the policy; and (3) many officials, leaders of the administration or regime and opponents as well, will have been personally and publicly committed to the treaty, creating a kind of political imperative for the success of the policy. (71)

Roger Fisher adopts a somewhat similar approach, noting four "forces which tend to bring about governmental compliance: fear of retaliatory action, fear of the effect on public opinion, the moral views of government officers, and institutional resistance to breaking rules."<sup>72</sup> These are all in addition, of course, to what must be considered as the prime bulwark of any agreement: the pure self-interest of each of the Parties in reaching it in

the first place. As Fisher puts it, "Governments comply with treaties and other international rules as they do with constitutions and other domestic rules by a process of composite self-restraint....a treaty, like an egg, is kept from getting smashed by the enlightened self-interest of those who deal with it, not by anything inside it."<sup>73</sup>

Excessive concern with formal "enforcement measures," that is, with sanctions to be applied in case of violation, is also deplored by Chayes, who reminds us that the chief deterrent to such activity will inevitably be the unilateral reactions of the other Parties, in particular their possible repudiation of the agreement and the general worsening of relations with them which might be expected.<sup>74\*</sup>

Finally, the great bogey of almost all past disarmament proposals and negotiations has been the pursuit of unilateral advantage of one sort or another, real or imagined, by one side or the other, or both. It is said, for example, that one of the reasons the Soviets could not agree to the Baruch Plan was the unilateral intelligence advantages it would have accorded the United States.<sup>75</sup> Many authors stress that talks cannot hope to succeed unless each side gives up any idea of using them to gain some kind of unreciprocated advantage over the other, whether it be strategic or simply political in nature. Perhaps it should be

---

\* See also Robert R. Bowie, who states that "the parties to any arms control will have to depend ultimately on self-help--on their own strength and that of their allies--to protect themselves against any potential violator" (76) and "self-help will be the principal sanction" (77); and Thomas Schelling: "the main sanction of an arms-control agreement [is] the expectation that each will abstain only if the other does." (78)

added: "unless such advantage can be masked from the opponent."\*

This is not to say that every component of a given agreement must be so structured as to avoid favouring one side over the other; only that each Party must be satisfied that the relative advantages and disadvantages embodied in the total "package," including those from outside the strictly military-strategic sphere, do at least approximately balance out.

.....

The remainder of this paper will be an attempt to explain certain aspects of the Soviet-American Strategic Arms Limitation Talks of 1969-1972, using the typology of factors which we have constructed in Part I as a guideline. Of course, the holding of given negotiations or the successful conclusion of given agreements may owe a good deal more to quite transitory political circumstances than to any of the more intrinsic variables emphasized in Part I. Nevertheless, we hope to throw light on both why the talks were undertaken in the first place, and why it was possible to achieve agreement on certain measures of arms control, while not on others. What factors, in terms of environmental or situational "constants,"\*\* helped to determine both the "successes" (defined in terms of formal accords)\*\*\* and the

---

\* This may be too "unitary actor" a perspective on the problem, however. Different groups within a state are liable to agree to the same policy for different reasons, in which case ultimate "success" may depend more on the relative strength and influence of such groups than on any preconceived "master plan" formulated and put into execution by a monolithic leadership. Thus, for example, even though conservative acquiescence in negotiations may have been predicated initially on the hope for unilateral advantage, more moderate (cont.)

"failures"\* of the talks?

Nowhere do we assume that a given factor (such as concern for strategic stability) has operated with equal force upon both Parties to the talks. Some factors may have weighed less heavily on one Party than on the other; some, indeed, may have influenced only one Party at all. Thus, the paper cannot be faulted (as has been the approach of U.S. arms controllers to the Talks) for ignoring possible asymmetries in the interests of the two states, and sustaining a superficial "mirror-image" of Soviet concepts and motivations. In fact, "states" being highly abstract collective entities composed of multifarious agencies or agents pursuing multifarious (and often conflicting) ends, their ultimate "motives" (if, indeed, we may speak in such terms) are even less fathomable than those of individual men. If our approach does not in itself adequately explain why given negotiations take place, or how specific agreements are reached, however, it does at least suggest possible avenues for negotiation and throw considerable light upon their likelihood of success, once the underlying impetus is present and operating.

---

(cont.) elements may eventually win out.

\*\* See p.5.

\*\*\* Negotiations need not be so defined; they may be considered "successful" in terms of mutual goals even without producing formal accords--by enhancing stability through the clarification and possible convergence of strategic concepts and policies, for example. (79) Conversely, they may prove ultimately "unsuccessful", even if they do result in a formal treaty, when the latter favours one Party over another and consequently leads to destabilization.

\* Here referring to proposals which, though advanced during the course of negotiations, were rejected by one side or the other.

PART II

I. SALT: FACTORS AFFECTING THE INITIATION OF NEGOTIATIONS.

A great number of diverse rationales have been put forward to explain the willingness of the two Superpowers to engage in talks, beginning in 1969, on the mutual limitation of their strategic armaments. They range all the way from genuine concern with the stability of the strategic balance, to a transparent sham concocted for the benefit of world opinion, to attempts at gaining unilateral advantage by either freezing the other side's forces into a position of permanent inferiority, or stalling in order to gain time in which to surpass them. Since, as we have mentioned, there is no sure way of divining a state's "true" intentions, much less its motivations, we shall forego discussion of the Superpowers' "real" purposes in favour of examining the possible influence of those factors which we have identified as being in some sense intrinsic features of any arms control calculus. We shall thus avoid having to compare and crudely rank in terms of plausibility the various suggested rationales, while at the same time recognizing the fact that any government is likely to be impelled by a *mélange* of motivations corresponding to the wide range of interests and interest-groups which it represents. Many of these will be contradictory, and their relative strength may vary on an almost day by day basis.

In his defence of the SALT I agreements before the U.S. Congress, Henry Kissinger repeatedly stressed that they were but an integral component of a new and general framework of more relaxed

relations between the Soviet Union and the United States.<sup>80</sup> It is quite possible that on both sides, arms control per se was subordinated to the overarching interests of the political leadership in achieving or sustaining détente, which in turn might be attributed to a complex web of motivations. What we are interested in determining, however, is that, given the initial predisposition towards negotiations, what factors helped enable it to be consummated and shaped the form and content of the particular agreements which were reached?

#### Effect Upon Strategic Stability

Much of the discussion of the "nature of the system to be regulated" will be deferred until consideration of the individual types of weapons involved, of course. In general, however, we may mention, with regard to strategic stability, that a prime motivation of the talks was undoubtedly the presence on the horizon of a number of new systems threatening the traditional "balance of terror" between the Superpowers. On the Soviet side, a rapid buildup of particularly potent SS-9 missiles seemed to promise the "counterforce" capability of effectively destroying American Minuteman ICBM's in their silos. On both sides, but especially the American, the leap-frogging technology of multiple independently-targeted re-entry vehicles (MIRV's) similarly appeared to jeopardize each other's fixed land-based deterrent. And, perhaps most importantly, the development and initial deployment of ABM systems by each side threatened to alter the overall offensive-defensive disparity on which the

strategic balance was widely believed to rest. How much these considerations--so vital in the eyes of the "arms control community"--actually affected the key decision-makers on each side is difficult to say, but there is little doubt that they fueled the general impetus towards negotiations.

#### Magnitude or Nature of Destructiveness

In view of the somewhat meagre results of the talks, and the fact that neither of the Parties seems to have seriously entertained the possibility of actual reductions in existing forces, one might argue that concern for the level and nature of destruction attendant upon a nuclear war did not figure very prominently among their motivations. While not an immediate consideration, however, such concern obviously underlay the whole principle of the talks and the urgency with which they were pursued, providing much of the impetus seemingly based on other considerations, such as that of preserving strategic stability.

#### Monetary Cost

Another motivation which has received considerable emphasis in the literature on SALT (the strength of which is hotly disputed, however) is economic. Economic motivations were deemed by some observers to be particularly salient on the Soviet side, given the greater proportion of resources devoted by the Soviets to defense and especially to strategic forces in the preceding years, as well as perennially growing demands for consumer goods. Among the more specific evidence which has been cited by



Kremlinologists in support of this view has been: "The increasing emphasis in the latter sixties on working out new methodologies to insure optimum use of resources for military purposes, the apparent increase of defense expenditure during this period at a greater rate than growth of the Soviet GNP, the necessity of downward revisions of economic goals for the eighth Five-Year Plan (1966-70) and the long delay in drawing up the next Plan (1971-75), as well as Brezhnev's caustic criticism of Soviet economic performance at the close of 1969 when the SALT were begun."<sup>81</sup> After a comprehensive analysis of the issues involved, Thomas Wolfe, while noting the increased preference apparently to be given to consumer goods in the ninth Five-Year Plan (1971-75), cautiously concludes: "Although I do subscribe to the view that economic pressures have helped both to bring the Soviet Union to the SALT and to keep them there through more than two years of negotiations, it also seems to me...that economic considerations have not been the prime determinant of Soviet strategic policy in the past, nor are they likely to be in the future."<sup>82</sup>

The economic cost of new weapons systems and of the defense budget in general was perhaps the most persistent theme running through the commentary of U.S. Congressmen during the Senate Foreign Relations Committee review of the SALT I agreements in 1972.<sup>83</sup> Joseph I. Coffey cites an opinion poll of March 1971 according to which "49 per cent of the American people believed defense spending to be too high and only 11 per cent thought it too low." "More importantly," writes Coffey, "59 per cent of the

college-educated and nearly 55 per cent of the middle-income groups contended that defense spending was too high; in short, those elites on whom Congressmen depend most and to whose wishes they respond most readily are potentially in favor of arms control."<sup>84</sup> Administration officials are fond of pointing out in defense that the military's share of total government spending has been declining in recent years<sup>85</sup>; that the greatest increases in defense costs have been due to pay raises and other personnel benefits<sup>86</sup>; and that, as John Newhouse puts it, "performance with regard to spending on strategic weapons has been reasonably good," compared with that devoted to general-purpose forces.<sup>87</sup> Nevertheless, he notes: "the smaller sums spent on America's nuclear deterrent represent a far more-conspicuous--hence disturbing--item in the clouded public view."<sup>88</sup>

Generally speaking, the tremendous increase in costs of strategic systems in recent years--which have seen the projected price of some individual units, such as missile submarines, exceed the sum of \$1 billion, for example--has undoubtedly added, through public outcry and the concern of economy-minded governments, to the impetus towards SALT. Analysts continually caution that any savings resulting from arms control agreements are likely merely to be ploughed right back into other, unrestricted military programs according to Chayes' "iron law" of bureaucratic budgeting. This both ignores the fact that most such savings will be in terms of new costs foregone, rather than actual cut-backs in existing expenditures<sup>89\*</sup>, and does not obviate, of

---

\* An idea of what these costs might have been in the SALT (cont.)

course, the very real effects of pressures resulting from the mere perception of future savings, regardless of its validity.

### Politico-Military Utility

The military utility of strategic arms, at one time unchallenged, has during the nuclear age come under considerable questioning, as mentioned earlier. Under the doctrine of nuclear deterrence, the actual use of such weapons would, paradoxically, signify their very failure.\* Nevertheless, their ultimate deterrent value constitutes an unquestionably significant strategic advantage, and many states continue to endow strategic nuclear arms with considerable political significance, whether from the point of view of diplomatic bargaining or of pure prestige. All of these factors tend to militate against meaningful restrictions on the development and deployment of strategic arms. That the SALT were possible in spite of them is greater testimony to the modesty of the anticipated limitations than to any sudden change

---

(cont.) case was given by President Nixon at a news conference on June 29, 1972, in which he declared, citing various Soviet "plans" and "programs" in the ABM, ICBM, and SLBM fields: "if we had not had an arms control agreement, a limitation of ABM's and a temporary limitation for 5 years on certain classifications of offensive weapons, I would--and I am saying this conservatively--have had to ask the Congress of the United States to approve an increase in the defense budget for nuclear strategic weapons of at least \$15 billion a year on a crash program." (90) Of course, the President's self-assurance to the contrary, there is simply no telling what direction Soviet programs might have taken in the absence of SALT. Chairman of the Joint Chiefs of Staff Admiral Moorer clarified Nixon's claim somewhat when he admitted before the Senate Armed Services Committee that these cost estimates were based on the contingency "that the Soviets built up to the total extent of their capabilities" (91)--a very dubious proposition, at best (but not for that any reason why U.S. programs would not have been based on it).

\* According to the "mutual assured destruction" doctrine, (cont.)

in the conception held by the two Parties of the overall politico-military utility of the weapons.

### Susceptibility to Verification

As the susceptibility to verification of strategic arms varies significantly depending on the type of weapons system under consideration, discussion of this factor will be left until later.

### Distribution of Capabilities Among States

Under the "strategic landscape" category we have what is widely believed to have been the most significant factor affecting the Soviet decision to enter into meaningful arms control negotiations--their achievement of approximate parity with the United States in strategic power. Of course, "parity" is an extremely slippery term, much like its more venerable relative, the "balance of power," which tends to be interpreted vastly differently depending on which side of the fence one is sitting.\* Its American detractors\*\* insist that "true" parity--implying a stable balance of forces--cannot be equated with sheer equality of numbers or of destructive potential, where one

---

(cont.) at least. Proponents of "damage-limitation" or of a nuclear war-fighting capability would contest this judgment, of course.

\* Perhaps the best definition of "parity" is that given by Walter C. Clemens: "equivalence--not precise equality--of opposing forces, such that each side can accomplish comparable results, e.g., destruction of a certain percentage of civilian or military targets in a second strike." (92)

\*\* Referring to those who deny its desirability, not necessarily its existence.

is comparing an essentially status quo Power with a revisionist one.\* Often, the argument centers on the question of national "will" or determination, which are rightly construed as being at least as equally important indicators of a state's power as more material capabilities. But fundamentally, it is argued that the revisionist state, assumed almost by definition to be the more aggressive in nature, must be constrained by nothing less than superior force, if it is to be dissuaded from embarking upon an adventurist course of action.<sup>93</sup> Proponents of the parity concept as applied to East-West relations, on the other hand, stress the essentially conservative nature of Soviet goals, denying that they are in fact appreciably more radical than those of the United States.\*\* Further, the general technological superiority and greater overall resource-base of the Americans are

---

\* See, for example, Colin Gray, who writes: "Great geopolitical insight is not required to perceive that a status quo, ocean-empire superpower needs more raw strategic power than does a dissatisfied heartland superpower." (94)

\*\* See, for example, the testimony of Robert C. Tucker before the Senate Foreign Relations Committee: "the Soviet Union, too, in a certain sense is an old established status power.... Sometimes in the heat of discussions we tend to take it too much at its own, so to speak, ideological face value as a country committed to revolutions. We must remember that this revolution is 55 years old and that at 55 most revolutions are middle aged. And that is in many ways true of the Russian revolution. It is a country which, while in certain respects it is still actively involved in increasing its influence in the world, and we have all talked about that, we are all very much aware of that, but in certain other ways has a status quo to protect, particularly the status quo in Europe. In certain ways it is a conservative state and we have to learn to think in those terms. In certain ways the major problems that the Soviet government faces today are due to its conservatism, its unwillingness to liberalize its present laws, to abolish the censorship, to democratize areas of society, and to restructure the long standing established single party system. Consequently, I don't think the image of the old established static United States confronted with activist dynamic Soviet Union is a very accurate reflection of the reality (cont.)

adduced as hedges in their favour.\*

But the controversy runs even deeper than this. In terms of military hardware alone, there is considerable disagreement over the relative strategic strength of the two Superpowers. One side argues that the Soviet lead in numbers of launch vehicles and total deliverable megatonnage or "throw weight"\*\* gives them a significant advantage. The other side insists that this is more than offset by American superiority in numbers of independently-targeted warheads, not to mention its technological lead in most fields and certain geographical advantages. One calculation of relative strength based on the concept of "equivalent megatonnage," claimed to be "the measuring rod used by the Pentagon in

---

(cont.) of our interrelationship." (95) According to a study of Soviet foreign policy by Jan F. Triska and David D. Finley, most Western analysts view the Soviet propensity for risk-taking as "low and the Soviet attitude toward risk-taking as conservative, defensive, and cautious." (96) Walter Clemens maintains that "Soviet external behavior, at least since Stalin's death in 1953, has generally been consonant with an identifiable hierarchy of values....scaled in the following rank order: 1. The security of the ruling elite(s) within the USSR and the legitimization of their regime and ideology; 2. The security of the Soviet state; 3. Maintenance and strengthening of Soviet influence in areas of Eastern Europe and Outer Mongolia that have come under partial or complete Soviet control; 4. Rapid industrialization of the Soviet economy and improvement over time in the living standards of the Soviet people; 5. Less tangible and much less important than the first four goals, maintenance and strengthening of Soviet influence in the international Communist movement and the Third World." (97) Only the latter goal could be construed as at all "revisionist" in nature. Of course, this does not answer the objection that Soviet forbearance may have been due primarily to hitherto overwhelming American strategic superiority. But it is significant, in this regard, that, as Clemens puts it, "The historical record suggests that most Soviet actions threatening to world peace have resulted from a perceived sense of military inferiority rather than parity or superiority" (98)--again, to be fair, no necessary indication of future policy.

\* Secretary of Defense Laird assured the Senate Foreign Relations Committee: "we have technology which is, I believe,(cont.)

its secret studies to obtain a single figure for the total destructive capability of nuclear weapons of varied sizes," puts a figure of 4,000 on the Russian arsenal by mid-1977 (expiry date of the SALT I agreement on offensive missiles), compared with 4,450 for the U.S.<sup>99</sup>.

Regardless of the technical distinctions which might be made, however (and it is nowhere suggested that Soviet and American forces lend themselves to very easy comparison), it is an inescapable fact that the political leadership on both sides, as well as world opinion at large, has come to accept the validity of the notion of "parity" as characterizing present-day Superpower strategic relations.\* As we have previously stressed, numbers of nuclear missiles or warheads in excess of those required for an assured second-strike capability become rather meaningless in themselves. Nevertheless, there has been further controversy over whether the leaders of the two states are in

---

(cont.) from 18 to 24 months ahead of the Soviet Union....we do have a superior position as far as technology is concerned. That is the reason why I am confident that the disparity in numbers that exists in the offensive agreement does not prevent us from maintaining sufficiency as far as our deterrent is concerned." (100) See also the analysis of the overall "balance of power" in Clemens (1973), pp. 25-29.

\*\* Even this holds true only where missiles are concerned, for the balance is tipped drastically in the other direction (from a Soviet lead of 2.7 million pounds to an American one of 25.9 million pounds)(101) if the U.S. strategic bomber force is brought into the picture.

\* That this perception is grounded less in material reality than in symbolic strength is suggested most recently by a study of offensive missiles undertaken by the Stockholm International Peace Research Institute. Based on a mathematical analysis of the various factors--such as megatonnage, accuracy, number of warheads, and "hardening" of missile silos--affecting the counterforce capabilities of the two sides, it concludes that the United States has a virtually unassailable lead over the Soviet Union in this area by a margin of about

(cont.)

fact content with parity, i.e. are willing to live with it and have genuinely ceased attempting to attain or retain a significant degree of superiority. It may be assumed, of course, that habitually conservative military planners will never be satisfied with anything less than "first place." However, this is a question to which we shall return later when discussing the political environment of SALT.

How the mutual perception of parity affected the two sides' decision to engage in SALT is considerably less controversial. Even those who believe that the Russians seek ultimate superiority acknowledge that their attainment of parity may have helped induce them to enter into negotiations, if for no other reason than to stall for time. Others insist that, parity being a time-honoured goal of Soviet strategic policy, their apparent willingness to accept it was genuine. Thus Senator Cooper of the U.S. Senate Foreign Relations Committee declared that: "for almost 30 years every deployment we have made has been matched by an equivalent deployment and the only agreements we have reached have been on the basis of parity."<sup>102</sup> Marshall Shulman told the Committee: "What made the present agreements possible was not that the Russians were intimidated by our bargaining chips, but that they came close enough to eliminating their previous strategic

---

(cont.) five to one (103)--even without taking into account strategic bombers. According to this report, "even if the United States undertakes absolutely no new strategic-weapons-improvement programmes from now on and the Soviet Union completes, at the fastest possible rate, the maximum improvement of the land-based missile force possible under the present circumstances, dictated by the 1972 SALT I interim agreement on offensive missiles, the United States will still have an advantage both in K/N [counter-force] value and in number of re-entry vehicles going (cont.)



inferiority so that they no longer needed to fear that a freeze would leave them at a permanent disadvantage."<sup>104</sup> And another Kremlinologist, Roman Kolkowicz, testified:

The Soviet Union has now achieved this long-sought objective--strategic parity with the United States. Having climbed this plateau, the Soviet leaders began to pursue policies aimed at strategic arms limitation talks, SALT. I submit, therefore, that an indispensable precondition for SALT was the Soviet achievement of at least strategic parity, so that they could enter into the negotiations from a position of strength and political equality. (105)

On the American side, the Soviet achievement served notice that the only alternative to arms control was a new and more costly quantitative arms race. Had the Soviets continued their buildup, the consequent threat to the American deterrent would have required a response in kind. For all of those reasons discussed in Part I (pp. 24-25), then, it would seem that the attainment of strategic parity (at least symbolically) was crucial to the successful initiation of SALT.

The distribution of technical skills and capabilities throughout the remainder of the world posed no significant problems in the context of SALT I, despite recent concern over nuclear proliferation and premature talk of a Moscow-Peking-Washington strategic "triangle." While proliferation may ultimately pose considerable problems for strategic arms limitations, as a result either of significant reductions in the existing arsenals

---

(cont.) into the 1980s." (106) It predicts that "parity" in counterforce capabilities will not be attained, if at all, until "sometime in the early 1990s." (107)

of the Superpowers or of tremendous increases in those of the lesser nuclear states, the incredibly vast disparity in power between the two groups at the present time effectively obviates the need for Soviet-American soliciting of third-party adherence or alternatively compensation against possible external threats (with the possible exception of ABM's, to be discussed).

Asymmetry in Force-Structure and Strategy; Rate of Technological Development

The asymmetry in force-structure and strategy of the two sides was certainly operative in the case of SALT. The problem was largely bypassed, however, by concentrating on those forces in which meaningful comparisons could in fact be made, such as SLBM's and ICBM's, and ignoring those which would have presented considerably greater difficulty, such as forward-based systems and IR/MRBM's targeted on the opposing side's forces.\* In effect, the necessity of allocating armaments within an agreed ratio was postponed by essentially merely freezing deployments at their current level and in their current configuration. Similarly, the problems of rapid technological development were largely sidestepped, by keeping primarily to quantitative restrictions on weapons, rather than qualitative ones. If anything, leap-frogging technology may have given a boost to the talks by threatening new and costly innovations in existing systems.

---

\* For some imaginative proposed solutions to the FBS problem, see Strategic Survey 1972, pp. 14-16.

## Disparities in the Cost-Effectiveness of Defense and Offense

As previously mentioned, the disparities in the cost-effectiveness of defense and offense may be held largely responsible for both general concern about the danger of nuclear weapons and the Superpowers' acquiescence in mutual second-strike capability. Insofar as that is the case, then, this "strategic landscape" factor, too, may be said to have contributed to the initiation of SALT.

## Structure of the International System

Finally, the accelerated loosening of the bipolar structure of world power in recent years may have served to enhance the prospects of SALT, by focusing attention on the common interests of the Superpowers in warding off outside threats to their security or (more likely) influence. Thus the Soviet concern with their "Chinese front" has been adduced by many observers to be an important factor influencing their willingness to engage in limitations with the United States.<sup>108</sup> Another factor sometimes mentioned is the manifest disunity existing within the "capitalist camp", apparently believed by some Soviets to permit a general relaxation of military preparedness. Similarly, the obvious bankruptcy of their previous conception of a "monolithic" world communist movement may have softened the American attitude.

### Degree of Trust or Hostility Between the Parties

We now turn to the characteristics of the political environment which may have been instrumental in bringing about the talks. The most important of these is, of course, the new spirit of détente which has characterized Soviet-American relations during the past decade. This détente has been a fragile thing\*, and has been marked not so much by enhanced trust between the two governments on a day-to-day basis as by the disrepute into which "sudden, massive attack" scenarios have fallen and by the growing awareness of a substantial body of mutual interests, among which the control of strategic arms is one. It remains a very businesslike relationship, to be sure, but without its relative degree of relaxation it is hard to conceive of SALT ever having taken place.

### Susceptibility to Outside Pressure; Feasibility of Outside Guarantees

Apart from internally-derived pressures fueling the drive for détente and producing favourable "atmospheric" conditions, the Superpowers may have been influenced by the weight of their pledges at the time of the Nuclear Non-Proliferation Treaty, formally embodied within its terms, "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament." (Art.VI)<sup>109</sup> Insofar as this pledge was deemed crucial to their

---

\* Cf. Walter Clemens: "Difficult to cultivate, complicated to nurture, detente is a fragile flower easy to trample." (110)

effort to dissuade potential members from joining the nuclear club; given the extreme importance accorded this effort by the Superpowers; and to the extent that they may have been pressured by key non-signatories of the Treaty to make good their promise in exchange for adherence,\* it may be viewed as illustrating a certain "susceptibility of the Parties to outside pressure." On the debit side, the (real or imagined) concern of NATO allies over the continued credibility of the American "extended deterrent" may have served to restrain the latter's initiatives somewhat and, in particular, explains its refusal to consider forward-based systems, capable of striking Soviet home territory, as "strategic" weapons susceptible to negotiation within SALT. Finally, the highly sensitive nature of the subject-matter of SALT, together with the vast disparity in power between the Parties and any other conceivable international actor or coalition of actors, rendered the feasibility of outside guarantees of an agreement practically nil.

#### Existence of Outside Trade-Offs

The existence of issues upon which trade-offs from other areas of negotiation might have been feasible was not really a factor in SALT I, in view of the great success with which the

---

\* According to Elizabeth Young, writing in 1972, "several of the near-nuclear signatories of the NPT (including Japan and West Germany) have made it quite clear that they would ratify the Treaty only when they were satisfied that the United States and the Soviet Union were actually in process of curbing the strategic arms race." (111)

Parties managed to insulate their talks from all extraneous matters. Clearly, they felt that negotiations of such high importance deserved to be considered on their own merits, and on their own merits alone. A possible, though unverified exception may have been the tacit refusal of the Soviet Union (because of its fear of a nuclearized Germany) to enter into negotiations before attainment of the Nuclear Non-Proliferation Treaty.<sup>112</sup> However, it should be stressed that this example is drawn from the period prior to the start of actual negotiations (the Soviet invasion of Czechoslovakia, for that matter, served to postpone their opening). An attempt was made by President Nixon during the formative pre-talk stage to have the arms limitations linked to the resolution of outstanding Soviet-American conflicts in the world at large,\* but this was soon, unceremoniously, dropped. In fact, the talks themselves were so well insulated that American escalation of the war in Southeast Asia, including attacks on Soviet shipping, saturation bombing of North Vietnamese cities, and the mining of Haiphong harbour, failed to disrupt them in their critical final stages.

### Asymmetry in Negotiating Styles

A word should be said at this point about the alleged asymmetry in the negotiating styles of the two states, given that (as explained earlier) such a factor could conceivably play an influential role and has been a key element in the criticism

---

\* See his news conference of January 27, 1969, cited in Newhouse (1973), pp. 140-141.

within the United States of SALT I.\* The latter is typified by the contention of William R. Van Cleave before the U.S. Senate Government Operations Committee that "The American approach to SALT...was primarily analytical and technical, and the Soviet approach primarily political. The United States viewed SALT as if it were a scientific-analytical matter. The Soviets regarded it as a political process."<sup>113</sup> In fact, there was ample evidence of technical sophistication on both sides, as well as due attention to the political/bargaining aspects of the negotiations by the United States--how else is to be explained the currency of the "bargaining chips" argument among supporters of new military programs, the focus upon possible arms control "trade-offs," and the close and persistent involvement of the highest executive authority in each of the two states?

#### Asymmetry in Domestic Political Regime

The American critics of SALT I also argue that the asymmetry in domestic political systems gave the Soviets an unfair advantage prejudicing a truly balanced outcome of the negotiations. It is claimed, on the one hand, that U.S. hands were tied by public opinion during the course of the negotiations; on the other, that violating or circumventing the provisions of the agreements may be a simpler matter for the Soviets than for the Americans.<sup>114</sup> Nevertheless, a balanced assessment of the SALT I agreements hardly concedes them to be a lopsided unilateral victory for

---

\* As Colin Gray puts it, "Western and Eastern arms controllers may be playing fundamentally different negotiating games." (115)

the Soviets, and there is no reason to believe that the bureaucratic tendency towards strict conformity with their provisions is any less prevalent in the Soviet system. This does not, of course, affect the additional argument of the critics that possible public "euphoria" induced by the successful conclusion of the agreements may inhibit the United States from pursuing independent arms programs necessary for the maintenance of strategic stability. But the latter seems rather far-fetched, in view of the traditional strength and resiliency of military interests; if anything, the danger is probably greater that public complacency over the present very limited agreements or acceptance of the military's view that preparedness should be redoubled as a hedge against their violation may hinder the achievement of further, more significant measures of arms control.

#### Domestic Political Factors

The domestic politics associated with the initiation of SALT have been well covered in various published accounts (for perhaps the best example, see John Newhouse's Cold Dawn). In any case, debate on the issues (as opposed to naked bureaucratic interests, which saw the military and its supporters predictably ranged against an ad hoc arms control coalition, on both sides of the fence) drew primarily upon the factors we have already discussed, in particular the fears for strategic stability and the anticipated costs of a new arms race.\* In the end, the

---

\* There is considerable controversy in the West over the question of Soviet acceptance of key concepts held dearly by American arms-controllers, such as eschewal of a first- (cont.)



voice of accommodation--or perhaps it was only mutual recognition that the other side was willing and able, if necessary, to sustain the costs--seems to have prevailed, though not without severe restrictions upon the nature of the limitations negotiated.

As for the "general philosophy" of arms control discussed in Part I--a subject which could easily fill as many pages as this entire essay--suffice it to say that there is ample evidence that all of the principles enumerated above are shared by influential groups within both countries.\* The most important such principle may well be that of mutual recognition of the ability and willingness of each to match the other's strategic deployments; this is the view of Paul C. Warnke:

In my view, the reason that the Soviet Union and the United States have been able to negotiate and have been able to reach an agreement is because each side has had to recognize the other side's technical potential. Each side must recognize that it is not capable of achieving any sort of meaningful advantage in the strategic weapons field unless the other side is willing to concede that advantage, and nothing in the history of the arms race indicates any such concession or any such prospect of one dropping out of the competition if the competition continues. Neither side need let the other one gain an appreciable advantage and neither side will. (116)

Thus the acceptance of parity may be not so much a matter of choice, as of acquiescence in what appears to be inevitable.\*\*

---

(cont.) strike capability or of strategic "superiority;" acquiescence in "mutual assured destruction;" devaluation of the political utility of strategic power; the action-reaction model of the arms race; and the virtues of "strategic stability." The bulk of the evidence indicates that much internal disagreement existed within policy-making circles in the Soviet Union (as it did within the United States); but that a sizable and (cont.)

We have already mentioned the fears expressed by some on the American side that the Soviets may not have really accepted the principle of parity, or of mutual second-strike capability, and may in fact be continuing to pursue a course aimed at some kind of first-strike capability.<sup>117</sup> Even if the latter remains outside of their grasp, however, some contend that mere marginal numerical superiority (or even parity) may so embolden them, while at the same time discrediting the U.S. in the eyes of the world, that they may revert to the kind of aggressive "forward" strategy characteristic of their early postwar foreign policy. Undoubtedly, these concerns about the opponent's willingness to accept parity (and its concomitant of stability) have been mirrored by analysts on the Soviet side. The latter may be reading more than is warranted into the frequent statements of American military men and strategists extolling the virtues of a first-strike capability. It is true that President Nixon and members of his Administration were loath to use the precise term "parity," substituting for it the more neutral one of "sufficiency,"<sup>118</sup> and persisted in characterizing American power as being "second to none," rather than merely the approximate equal of

---

(cont.) influential body of opinion had indeed, to a remarkable degree, appropriated concepts from the American strategic and arms control lexicon. (119)

\* For evidence on the Soviet side, see especially Caldwell (1971); Holloway (1971); and Kahan (1972), pp. 417-418.

\*\* Cf. Joseph I. Coffey: "arms control agreements with the USSR ... simply represent a mutual recognition of reality, which is that meaningful strategic superiority is not possible." (120)

the Soviet's.\* Nevertheless, that a rough measure of "parity"--as well as acquiescence in mutual second-strike capability or "assured destruction"--has been enshrined within the bounds of the present agreements, for as long as they last, seems incontrovertible.\*\* Several witnesses before the U.S. Senate Foreign Relations Committee pointed out that, if the Soviets have indeed gained any psychological edge from the marginal numerical superiority granted them by the SALT agreement on offensive missiles, it will have been due primarily to the alarmist

---

\* Resulting in such tortuous exchanges before the Senate Foreign Relations Committee as the following:

Senator AIKEN. First, does the Administration believe that we were able to negotiate these agreements because we have what the Mansfield-Scott resolution calls a defense posture second to none?

Is that right?

Secretary ROGERS. Yes, sir, that is right.

Senator AIKEN. We have a defense posture second to none and does the Soviet Union also believe that it must negotiate from a position of strength?

Secretary ROGERS. Well, I would assume so, yes, Senator.

Senator AIKEN. At the next round of negotiations which nation do you think will have the greatest strength from which to negotiate?

Secretary ROGERS. Well, I think it is difficult to answer that question. We believe we are second to none. I am sure that the Soviet Union feels that it is strong and is able to negotiate from a position of strength; so we enter, assuming the Congress supports us on the requests we are making, certainly generally supports us--I don't mean to every item, but we get general support--then I would think we would both enter the second phase of the SALT talks from a position of relative strength.

Senator AIKEN. It will be of equal strength.

Secretary ROGERS. Well, as I say, I hesitate to say equal. We certainly are both in a strong position. We think we are. We don't think there is anyone ahead of us, put it that way. (121)

For an equally befuddled discussion of the "sufficiency" concept, see the same Hearings, p.21.

\*\* In Wolfgang Panofsky's words, "The [ABM] treaty is equivalent to a joint declaration that mutual deterrence (cont.)

utterances of those in the United States calling for a more vigorous arms program.\*

Discussion of the factors falling under the category of "nature of the arms control system" will be deferred until after analysis of the individual restrictions and limitations of the agreements, by which time their precise parameters will have become clearer.

## II. ABM'S.

The only permanent agreement to come out of SALT I was a Treaty on the Limitation of Anti-Ballistic Missile Systems. In great contrast to the Interim Agreement on Offensive Missiles, this was a truly comprehensive and airtight document. Not only did it limit ABM's to two sites of 100 missiles each on each side (Art.III), but it absolutely forbade the development, testing, or deployment of sea-, air-, space-, or mobile land-based varieties of such systems (Art.V), which were broadly defined to include any "system to counter strategic ballistic missiles or their elements in flight trajectory"(Art.II) (thus comprehending so-called "exotic" ABM's, based on future technologies--such as lasers--not requiring missile interceptors).\*\*

---

(cont.) is the strategic policy of both the U.S. and the USSR and implicitly denies the usefulness of a nuclear war-fighting strategy." (122)

\* See, for example, the testimony of former Assistant Secretary of Defense for International Security Affairs, Paul C. Warnke: "It can give them a political advantage if, and only if, we appear to concede it to them by depreciating our own strength." (123)

\*\* But there seems to be some ambiguity here, as Initialed Statement "E" of the "Agreed Interpretations" provides for future negotiations "in the event ABM systems based (cont.)

Also prohibited were the attainment of a "rapid re-load" or multiple warhead capability for ABM launchers (Art.V); the upgrading of conventional anti-aircraft missiles, launchers, or radars to an ABM capability (Art.VI); the future deployment of any "radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward"(Art.VI); and the transfer to other states or outside of the national territory of the Parties of ABM systems or their components or technology.(Art.IX; and Initialed Statement "G" of the "Agreed Interpretations") Of the two sites permitted, one was to be centered on the Party's capital city (or "National Command Authority", in the jargon), and the other in its ICBM fields. The radars permitted in each case were specified as to exact number, type, and size.(Art.III)

Thus we can see that the ABM Treaty was both quantitative and qualitative in nature. Its primary significance lay in its codification of the principle of "mutual assured destruction," i.e., the absolute vulnerability of each side to the other's offensive nuclear forces; the perpetual holding hostage of the civilian populations of the two states. It was a principle not without its opponents, however.

#### Effect on Strategic Stability; Magnitude or Nature of Destruction

The initial deployment and imminent expansion of ABM

---

(cont.) on other physical principles and including components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars are created in the future."

systems on both sides were probably the greatest single spur to SALT, threatening as they did both disruption of the strategic balance and a costly new arms race. Thus the preamble to the ABM Treaty stated, among other things, the Parties' conviction "that effective measures to limit anti-ballistic missile systems would be a substantial factor in curbing the race in strategic offensive arms and would lead to a decrease in the risk of outbreak of war involving nuclear weapons." ABM's were viewed as a threat to the stability of the strategic balance in at least three ways. (1) By casting into doubt the ability of a state to effectively deliver its retaliatory blow against an aggressor, they would increase the incentive of either party in a crisis to pre-empt. (2) At the same time, they would enhance the possibilities of a successful first-strike by increasing the number of enemy missiles which could safely be allowed to survive such an attack. (3) And finally, they promised renewal of an intensive offensive-defensive arms race, in which the side feeling itself at a disadvantage with respect to ABM's would seek to overcome its inferiority through sheer numbers of offensive vehicles, in the hopes thereby of "saturating" the defense. Apart from the economic costs of such action, the general climate of uncertainty thereby created, as well as the heightened chances of accident or command-and-control failure (which must be assumed to vary with the absolute number of weapons available), would bode ill for rational strategic calculation.

The paradox is that while effectively promoting one of the

traditional goals of arms control, reduction of the threat of the outbreak of war, a ban on ABM's at the same time jeopardizes a cognate purpose, by ensuring a greater degree of destruction and higher civilian casualties in the however unlikely event of one nevertheless occurring. The ABM is, after all, an essentially defensive weapon. If it could be perfected to the point where its reliability was beyond doubt and its cost-effectiveness not unfavourable in comparison with that of the offense, it could change the whole face of nuclear strategy, by freeing civilian populations of their "mutual hostage" status. Those who favour such a development have become known as members of the "damage limitation" school, as distinct from the more orthodox proponents of "assured destruction."<sup>124</sup> They include a number of distinguished scientists and arms control experts, and their view has much to commend itself in theory. The existing "balance of terror," implying as it does mass slaughter in the event that deterrence should fail, is without question a morally reprehensible one. Somewhere along the line, however, a choice would seem to have to be made between damage limitation and war reduction; some kind of a trade-off between the two seems absolutely unavoidable.

Given the limited sophistication of present technology, of course, effective "area defense" against incoming ICBM's is a manifest impossibility. Most "damage limitation" supporters do not dispute this; what they object to is the apparent foreclosing for all time of the option of strategic defense. It can be argued, however, that even were technical capabilities quite

adequate, the consequent reduction in levels of destruction would still not be worth the price of the greatly increased chances (according to fundamental deterrence theory) of such wars breaking out in the first place. Furthermore, it is highly unlikely that the ABM capabilities of the protagonists will develop on a perfectly symmetrical basis, in the absence of which the temptation on the part of the leading Power to launch a first-strike in a moment of severe crisis might be simply too great to resist. Though less of a "quick-fix" solution, a more acceptable way of gradually eroding the "balance of terror" and replacing it by a more humane system would be simple mutual and balanced reductions in the numbers of offensive missiles--the incentive for which should be enhanced by the prohibition of ABM's.

There is also a school of thought which distinguishes between "area-defense" ABM's, freely acknowledged to be destabilizing; and so-called "hard-point" ABM's, which, it is claimed, in their role of protecting the fixed land-based deterrent of each side, would serve to enhance strategic stability.\* Effective "hard-point" ABM defense is widely believed to be more

---

\* It is interesting to note that the national capital area ABM systems permitted by the Treaty were also rationalized on the grounds of stability. As Secretary of State Rogers put it: "ABM coverage at the national capitals will permit protection for the national command authority against a light attack, or an accidental or unauthorized launch of a limited number of missiles, and thus decrease the chances that such an event would trigger a nuclear exchange. In addition, it will buy some time against a major attack, and its radars would help to provide valuable warning." (125) See also the testimony of Ambassador Gerard C. Smith in the same Hearings, pp. 53-54.



technologically feasible than the area protection variety.<sup>126</sup> The major problem here, however, lies in allaying the fears of one's opponent that a "hard-point" ABM does not in fact possess area-defense capabilities (especially where the ICBM's being protected are located in the vicinity of "counter-value" targets), or constitute a potential base on which to build an area-defense network.<sup>127</sup> Both such rationales were proffered in support of the U.S. Administration's original request for a "Safe-guard" system ostensibly intended primarily to defend Minuteman missile sites. In international politics, where appearances often count for as much as reality, if one side merely believes that its opponent has or might have such a capability, then the consequences for strategic stability would be equally as grave as if it were in fact true.

#### Monetary Cost

Another of the chief drawbacks of ABM defense highlighted in the debate on the U.S. Administration's proposed program in the late 1960's was its sheer financial cost. Initial estimates put at no less than \$50 billion the price-tag of a "thick" area-defense system for the United States, and worried members of the Senate Foreign Relations Committee pointed out that, given average cost over-runs on existing weapons systems of from 220 to 700 per cent, the ultimate figure could reach the truly staggering neighbourhood of \$400 billion.<sup>128</sup> While the latter might well have proven wildly exaggerated, even Administration estimates in the tens of billions of dollars were more than sufficient

to strike terror into the hearts of economy-minded Congressmen and provoke outrage among the public at large, in view of the questionable utility of the system. As is well known, plans for such a comprehensive network were soon discarded (or at least put in cold storage), and the Pentagon was forced to accept a much-emasculated system, re-named "Safeguard."

Nevertheless, U.S. savings on projected programs made possible as a result of the ABM Treaty have been privately estimated at as high as \$4.3 billion per year for the period from fiscal 1973 to fiscal 1979.<sup>129</sup> Secretary of Defense Laird put the figure at \$9.9 billion, in 1968 prices, for the entire period through the year 1981.<sup>130</sup> Comparable savings for the Soviet Union have apparently not been estimated publicly. It should be remembered that these estimates completely neglect the vast expenditures on new offensive missiles and other countermeasures which the two sides would have felt compelled to deploy, had their respective ABM programs been allowed to continue unabated (see pp.51-52), as well as the tens (or perhaps hundreds) of billions of dollars for the "thick" ABM systems which might inevitably have followed.<sup>131</sup>

#### Utility/Reliability; Harmful Side-Effects

The American public might not have so objected to the projected costs of the "thick" ABM system had it been convinced of both its utility and reliability. Serious doubts about the technical capability of the system to knock down incoming ICBM's, in view of the relatively simple and inexpensive countermeasures

which would surely be deployed, together with the danger of merely stimulating a self-defeating defensive-offensive race in crude numbers of missiles (in which the offense was assumed to have the advantage, by virtue of its greater economy), combined, however, to cast doubt that such a system would actually fulfil its intended purpose and serve to enhance U.S. security. A somewhat related factor, having to do with the possible harmful side-effects of the system once deployed, was embodied in public opposition to area-defense ABM on the grounds of the damage it might cause, through high-altitude nuclear bursts, to the very cities it was supposed to protect; as well as the ever-present threat of radiation leakage and accidental explosions or misfirings. There was also the fact that, in Newhouse's words, "metropolitan ABM sites were feared as potential lightning rods by people living next door to the sites."<sup>132</sup>

### Susceptibility to Verification

Verification did not represent much of a problem with respect to the limitations on ABM's. In testifying before a Subcommittee of the U.S. Senate Foreign Relations Committee in 1970, Herbert Scoville mentioned the necessity of building complex radars, deploying large numbers of missiles, and carrying out extensive training exercises as factors ensuring the susceptibility of ABM systems to verification, as well as the impossibility of clandestinely upgrading anti-aircraft missile defenses into an ABM network. He may also have been counting on the ability of the U.S. to compensate for any violations once detected,

as evidenced by his assertion that "Such a program would undoubtedly be detected with plenty of lead time to incorporate counter measures to permit penetration of such a system. The United States already has developed and tested MIRV's capable of penetrating an ABM system, and these could be deployed in an emergency much more rapidly than a Soviet ABM."<sup>133</sup> Although reservations have since been made by some critics of the Treaty as to the technical capabilities of verifying such prohibitions as those on rapid re-load capability, large ABM-type radars, and the upgrading of conventional air-defense facilities<sup>134</sup>, the governments involved apparently entertained few doubts about the effectiveness of satellite surveillance and traditional intelligence-gathering activities in detecting any militarily significant programs in violation of the accords. Thus Henry Kissinger --referring to the Agreements as a whole--assured U.S. Congressmen at a briefing in June, 1972, that:

...we are confident that national means of verification are sufficient to monitor the numerical limitations of this agreement.

We studied this problem in great detail before we entered negotiations, and determined for each category of weapon the margin of error that we thought our collection systems had and what we could do to react once we found out that there had been a violation.

In each of these cases, we found that the margin was well within tolerable limits. In this case, however, where we are dealing with numbers, we are confident that the national means of verification are sufficient to give us the highest degree of confidence that this agreement will be lived up to, or that we will know it almost immediately if it is not lived up to. (135)

One member of the Senate Foreign Relations Committee, in

exasperated response to a particularly belligerent critic, stated that "our people who handle those things claim that our present detection system is superior to on-site inspection."<sup>136</sup> That was the closest the public ever came to hearing about the substance of the Committee's completely "sanitized" session with the Director of the C.I.A., dealing with verification capabilities, on June 20, 1972.<sup>137</sup> It is difficult to question such assertions, of course, because of the highly classified nature of the relevant data. However, the fact that one of the chief obstacles to a MIRV ban was alleged to be the infeasibility of adequate verification<sup>138</sup>, while a prohibition on similarly multiple-warhead-armed ABM's was allowed to slip by virtually unnoticed, would seem to indicate that assurance rested, in the latter case, on something other than foolproof technical capabilities.

#### Distribution of Capabilities Among States

In the "strategic landscape" category, the only factors directly impinging on ABM's in particular have to do with the "distribution of capabilities among states." While the U.S. may have had a certain lead over the Soviet Union in ABM technology,<sup>139</sup> consonant with its general technological superiority, any such disparities in this regard were apparently insufficient to have constituted a stumbling block to agreement, as this factor as a negative influence is nowhere mentioned in accounts of the negotiating history of the Treaty. Both states had already begun to deploy ABM's, and may be assumed to have had considerable

testing experience with such systems. In this sense they might be said to have reached some degree of "parity." Furthermore, the lack of such capabilities by third-parties, reinforced by the non-proliferation provisions of the Treaty, made the task of achieving agreement that much easier. This is not to say that the incipient nuclear capabilities of China, Britain, and France did not pose an obstacle to specific ABM restrictions (such as a "zero" mode) by lending a certain validity (in terms of both needs and capabilities) to the arguments of "damage limitation" proponents within the two states.\*

#### Asymmetry in Force-Structure and Strategy

The asymmetry in the force-structure and strategy of the two sides (in that the original Soviet ABM was intended to protect its capital region, that of the U.S. one of its ICBM fields) posed a problem only insofar as it was consequently deemed necessary, apparently solely for the sake of symmetry, to allow each side to build a second system--in which it had hitherto expressed little or no interest<sup>140</sup>--in order to match the other's first one.

#### Disparities in the Cost-Effectiveness of Defense and Offense

Intimately related to the question of "military utility,"

---

\* There remains considerable difference of opinion over the damage-limitation capabilities of the systems permitted under the ABM Treaty (at least within the Soviet Union), with some observers emphasizing their adequacy in dealing with the relatively unsophisticated and light attacks of which the lesser nuclear Powers are deemed capable, and others stressing the ease with which they might be (cont.)

this "technical" factor may have been the most instrumental of all in inducing the apparent acquiescence of the two Powers in mutual second-strike capability or "assured destruction," and thus (indirectly) their willingness to severely restrict ABM systems. As Paul Warnke put it: "the ABM treaty...constitutes realistic recognition of the fact that no physical defense on any known or foreseeable technology is available against a nuclear attack of any significant size."<sup>141</sup> These sentiments were echoed later by Senator Cooper of the Foreign Relations Committee: "I think the treaty itself is testimony to the fact that both countries know they can easily overcome an ABM system."<sup>142</sup> Former Senator Joseph S. Clark was a little harsher in his verdict: "The ABM Agreement is a fraud because the military leaders of both countries know that the ABM will in all likelihood not work under battle conditions."<sup>143</sup>

### Domestic Politics

Of the political factors, we shall mention just two--in addition to those understood throughout the preceding discussion, of course--on the American side: the enhanced interest of the general public in the issue due to the civil defense nature of the proposed system's mission (as well as to its locale); and the fact that the only military service with a strong bureaucratic interest in ABM's was the Army, whereas the Air Force and

---

(cont.) overcome, either by saturation or through relatively simple technical countermeasures. In any case, according to John Newhouse, there is little doubt that the initial Soviet ABM system was intended "to protect Moscow from primitive Chinese nuclear weapons." (144)

Navy might on the contrary have been expected to display a notable lack of enthusiasm for it, in view of the threat which deployment by the other side would have posed to the successful fulfilment of their respective offensive strategic missions. It may be true that, as John Newhouse points out, military solidarity normally tends to coalesce when it comes to the question of procuring new systems, the individual services expecting mutual support in this regard. However, it is difficult to avoid the presumption that, when it came to the crunch at SALT, this factor may have been influential in accounting for the acquiescence of the Joint Chiefs of Staff in the restrictions.

On the Soviet side, where strategic defense has traditionally been a high priority item, it was an entirely different story. There the political leadership showed considerably more strength in overriding the general predispositions of their military establishment,<sup>145</sup> although again, inter-service rivalry (certainly, the competing demands of the general-purpose forces)<sup>146</sup> may have played a role of some kind.

### III. OFFENSIVE MISSILES.

Considerably less comprehensive in scope, though by no means less complex, was the second of the agreements produced by SALT I, the "Interim Agreement...on Certain Measures With Respect to the Limitation of Strategic Offensive Arms." This accord affected both the ICBM and SLBM components of the strategic offensive force of each side, but not their heavy bombers, IR/MRBM's, or forward-based systems; and was even more notably



deficient in qualitative, as opposed to quantitative, restrictions upon the offensive arms race. What it did provide for was, essentially, nothing more than a freeze on missile launchers and ballistic missile submarines (SSBN's) at the number then deployed or under construction (Arts.I and III), that is, at 1,054 ICBM's, 710 SLBM's, and 44 submarines for the U.S.; and 1,618 ICBM's, 950 SLBM's, and 62 submarines for the Soviet Union (Protocol to the Interim Agreement).<sup>\*</sup> In addition, the two sides were prohibited from converting existing "light" ICBM's into "heavier" ones (Art.II)<sup>\*\*</sup>, or "significantly" increasing (by more than 10-15 percent) the size of their silos<sup>\*\*\*</sup> (to accommodate such "heavier" missiles). This had the effect of freezing the number of "heavy" missiles, which only the Soviets possessed, at 313.<sup>147</sup> The chief defect of the Agreement lay in its failure to prohibit the MIRVing of individual missiles, by which process the number of nuclear warheads in each arsenal could be multiplied many times, as well as improvements in accuracy.

### Effect Upon Strategic Stability

The prime reasons for restricting offensive nuclear missiles were the same as those for controlling nuclear weapons

---

\* The only specific numbers mentioned in the Agreement appeared in its Protocol and applied to SLBM's and missile submarines. This was because the Soviet Union refused to publicly verify the number of its ICBM's in comparison with U.S. intelligence estimates. (148)

\*\* The precise phrasing of the restriction, as understood by the U.S., was a masterpiece of gobbledygook. According to their unilateral statement of May 26, 1972, appended to the Agreement, "The United States would consider any ICBM having a volume significantly greater than that of (cont.)

generally: the hope of reducing the destruction which would be suffered in the event of war (though this may have been more of a latent factor in the case of SALT); and the attempt to avert a costly and potentially destabilizing new arms race which it was believed would inevitably follow, in a familiar action-reaction cycle, the threatened superiority of one side over the other. The Americans, in particular, were worried about the introduction of the "heavy" Soviet SS-9 missile, whose large payload capacity made it a threat to their own Minuteman land-based ICBM's.<sup>149</sup> As for the latter, their inherent vulnerability--in comparison with that of bombers and SLBM's--posed a threat to stability, and should perhaps alone have been sufficient reason to prohibit them. It was believed--or purportedly believed--in the U.S. that doubts as to the survivability of even just one branch of the existing "strategic triad" would be sufficient to cause destabilizing conditions, however, and the expression "first-strike capability" came to be used synonymously with counter-ICBM capability. SLBM's were treated with much greater indulgence (except insofar as they posed a threat to air bases or command-and-control networks)<sup>150</sup> because their smaller size and reduced accuracy (at least for the present) made them eminently unsuitable as counterforce weapons.<sup>151\*</sup> Also on the

---

(cont.) the largest light ICBM now operational on either side to be a heavy ICBM." Neither "significantly greater" nor "light ICBM" were anywhere defined, however!

\*\*\* Initialed Statement "H" and Common Understanding "A" of the "Agreed Interpretations."

\* In Newhouse's words: "A stable strategic weapon should be capable of delayed response; it should be invulnerable; and it should be unambiguously deprived of what is called a first-strike, or damage-limiting, capability. Put differently, (cont.)

agenda were such developments as MIRV's, which, once a sufficiently high accuracy were achieved, would also constitute a threat to the fixed land-based deterrent of each side; and mobile land-based ICBM's, characterized as destabilizing because of the difficulty of verifying their numbers<sup>152</sup> and hence capabilities (in terms of first-strike potential). As we have seen, however, certain of these items (notably MIRV's and mobile land-based missiles) escaped limitation, while others did not. The answer why may lie partly in the relative capabilities of the two states, as well as in the nature of the agreements reached in toto.

#### Susceptibility to Verification

With respect to verification, we have already noted how sheer numbers of missiles were deemed highly susceptible to the "national technical means of verification" (i.e., primarily satellite and aerial reconnaissance) provided for in the SALT agreements. In this connection it might be mentioned that both the ABM Treaty and Interim Agreement prohibited the Parties from "interfering" with such verification activities or using "deliberate concealment measures" to reduce their effectiveness (Art. XII of the ABM Treaty; Art.V of the Interim Agreement). Considerably less certain, however, was the capability of the Parties to unilaterally detect qualitative developments in offensive missile weaponry. With regard to MIRV's, for example, it

---

(cont.) it should not be able to disarm some portion of the other side's forces, or diminish them appreciably." (153) Present-day SLBM's fit all of these criteria.

was suggested that even on-site inspection might be inadequate to verify a ban, as multiple warheads could be secretly stored away and then fitted on their launch vehicles at a moment's notice.<sup>154</sup> Verification of such weapons being thus infeasible at the production or deployment stages, the only hope lay in controlling them during their testing phase, before they had been certified sufficiently reliable and accurate for deployment. Once such time had passed (as it had, for the Americans at least, by the time of the Interim Agreement), the Powers would no longer be able to depend on the technical feasibility of verifying a ban. Verification of a mobile land-based missile prohibition was a far simpler matter, it being noted that detection of just one such weapon in the field would constitute proof of violation.<sup>155</sup>

#### Politico-Military Utility

The unquestioned military utility of MIRV's represented a further obstacle to agreement on their prohibition; a more cost-effective means of delivering nuclear weapons could scarcely be devised.<sup>156</sup> Still, one might argue, the existing degree of overkill embodied in the nuclear arsenals of each side makes the added destructive power inherent in MIRV's quite superfluous, especially considering that the threat which they were originally designed to counter--ABM systems--has been eliminated by mutual agreement.\* Such reasoning seems quixotic in the face

---

\* John Newhouse points out that MIRVing Minuteman is not only unnecessary, but may possibly prove positively harmful: "there seems little sense in spending \$6 billion to modify a (cont.)

of the sheer dynamism of military technology and their possible counterforce role, however.<sup>157</sup>

### Distribution of Capabilities Among States

In terms of the distribution of capabilities, approximate parity in overall offensive strength may be said to have been in effect at the time of SALT since, as we have previously noted, although the Soviets maintained superiority in numbers of missiles and "throw-weight," the Americans had a clearer margin in numbers of warheads and "equivalent megatonnage," as well as general technological superiority. This is not to say that the U.S. was not at a considerable disadvantage in not having an on-going program of new missile construction, as did the Soviets\*, but, more importantly, their potential capability, over the long haul, was at least the match of the latter--and it is not being completely naive to suggest that the Soviets may have realized this and acted accordingly.\*\* As for MIRV's, the wide U.S. technological lead may have indeed constituted a stumbling block, with the Americans unwilling to relinquish it and the Soviets at least equally averse to being frozen into a position of permanent inferiority.\*\*\* The result was that the U.S.,

---

(cont.) weapons system that one day will be vulnerable, hence unstable. Indeed, if Minuteman is vulnerable, putting MIRV's on more than half of them should only increase any temptation Moscow would have to eliminate the force in a crisis situation. In short, the MIRV's merely increase the 'bonus' the adversary gets by striking first." (158)

\* As Henry Kissinger put it, with reference to SLBM's, "The United States was in a rather complex position to recommend a submarine deal since we are not building any and the Soviets were building eight or nine a year, which isn't the most brilliant bargaining position-I would recommend people to (cont.)

while proposing a ban on MIRV's, attached the clearly unacceptable (and under the circumstances, technically pointless) proviso of on-site inspection; and the Soviets responded by suggesting a completely unverifiable (and hence, from the American perspective at least, equally unacceptable) production ban.<sup>159</sup> Clearly, neither side was very interested in limiting MIRV's at this stage of the game.

Neither side had apparently yet deployed a land-mobile ICBM system<sup>160</sup>, so disparities in this case posed no particular problem, except that, given the USSR's geo-strategic position as a predominantly land-based Power, such missiles would be of greater benefit or utility to them than to the United States. This might account for the great reluctance they displayed at SALT even to discuss such restrictions.<sup>161</sup> It may also partly explain why it was found impossible to single out land-based ICBM's as promising candidates for total prohibition (in view of their inherent vulnerability).<sup>162</sup> But such considerations belong more in the category of asymmetrical effects upon the interests of the two sides of the particular arms control system in question (to be examined shortly).

### Domestic Politics

Of political factors, we might merely state the converse of what we said with regard to ABM's. First (in the United States

---

(cont.) find themselves in." (163)

\*\* As Newhouse puts it: "the honors in an open race for strategic advantage should go to the fastest horse on technology's track--the United States. Nobody knows that better than (cont.)"

at least), public interest was not nearly so aroused in the field of offensive missiles, which people have long become accustomed to living with; which are neither as highly "visible" nor as ubiquitous as massive ABM systems would have been; and which are considerably less expensive. Second, the question of offensive missiles drove to the heart of the interests of two very powerful services, the Navy and the Air Force, whose combined weight must have been quite irresistible, at least within the military establishments of both states. These factors together undoubtedly played a part in ensuring that the Interim Agreement was not more comprehensive, involving, for example, actual reductions in the number of existing missiles rather than the mere imposition of ceilings on them.

#### IV. THE NATURE OF THE SALT I AGREEMENTS.

The two agreements reached at SALT I cannot be viewed in total isolation from each other (nor, for that matter, from possible follow-on agreements). They were, after all, a part of the same total package, involving trade-offs of various kinds cutting across individual types of weapons and even broad categories, such as "defensive" and "offensive." That is why we have left the "nature of the arms control system" category of factors until the end.

---

(cont.) the soldiers and diplomats of the Soviet Union." (164)  
\*\*\* For a particularly illuminating discussion, see Newhouse (1973), especially pp. 179-184.

### Type of Restraints Imposed

To begin with, as we have previously emphasized, the type of restraints imposed were in the nature of ceilings on existing or on-going deployments, rather than actual reductions in forces; as well as, in certain cases (such as sea-, air-, space-, and mobile land-based ABM's), what might be termed "preventative measures of non-armament." In addition, the Interim Agreement was long on quantity, short on quality, although the ABM Treaty did embody certain important qualitative restrictions (such as those on the size and power of radars). Both accords served mainly merely to sanctify the status quo, at least as far as numbers were concerned,<sup>165</sup> the Interim Agreement being rather more explicit, in this regard, than the ABM Treaty. In the latter case, on the American side, a system for which Congressional appropriations had been justified primarily on the grounds of its serving as a bargaining-chip in SALT,<sup>166</sup> was allowed to continue, though perhaps truncated (to what extent--if at all--depending on how many additional sites--if any--would have been funded by a basically hostile Congress). On the other side, the one existing ABM system was legitimized; it is unclear what further deployments the Soviets may have had planned. Each side was permitted, as a kind of perverse bonus, an additional site --in the American case, an NCA (National Command Authority) defense; in the Soviet one, a hard-point ABM--in which it had not even expressed interest prior to the negotiations. A truly unfortunate form of "mutual education," it might be surmised, from



the arms control point of view!

With regard to offensive missiles, it is true that an apparently dynamic Soviet program was successfully halted at the seemingly arbitrary figure of 2,358.\* However, U.S. Administration claims of having forestalled future Soviet deployments of at least 3,200 missiles<sup>167\*\*</sup> are probably exaggerated, as some critics contend.<sup>168</sup> They point out that the Soviet momentum had slowed down considerably by the time of the SALT I signatures, from a previous average rate of about 250 new ICBM's and 128 new SLBM's per year.<sup>169</sup> As one witness told the U.S. Senate Foreign Relations Committee, "It is not technically impossible for them to build at the rate of 200 ICBMs per year, but in fact there have been no new starts on ICBM launchers for about nine months, and in the preceding year there were only 80 launchers constructed or begun."<sup>170</sup> As for "heavy" missiles, "in fact the Soviets had only started 25 new large ICBM launchers since August, 1969."<sup>171\*\*\*</sup> Certainly, there is no reason to believe that Soviet deployments would necessarily have continued at the previous

---

\* Although the Soviets are allowed up to 1,618 ICBM's and 950 SLBM's (making a total of 2,568 missiles in all), increments in SLBM strength above the then-current level (deployed or under construction) of about 740 missiles were required to be offset by the retirement of older ICBM's or SLBM's (Art.III and the Protocol to the Interim Agreement), making an adjusted total of 2,358 permitted. Just another example of the sometimes Byzantine structure of the Agreements!

\*\* In his press conference of June 29, 1972, President Nixon mentioned possible totals of 90 missile-firing submarines and 2,600 land-based ICBM's. (172) He also alluded to Soviet "plans" for 1,000 ABM's within five years.

\*\*\* According to Walter Clemens, "some members of the U.S. negotiating team believed that the Kremlin simply agreed to ceilings which already represented its ultimate targets." (173) George W. Rathjens expressed similar sentiments (cont.)

high rate for the full five years covered by the Agreement, although it is possible that cut-backs during the latter stages of SALT were prompted at least in part by the prospects of a successful conclusion to the negotiations. These observations are not at all meant to detract from the historic importance or general significance of the SALT I agreements, but rather merely to illustrate further why it may have been possible to reach agreement on them and not on more comprehensive measures.

#### Nature of the Verification and Enforcement Provisions

With regard to the nature of the verification provisions, it may be mentioned that the Soviet Union, true to tradition, steadfastly refused to permit any on-site inspection of facilities or territory.<sup>174</sup> Happily, however, "non-intrusive" satellite reconnaissance and other unilateral "national technical means" were deemed by both Parties as adequate for the purposes of verifying fulfilment of the SALT I obligations. The formal "enforcement procedure" of the Agreements remained skeletal and vague (thereby probably enhancing their acceptability), consisting of the establishment of a Standing Consultative Commission (nevertheless a "first" in Soviet-American strategic relations) empowered to "consider questions concerning compliance with the obligations assumed and related situations which may be considered ambiguous," and so on. (Art. XIII of the ABM Treaty; Art. VI

---

(cont.) before the Senate Foreign Relations Committee: "It would not be surprising if those in the Kremlin defend the agreement on grounds almost identical to those used here, i.e. that it will not prevent their doing anything that would be done in its absence." (175)

of the Interim Agreement) As has become customary, the right of each Party to withdraw from either accord "if it decides that extraordinary events...have jeopardized its supreme interests" was recognized, subject to six months' notice (Art.XV of the ABM Treaty; Art.VIII of the Interim Agreement).

### Effect Upon Relative Capabilities and Security Interests

Finally, we come to the factor which, in the heat of the negotiations themselves, may well have played the most influential role of all: the perceived effect of the control system upon the relative capabilities and security interests of the Parties; or the attempted attenuation of unilateral advantage. Among a "Catalogue of Objectives and Principles" on strategic arms limitation drawn up by the U.S. and approved by the Soviet Union in January 1969 was the maxim that "The limitation and reduction in strategic armaments should be so balanced that neither side could obtain any military advantage and that security should be assured equally for both sides."<sup>176</sup> Viewed in this light, and because of the essential asymmetries in force-structure and strategies of the two sides, the negotiating process becomes one of continual trade-offs or "balancing" among restrictions, designed so as to avoid benefitting one side disproportionately more than the other.

Some analysts have drawn up tables purporting to show the relative advantages and disadvantages to each Party, together with the mutual advantages (it being assumed that there are no significant mutual disadvantages), of the SALT I agreements.

The proponents of the latter, naturally enough, tend to display a bias towards the mutual or middle part of the spectrum; their detractors, on the American side, emphasize the allegedly overwhelming advantages they accord to the Soviets. The first view is represented by Secretary of State Rogers, who told the Senate Foreign Relations Committee: "In matters involving the central security interests of two great powers, any arms limitation agreement must respond to each side's interest or it will not last very long. Both sides must gain from SALT or neither does."<sup>177</sup> The second view is perhaps best exemplified by one Phyllis Schlafly, representing the "National Association of Pro America," who maintained before the Committee that "This SAL pact is the most dangerous, disadvantageous and devious document the United States has ever signed. No more unequal, craven and degrading agreement has ever been signed by any nation, except by a nation which was defeated in war or about to be defeated in war."<sup>178</sup>

We have already examined and rejected the contention, in our discussion of the "parity" concept, that the marginal superiority in numbers of missiles granted the Soviets constitutes a significant advantage for them. It might be noted in this regard that, with respect to submarines and SLBM's in particular, the Soviet numerical lead was explicitly intended to offset the geographical advantages of the U.S. which otherwise would have allowed the latter to maintain a greater number of boats on station at any one time regardless of parity in overall

numbers. As Dr. Kissinger told U.S. Congressmen on June 15, 1972, "because of the difference in geography and basing, it has been estimated that the Soviet Union requires three submarines for two of ours to be able to keep an equal number on station."<sup>179</sup>

But the principal "trade-off" of SALT I was between defensive strategic weapons (ABM's), the prohibition of which was apparently of greater concern to the Soviets than to the Americans; and offensive strategic missiles, where the situation was reversed. Throughout the negotiations the American side made it clear that it would be willing to restrict the former only if the Soviets agreed to some kind of limitations as well upon their respective offensive arsenals, and particularly upon "heavy" (ICBM-killing) missiles. The end result was the simultaneous signing of two agreements, with more comprehensive restrictions upon offensive missiles to follow. The injunction to extend the scope of the Interim Agreement, implied in its very name, was embodied throughout the accords, from the preambles of both the ABM Treaty and Interim Agreement, which averred that "the limitation of anti-ballistic missile systems, as well as certain agreed measures with respect to the limitation of strategic offensive arms, would contribute to the creation of more favorable conditions for further negotiations on limiting strategic arms;" through Article XI of the ABM Treaty, by which "The Parties undertake to continue active negotiations for limitations on strategic offensive arms;" to Article VII of the Interim Agreement, which added that "The obligations provided for in this...Agreement shall not prejudice the scope or terms of the

limitations on strategic offensive arms which may be worked out in the course of further negotiations," and Article VIII of the same Agreement which flatly declared: "It is the objective of the Parties to conduct active follow-on negotiations with the aim of concluding [more complete measures limiting strategic offensive arms]...as soon as possible." It was perhaps most dramatically evidenced, however, by a unilateral statement of U.S. Ambassador Gerard C. Smith, appended to the Agreements, that "The U.S. Delegation believes that an objective of the follow-on negotiations should be to constrain and reduce on a long-term basis threats to the survivability of our respective strategic retaliatory forces....If an agreement providing for more complete strategic offensive arms limitations were not achieved within five years, U.S. supreme interests could be jeopardized. Should that occur, it would constitute a basis for withdrawal from the ABM Treaty." (Unilateral Statement "A" of the United States Delegation)

It was largely attention to the possibility of trade-offs which lay behind the demand in the U.S., first, for ABM's and MIRV's, and then, following the close of SALT I, for the accelerated development of a number of new strategic systems (such as ULMS/Trident, and the B-1 bomber) as "bargaining-chips" in the negotiations. Many in the U.S. Administration claimed that had Washington not proceeded with its "Safeguard" ABM program, it would not have been able to garner whatever Soviet concessions it did--although such allegations cannot be proven, of course.\*

---

\* See, for example, the exchange between Secretary Laird (cont.)

More importantly, however, that such reasoning can in the final analysis prove counterproductive (if not fatal) to arms control is patently obvious, if one accepts the general action-reaction theory of arms races.\* As Marshall Shulman put it before the U.S. Senate Foreign Relations Committee:

The difficulty with the bargaining chip tactic is that it deflects attention from the merits of the argument as to whether we genuinely need the weapons systems advocated, and instead of intimidating the Russians, requires them to follow our lead. Had we not begun to deploy a Safeguard system, there would have been no need for the present treaty, and the number of ABM launchers would have been considerably less than the two hundred for each side provided under the treaty. Had the Russians nevertheless persisted in modernizing their Galosh system around Moscow, we could have decided what if any action on our part this required; it is unlikely that we would have been saddled with the kind of a system which the bargaining chip logic has bequeathed us. Similarly, our MIRV deployment, rather than encouraging a positive attitude toward arms limitation on the Russian side, compels them to match our MIRV technology sooner or later. And when they do, we will both be worse off than if we had been able to avert the MIRV competition.

...Bargaining chips is a game that two can play, and two can lose. (180)

In a similar vein, Stanley Hoffmann told the Committee:

An agreement on ABM was reached, less because we met Russia's challenge and launched our own program, than because both sides recognized that the costs were

---

(cont.) and Senator Fulbright in the Foreign Relations Committee hearings, pp. 109-110; also the judgment of Marvin L. Goldberger that "It is difficult, if not impossible, to assess the role played by Safeguard as a bargaining chip in the SALT treaty." (181)

\* Which might be summed up as follows: Although not all arms races result from perceived challenges to security, and no arms race need be explained solely or even primarily as an action-reaction cycle of competitive deployments, other factors--such as the inherent dynamism of military technology, bureaucratic and domestic political interests in (cont.)

out of proportion with the value of these systems.

The Interim Agreement on offensive weapons was reached even though we had no on-going ICBM program, and the Soviets, who resisted for a long time the inclusion of nuclear submarines and SLBM into the agreement, gave in even though we have not launched Trident yet. To be sure, incentives to agreements are necessary, but the threat of launching a major program if no agreement is reached, coming from a nation that is in so many respects still ahead in sophisticated technology and qualitative performance, can be just as powerful, and far more effective, in getting results at a lower level of absurdity than actual escalation. Otherwise, we shall never break out of the vicious circle which consists of launching a dubious program in order later to be able to claim as a political breakthrough and as a victory of common sense an agreement that merely restricts the further waste of resources on such a program.

The President has correctly pointed out that the new offensive weapon programs were recommended prior to SALT. This throws a rather intriguing light on SALT. We have obtained from the Russians curbs in areas, including the SS-9, where they, not we, have ongoing programs and where had they refused limitations, we could not have caught up with them during the next five years. But we have avoided curbs in the areas where we wanted to expand anyhow, so as to stay ahead of them. This is quite a competitive achievement, but it suggests not so much the triumph of the bargaining-chip theory--after all, our biggest chip is the MIRV, which remains unregulated--as the certainty that the Soviets will indeed feel that they have to catch up with us in all the areas, including MIRV, that are left open in the race. (182)

Finally, Senator Edward Kennedy warned: "We have consistently failed to recognize that a bargaining chip is good so long as

---

(cont.) arms expansion, and what has been called "a general presumption of intense competition from the other side rather than ...the adversary's specific actions (or inaction)" (183)--may (in the contemporary world, at least) be viewed as constants, perpetually subject to aggravation (and significantly so) through the action-reaction phenomenon. That is, political pressures on one side brought about as a result of these other factors will tend to be validated and considerably reinforced with reference to perceived deployments on the other side.



it is not played. Once played, its only effect is to raise the stakes, and that has been the effect of our use of nuclear bargaining chips, each time the stakes have been raised and each time the security of all nations has been endangered."<sup>184</sup>

There would seem to be some kind of "happy medium" between leaving oneself completely naked in negotiations and provoking a new arms race, of achieving a bargaining advantage which is not so overpowering as to stimulate competitive deployments on the other side.\* Whether such a point can be reached in SALT II remains to be seen.

---

\* Dr. Kissinger demonstrated an acute understanding of this dilemma at his Congressional briefing of June 15, 1972. (185) The standard solution is to halt on-going programs at the research and development stage, avoiding the actual deployment of systems as long as possible, but this tends to be defeated by the autonomous momentum of such activities, as well as by legitimate concern over the lead-times involved. A variation on the theme is the suggestion of Jerome H. Kahan that "placing construction funds 'in escrow'...can be equally effective in supporting a strong negotiating posture without detracting from the ultimate value of the agreements being sought." (186)

### CONCLUSION

The preceding analysis makes no pretensions to being either the definitive account of the motivations behind SALT I and its agreements, or a sure guide to future SALT limitations. It remains, quite simply, an examination of possible factors affecting the susceptibility of strategic arms, and of ABM's and offensive missiles in particular, to international regulation. We can say, for example, that the concern for strategic stability, the costs of new weapons, the desire for a broadly-based détente--perhaps even considerations of personal prestige, political survival, or historic destiny on the part of the national leaders concerned--all played a part in producing the final outcome. But how can one possibly rank in importance such disparate factors, and thus draw conclusions applicable to the field of arms control as a whole?

Nevertheless, a few tentative observations might be advanced with a view toward exploiting to its fullest the potential of the case-study approach to illuminate theoretical concerns. The Strategic Arms Limitation Talks of 1969-72 were chosen for analysis because of their contemporaneity, their innate significance in comparison with previous measures of arms control, the large body of critical literature which they have generated, and the availability of detailed analysis of the individual military systems with which they dealt. Still, the possibility that they may have been an atypical example of arms control should be taken into account.

In the first place, unlike most previous (and indeed, conceivable) "disarmament" negotiations, they were essentially

bilateral. Not only did just two states choose to involve themselves in the negotiations but--because of the great disparity in power between them and the rest of the world--neither the direct participation of outside actors was required nor could the latter's independent actions be very influential. The consequences of this factor for the success of negotiations are somewhat ambiguous. On the one hand, as we have previously noted, the feasibility of controls should vary inversely with the absolute number of relevant actors; on the other hand, the lack of very strong conciliatory pressures from without, together with the unavailability of effective outside guarantees, makes the task of achieving agreement more difficult than under other circumstances (where an international body such as the U.N., or a consortium of Great Powers, can fulfil both roles).

Second, SALT I involved the collaboration of what many observers consider to be two essentially "satiated," "conservative," or "mature" Powers, neither one desirous of immediate fundamental change in the international status quo, and both conscious--to a degree--of the threat posed humanity's future by the awesome arsenals at their disposal. It simply may be too much to expect similar restraint from less "responsible" states, between staunchly "conservative" and rabidly "revisionist" ones, or on anything approaching a universal scale within a resource-scarce world.

Finally, SALT I dealt with weapons whose military and political/diplomatic utility had come under some attack in recent years. It is less certain that states would be amenable to

restricting more "practical" or "serviceable" armaments and military activities.

Of course, significant as it was, SALT I represented but a small step on the road to effective limitation of strategic arms, let alone reduction or total abolition of them. Some critics of the negotiations have gone so far as to suggest that, by virtue of the persuasiveness of the bargaining-chip argument, they may have proven positively counterproductive to such efforts.<sup>187\*</sup> But what is the alternative? It must be hoped that, in the long run at least, a continuous process of strategic arms control will begin to bear fruit in terms of both mutual and unilateral restraint.<sup>188</sup>

The foregoing reservations aside, what does the SALT case suggest about the "factors affecting the susceptibility of military instruments and activities to international regulation"? Briefly stated: (1) The earlier tendency of "arms controllers" to focus upon strategic stability as a prime criterion is confirmed and apparently reinforced; (2) the cost of major weapons systems seems to be becoming an increasingly salient factor in the "arms control calculus;" (3) verification of the fulfilment of obligations does not appear to be as great an obstacle to agreements as in the recent past; (4) crude "parity" in the overall strategic strength of adversaries is seen as crucial to their willingness to entertain limitations; (5) asymmetries in the force-

---

\* There is much evidence for this on the American side, but the Soviets may not have "bought" the bargaining-chip argument to the same extent. Wolfgang Panofsky, writing in the Spring, 1973, issue of Survey, notes: "There is no evidence that (cont.)"

structure and strategy of adversaries seem eminently susceptible to trade-offs within the armaments field, as well as (possibly) from outside of it; (6) overall disparities in the cost-effectiveness of defense and offense, favouring the latter, seem crucial to the willingness of states to limit "defensive" weapons; (7) the rapidity of technological development, while remaining largely an "unknown" factor, may nevertheless serve to enhance the prospects for arms control by inducing a state of weariness and sense of futility in publics and their governments over the apparently perpetual process of replacing increasingly costly weapons systems at a faster and faster rate; (8) SALT provides a reaffirmation of the principle that two states, though deeply riven by political antagonism and continuing to compete vigorously in many areas, can nevertheless perceive sufficient mutual interest in attaining significant measures of arms control, and finally (9) in conformity with traditional expectations, quantitative ceilings on weapons are more likely to be agreed upon than either quantitative reductions in existing arsenals or restrictions on qualitative developments--though the qualitative wall may well have been partially breached with the ABM Treaty.

We have absolutely forsworn any intentions of comparing the relative saliency of the full range of factors discussed in Part I and, as a result, it is impossible to make any very certain

---

(cont.) the Soviets have either reduced or expanded their offensive programmes as a result of SALT-I." (189)

predictions as to future measures of strategic arms control. The possible SALT II agenda is nevertheless a full one, and it might be useful to apply the framework elucidated in this paper in order to identify the areas of likely or possible agreement, and to assess the prospects of individual measures--such as controls on strategic ASW activities and anti-aircraft defenses, heavy bombers, forward-based systems, and land-mobile ICBM's--being successfully negotiated. Similarly, the factors identified in Part I might be retrospectively applied to earlier attempts at arms control of various kinds, with the ultimate intention of developing more rigorous (perhaps even quantitatively-based) theory.

The task is rendered extremely hazardous by operation of one of the last-mentioned factors--the possibility of an almost infinite variety of cross-cutting trade-offs, even from areas outside of the arms control field. Nevertheless, if this essay has demonstrated the value of such a framework in explaining how given agreements are reached and how their essential parameters are fixed, in greater depth than a less structured approach might have afforded, then it will have served its purpose. At this stage in the development of arms control theory, anything more ambitious would clearly be premature.

FOOTNOTES

- 1 Chayes(1972),pp.919-920.
- 2 Gray(1973),pp.273-274.
- 3 Beaufre(1968),p.28.
- 4 Boggs(1941),p.60.
- 5 Ibid.,p.71.
- 6 Ibid.,pp.84-85.
- 7 Q.Wright(1965),p.806.
- 8 Morgenthau(1973),p.401.
- 9 Boggs(1941),p.46.
- 10 Ibid.,p.81.
- 11 Ibid.,pp.82-83.
- 12 Ibid.,p.83.
- 13 See,for example,Strachey(1967),p.206.
- 14 Henkin(1961),pp.6-7.
- 15 Halle(1973),p.22.
- 16 E.g.Perle(1973),p.122.
- 17 Stockholm International Peace Research Institute(1973),  
p.132.(hereafter "SIPRI")
- 18 Brennan(1961),p.30.
- 19 SIPRI(1973),pp.132-133.
- 20 Ibid.,p.140.
- 21 Ibid.
- 22 Ibid.,p.137.
- 23 Bull(1961),pp.12-13.
- 24 Q.Wright(1965),p.798.
- 25 Ibid.
- 26 Morgenthau(1973),pp.390-391.
- 27 Bull(1961),pp.18-19.
- 28 Chayes(1972),p.942.
- 29 Coffey(1971),p.134.
- 30 Barnet(1960),p.124; King(1961),p.94.
- 31 Bull(1961),p.108; Bull(1970),p.149; Aron(1967),pp.653-654.
- 32 Morgenthau(1973),p.398.
- 33 Young(1972),p.134.
- 34 Newhouse(1973),pp.77-101.
- 35 Aron(1967),pp.645-646.
- 36 Clemens(1973),p.11.
- 37 Bull(1961),pp.124-125.
- 38 Cf.Morgenthau(1973),p.404.
- 39 Barnett(1972),pp.263-267; Coffey(1971),p.163.
- 40 Clemens(1973),p.59.
- 41 Panofsky(1973a),p.160.
- 42 Barnet(1960),p.48.
- 43 E.g.Ibid.,pp.47-48; Holsti(1967),p.382.
- 44 Morgenthau(1973),p.395.
- 45 Ibid.
- 46 Gray(1974a),p.228.
- 47 Abt(1963),p.398.
- 48 Kaplan(1969),pp.295-296.
- 49 Ibid.,p.295.

- 50 Ibid.,p.296.
- 51 Ibid.,pp.296-298.
- 52 Bull(1961),pp.9-10; Griffiths(1971),p.672.
- 53 Bull(1961),p.65.
- 54 Morgenthau(1973),p.396; see also Ansberry(1969),p.46.
- 55 See the discussion in Clemens(1973),pp.71-72.
- 56 Bull(1961),p.118.
- 57 Clemens(1973),pp.12-13.
- 58 Bull(1961),p.7.
- 59 Halperin and Perkins(1965),p.161.
- 60 Clemens(1973),p.69.
- 61 Brennan(1961),p.29.
- 62 Ibid.,p.30.
- 63 Kaplan(1973),p.8.
- 64 Jabber, Not By War Alone(ND;NP).
- 65 Luard(1968),p.195.
- 66 Chayes(1972),pp.943-944.
- 67 Ibid.,p.969.
- 68 Boggs(1941),p.14,fn.26.
- 69 Wiesner(1961),p.208.
- 70 See also Henkin(1964),pp.29-30.
- 71 Chayes(1972),p.920.
- 72 R.Fisher(1961),pp.59-60.
- 73 Ibid.,p.57.
- 74 Chayes(1972),p.957.
- 75 Barnet(1960),p.24.
- 76 Bowie(1961a),p.67.
- 77 Ibid.,p.70.
- 78 Schelling(1961),p.174.
- 79 Schelling and Halperin(1961),p.85.
- 80 U.S.Senate Foreign Relations Committee(1972),pp.395, 400.  
(hereafter "SFRC")
- 81 Wolfe(1973),p.24.
- 82 Ibid.,p.28.
- 83 SFRC(1972),passim.
- 84 Coffey(1973),pp.66-67.
- 85 See Secretary Rogers before SFRC(1972),p.17.
- 86 See Secretary Laird before SFRC(1972),pp.92-94.
- 87 Newhouse(1973),p.63.
- 88 Ibid.
- 89 Kahan(1972),p.209.
- 90 Nixon(1973),p.711.
- 91 U.S.Senate Armed Services Committee(1972),p.542.
- 92 Clemens(1973),p.159,fn.9.
- 93 Kintner(1967), for example.
- 94 Gray(1972-73),p.129; see also Clemens(1973),pp.xxii,1.
- 95 SFRC(1972),pp.157-158.
- 96 Soviet Foreign Policy,1968,quoted in Clemens(1973),pp.3-4.
- 97 Ibid.,pp.4-5.
- 98 Ibid.,p.8.
- 99 "Missile Numbers Game",New York Times article reprinted in SFRC(1972),pp.46-47.
- 100 Ibid.,pp.72-73.



- 101 Strategic Survey 1972, p.17.
- 102 SFRC(1972), p.88.
- 103 SIPRI(1974), p.22.
- 104 SFRC(1972), p.140.
- 105 Ibid., p.143.
- 106 SIPRI(1974), pp.25-26.
- 107 Ibid., p.28.
- 108 E.g. Roman Kolkowicz, in SFRC(1972), p.143; Joshua(1973), pp. 239-240; SIPRI(1973), p.45; Caldwell(1971), pp.13,20; Wolfe (1970), p.5.
- 109 SFRC(1969), p.303.
- 110 Clemens(1973), pp.xxiv.
- 111 Young(1972), p.223.
- 112 Newhouse(1973), p.104.
- 113 U.S.Senate Government Operations Committee(1973), p.201.
- 114 E.g. Van Cleave(1973), pp.326-327.
- 115 Gray(1974), p.1146.
- 116 SFRC(1972), p.182.
- 117 Kintner and Pfaltzgraff(1973), pp.296-297, for example.
- 118 Newhouse(1973), p.10.
- 119 See especially Caldwell(1971), Holloway(1971), and Kahan(1972), pp.417-418.
- 120 Coffey(1971), pp.160-161.
- 121 SFRC(1972), p.18.
- 122 SFRC(1972), p.358.
- 123 Ibid., p.185; see also p.181.
- 124 Newhouse(1973), pp.9-10.
- 125 SFRC(1972), p.6.
- 126 E.g. see Newhouse(1973), pp.79-80.
- 127 See Kahan(1972), p.418.
- 128 SFRC(1969), p.46.
- 129 Alton H. Quanbeck and Barry M. Blechman, "The Arms Accord: Everyone Gains", in the Washington Post, June 4, 1972; reprinted in SFRC(1972), p.31.
- 130 Quoted in The Defense Monitor, June 30, 1972; reprinted in SFRC(1972), p.278.
- 131 See Rogers, SFRC(1972), p.5.
- 132 Newhouse(1973), p.150.
- 133 SFRC(1970), pp.231-232.
- 134 See, for example, the questions submitted by Senator Charles H. Percy to Ambassador Gerard C. Smith, SFRC(1972), pp.54-55; and the testimony of Senator James L. Buckley, SFRC(1972), pp. 258-259.
- 135 SFRC(1972), p.404.
- 136 Senator Sparkman, in: SFRC(1972), p.339.
- 137 SFRC(1972), p.57.
- 138 E.g. Kahan(1972), p.422, fn.22.
- 139 Clemens(1973), p.24.
- 140 Panifsky(1973a), p.165; and SFRC(1972), p.373.
- 141 Ibid., p.178.
- 142 Ibid., p.254.
- 143 Ibid., p.272.
- 144 Newhouse(1973), p.164; see also p.184.

- 145 See Panofsky(1973a),p.163; and Newhouse(1973),pp.3-4.
- 146 Wolfe(1970),p.2.
- 147 Paul Warnke in SFRC(1972),p.179.
- 148 See statements of Wolfgang Panofsky and Richard L.Garwin,  
Ibid.,p.371.
- 149 Newhouse(1973),p.21.
- 150 See Kahan in SFRC(1972),p.424.
- 151 Newhouse(1973),p.30.
- 152 Ibid.,pp.26,124.
- 153 Ibid.,p.20.
- 154 Scoville in SFRC(1970),pp.228-229; Scoville(1974),p.55;  
Garwin(1973),p.111.
- 155 Scoville in SFRC(1970),p.223; Dr.Kissinger in SFRC(1972),p.  
412.
- 156 Newhouse(1973),pp.28,76.
- 157 Ibid.,p.28.
- 158 Ibid.,p.31.
- 159 Ibid.,p.183.
- 160 See testimony of Ambassador Gerard C.Smith,SFRC(1972),p.38.
- 161 Newhouse(1973),p.26.
- 162 Ibid.,p.184; and Kahan(1972),p.426.
- 163 Newhouse(1973),p.259.
- 164 Ibid.,p.59.
- 165 See,for example,SFRC(1972),pp.55,145,148,276.
- 166 See,for example,Senator Symington,Ibid.,p.16; and Kahan(1972),  
p.428.
- 167 The Defense Monitor,June 30,1972; reprinted in SFRC(1972),  
p.277.
- 168 E.g.William R.Van Cleave,in U.S.Senate Government Operations  
Committee(1973),pp.219-220 and 234.
- 169 The Defense Monitor,op.cit.,p.274.
- 170 SFRC(1972),p.384.
- 171 Ibid.,p.347.
- 172 Nixon(1974),p.711.
- 173 Clemens(1973),p.25.
- 174 Newhouse(1973),p.174.
- 175 SFRC(1972),p.302.
- 176 Quoted in Newhouse(1973),p.139.
- 177 SFRC(1972),p.10.
- 178 Ibid.,p.324.
- 179 Ibid.,p.401.
- 180 Ibid.,p.140.
- 181 Ibid.,p.348.
- 182 Ibid.,p.194.
- 183 Clemens(1973),p.102.
- 184 SFRC(1972),p.252.
- 185 Ibid.,p.411.
- 186 Ibid.,p.217.
- 187 Gray(1974b),p.1147 and (1973),pp.271,289; SIPRI(1973),pp.  
49-50.
- 188 Cf.Griffiths(1971),pp.644-645.
- 189 Panofsky(1973a),p.165.

BIBLIOGRAPHY

I. Arms Control Theory

Abt, Clark C., "Disarmament as a Strategy", in: Journal of Arms Control, vol.1 no.4, pp. 387-402.

Ansberry, William F., Arms Control and Disarmament: Success or Failure? Berkeley: McCutchan Publishing Corporation, 1969.

Aron, Raymond, Peace and War: A Theory of International Relations. New York and Washington: Frederick A. Praeger, 1967.

Barnet, Richard J., "Inspection: Shadow and Substance", in: Barnet and Falk (eds.), Security in Disarmament. Princeton: Princeton University Press, 1965, pp. 15-36.

----- Who Wants Disarmament? Boston: Beacon Press, 1960.

Barnet, Richard J., and Richard A. Falk (eds.), Security in Disarmament. Princeton: Princeton University Press, 1965.

Barnett, A. Doak, "A Nuclear China and U.S. Arms Policy", in: King C. Chen (ed.), The Foreign Policy of China. Roseland, N.J.: East-West Who? Inc., 1972, pp. 257-276.

Beaufre, André, "Some Reflections on the Problem of Arms Control", in: Arms Control and Disarmament, vol.1 (1968), pp. 27-41.

Blackett, P.M.S., "Steps Toward Disarmament", in: Mendlovitz (ed.), Legal and Political Problems of World Order. New York: The Fund for Education Concerning World Peace Through World Law, 1962, pp. 559-575.

Bloomfield, Lincoln P., The United Nations and U.S. Foreign Policy. Boston: Little, Brown and Co., 1967.

Boggs, Marion W., Attempts To Define and Limit 'Aggressive' Armament in Diplomacy and Strategy. The University of Missouri Studies, vol. 16, no.1. Columbia: University of Missouri, 1941.

Bothwell, Frank E., "Arms Control--The Initiative Is Ours", in: David H. Frisch (ed.), Arms Reduction: Program and Issues. New York: The Twentieth Century Fund, 1961, pp. 13-18.

Boulding, Kenneth E., "The University, Society, and Arms Control", in: Journal of Arms Control, vol.1 no.4 (1963), pp. 552-557.

- Bowie, Robert R., "Arms control and United States foreign policy", in: Henkin (ed.), Arms Control: Issues for the Public. Englewood Cliffs: Prentice-Hall, 1961, pp. 49-75.
- . "Basic Requirements of Arms Control", in: Brennan (ed.), Arms Control, Disarmament, and National Security. New York: George Braziller, 1961, pp. 43-55.
- Brennan, Donald G. (ed.), Arms Control, Disarmament, and National Security. New York: George Braziller, 1961.
- . "Setting and Goals of Arms Control", in: Ibid., pp. 19-42.
- Bull, Hedley, "Arms Control: A Stocktaking and Prospectus", in: Institute for Strategic Studies, Problems of Modern Strategy. New York and Washington: Praeger Publishers, 1970, pp. 139-158.
- . The Control of the Arms Race: Disarmament and Arms Control in the Missile Age. London: Weidenfeld and Nicolson, 1961.
- . "The Scope for Super-Power Agreements", in: Arms Control and National Security, vol.1 (1969), pp. 1-23.
- Carr, Edward Hallett, International Relations Between the Two World Wars (1919-1939). London: Macmillan and Co., 1965.
- . The Twenty Years' Crisis, 1919-1939: An Introduction to the Study of International Relations. New York: Harper Torchbooks, 1964.
- Carter, Barry, "What Next in Arms Control?", in: Orbis, vol.17 no.1 (Spring 1973), pp. 176-196.
- Chayes, Abram, "An Inquiry into the Workings of Arms Control Agreements", in: Harvard Law Review, vol.85 no.5 (March 1972), pp. 905-969.
- Claude, Inis L., Jr., Swords Into Plowshares: The Problems and Progress of International Organization. (3rd ed., rev.) New York: Random House, 1964.
- Coffey, J.I., Strategic Power and National Security. University of Pittsburgh Press, 1971.
- Coser, Lewis, "Peaceful Settlements and the Dysfunctions of Secrecy", in: Journal of Arms Control, vol.1 no.4 (1963), pp. 340-347.
- Craven, John P., "The Design of Weapons Systems for an Arms Control Environment", in: Journal of Arms Control, vol.1 no.1 (1963), pp. 14-17.

- Dean, Arthur H., Test Ban and Disarmament: The Path of Negotiation. New York and London: Harper and Row, 1966.
- Dougherty, James E., Arms Control and Disarmament: The Critical Issues. Washington: The Center For Strategic Studies, Georgetown University, 1966.
- ". "Introduction", in: Dougherty and Lehman (eds.), Arms Control For the Late Sixties. Princeton: D. Van Nostrand Company, Inc., 1967, pp. xxi-xlvi.
- Edwards, David V., Arms Control in International Politics. New York: Holt, Rinehart and Winston, 1969.
- Etzioni, Amitai, The Hard Way to Peace: A New Strategy. New York: Collier Books, 1962.
- Falk, Richard A., "Inspection, Trust, and Security during Disarmament", in: Barnett and Falk (eds.), op.cit., pp. 37-49.
- Feld, Bernard T., "Inspection Techniques of Arms Control", in: Brennan (ed.), op.cit., pp. 317-332.
- ". "The Summer Study on Arms Control", in: Frisch (ed.), op.cit., pp. 3-12.
- Fisher, Adrian S., "Outlawry of War and Disarmament", in: Recueil des cours, II (1971), pp. 389-412.
- Fisher, Roger, "Constructing Rules That Affect Governments", in: Brennan (ed.), op.cit., pp. 56-67.
- Frank, Jerome D., Sanity and Survival: Psychological Aspects of War and Peace. New York: Vintage Books, 1967.
- Gray, Colin S., "The Urge to Compete: Rationales for Arms Racing", in: World Politics, vol.26 no.2 (January 1974), pp. 207-233.
- Griffiths, Franklyn, "Transnational Politics and Arms Control", in: International Journal, vol.26 no.4 (Autumn 1971), pp. 640-674.
- Halle, Louis J., "Does War Have A Future?", in: Foreign Affairs, vol.52 no.1 (October 1973), pp. 20-34.
- Halperin, Morton H., Contemporary Military Strategy. Boston: Little, Brown and Company, 1967.
- Halperin, Morton H., and Dwight H. Perkins, Communist China and Arms Control. New York: Frederick A. Praeger, 1965.

- Henkin, Louis (ed.), Arms Control: Issues for the Public. Englewood Cliffs: Prentice-Hall, 1961.
- ". "The Citizen's Interest in the Control of Armaments", in: Henkin (ed.), op.cit., pp. 1-17.
- ". "Disarmament--The Lawyer's Interests", in: Lyman M. Tondel, Jr. (ed.), Disarmament: Background Papers and Proceedings of the Fourth Hammarskjöld Forum. Dobbs Ferry, N.Y.: Oceana Publications, 1964, pp. 1-42.
- Holsti, K.J., International Politics: A Framework for Analysis. Englewood Cliffs: Prentice-Hall, 1967.
- Jabber, Fuad, Not By War Alone: Curbing the Arab-Israeli Arms Race. Chicago: Adlai Stevenson Institute Working Paper 15.
- Kaplan, Morton A., "Variants on Six Models of the International System", in: James N. Rosenau (ed.), International Politics and Foreign Policy: A Reader in Research and Theory. New York: The Free Press, 1969, pp. 291-303.
- King, James E., Jr., "Arms Control and United States Security", in: Henkin (ed.), op.cit., pp. 76-111.
- Kintner, William R., "Arms Control and National Security: A Caveat", in: Dougherty and Lehman (eds.), op.cit., pp. 31-42.
- Kissinger, Henry A., The Necessity for Choice: Prospects of American Foreign Policy. Garden City: Anchor Books, 1962.
- ". Nuclear Weapons and Foreign Policy. Garden City: Doubleday Anchor Books, 1958.
- Kissinger, Henry A. (ed.), Problems of National Strategy: A Book of Readings. New York: Frederick A. Praeger, 1965.
- Knorr, Klaus, "Supranational Versus International Models for GCD", in: Barnett and Falk (eds.), op.cit., pp. 384-410.
- Kybal, Dalimil, "The Role of Stabilized Deterrence", in: Frisch, (ed.), op.cit., pp. 135-153.
- Lefever, Ernest W., "The New Arms-Control Consensus", in: Lefever (ed.), Arms and Arms Control. New York: Frederick A. Praeger, 1962, pp. ix-xvii.
- Lehman, J.F., Jr., "Introductory Remarks", in: Dougherty and Lehman (eds.), op.cit., pp. ix-xii.
- Luard, Evan, Conflict and Peace in the Modern International System. Boston: Little, Brown and Company, 1968.

- Luard, Evan, Peace and Opinion. London: Oxford University Press, 1962.
- May, Michael M., Strategic Arms Technology and Doctrine under Arms Limitation Agreements. Center of International Studies, Woodrow Wilson School of Public and International Affairs, Princeton University. Research Monograph No.37, October 1972.
- Melman, Seymour, The Peace Race. New York: Ballantine Books, 1961.
- Mendlovitz, Saul H. (ed.), Legal and Political Problems of World Order. New York: The Fund For Education Concerning World Peace Through World Law, 1962.
- Morgenstern, Oskar, The Question of National Defense. New York: Vintage Books, 1961.
- Morgenthau, Hans J., Politics Among Nations: The Struggle for Power and Peace (5th ed.). New York: Alfred A. Knopf, 1973.
- Organski, A.F.K., World Politics (2nd ed.). New York: Alfred A. Knopf, 1968.
- Phelps, John B., "On the Role of Stabilized Deterrence", in: Frisch (ed.), op.cit., pp. 83-90.
- Pugh, George E., "Restraints, Strategy, and Arms Control", in: Orbis, vol.7 no.2 (Summer 1963), pp. 209-225.
- Ranger, Robert, "Arms Control Within a Changing Political Context", in: International Journal, vol.26 no.4 (Autumn 1971), pp. 735-752.
- Schelling, Thomas C., "Communication, Bargaining and Negotiation", in: Arms Control and National Security, vol.1 (1969), pp. 63-72.
- . "Managing the Arms Race", in: Kissinger (ed.), op.cit., pp. 361-375.
- . "Reciprocal Measures for Arms Stabilization", in: Brennan (ed.), op.cit., pp. 167-186.
- . The Strategy of Conflict. New York: Oxford University Press, 1963.
- Schelling, Thomas C., and Morton H. Halperin, Strategy and Arms Control. New York: The Twentieth Century Fund, 1961.
- Singer, J. David, Deterrence, Arms Control, and Disarmament: Toward a Synthesis in National Security Policy. Ohio State University Press, 1962.

Spingarn, Jerome H., New Approaches to Disarmament. Foreign Policy Association--World Affairs Center Headline Series, no. 151, January-February 1962.

Stein, Eric, "Impact of New Weapons Technology on International Law: Selected Aspects", in: Recueil des cours, II (1971), pp. 223-388.

Stockholm International Peace Research Institute, "The Prohibition of Inhumane and Indiscriminate Weapons", in: World Armaments and Disarmament: SIPRI Yearbook 1973. Stockholm: Almqvist and Wiksell, 1973, pp. 132-152.

Stone, Jeremy J., "Arms Control: Where Is It?", in: Arms Control and Disarmament, vol.1 (1968), pp. 111-117.

Strachey, John, On the Prevention of War. London: Macmillan, 1967.

Szilard, Leo, "'Minimal Deterrent' vs. Saturation Parity", in: Kissinger (ed.), op.cit., pp. 376-391.

Teller, Edward, "The Feasibility of Arms Control and the Principle of Openness", in: Brennan (ed.), op.cit., pp. 122-137.

Washington Center of Foreign Policy Research, "Arms Control and Other Approaches to Stability", in: Lefever (ed.), op.cit., pp. 1-12.

Wells, Donald A., The War Myth. New York: Pegasus, 1967.

Wiesner, Jerome B., "Foreword" and "Comprehensive Arms-Limitation Systems", in: Brennan (ed.), op.cit., pp. 13-16; 198-233.

Wright, Sir Michael, Disarm and Verify: An Explanation of the Central Difficulties and of National Policies. New York: Frederick A. Praeger, 1964.

Wright, Quincy, "Conditions for Successful Disarmament", in: Journal of Arms Control, vol.1 (1963), pp. 380-386.

----- A Study of War (2nd ed.). Chicago and London: The University of Chicago Press, 1965.

Young, Elizabeth, A Farewell to Arms Control? Harmondsworth: Penguin Books, 1972.

## II. S.A.L.T.

Bowie, Robert R., "The Bargaining Aspects of Arms Control: The SALT Experience", in: Kintner and Pfaltzgraff (eds.), SALT: Implications for Arms Control in the 1970's. University of Pittsburgh Press, 1973, pp. 127-140.



- Caldwell, Lawrence T., Soviet Attitudes to SALT. Adelphi Papers, Number Seventy-Five. London: Institute for Strategic Studies, 1971.
- Clemens, Walter C., Jr., The Superpowers and Arms Control: From Cold War to Interdependence. Lexington, Mass.: Lexington Books, 1973.
- Coffey, J.I., "American Interests in the Limitation of Strategic Armaments", in: Kintner and Pfaltzgraff (eds.), op.cit., pp. 55-94.
- Dougherty, James E., "SALT and the Future of International Politics", in: Ibid., pp. 337-368.
- Garwin, Richard, "Superpower Postures in SALT: An American View", in: Morton A. Kaplan (ed.), SALT: Problems and Prospects. Morristown, N.J.: General Learning Press, 1973, pp. 1-25.
- Gray, Colin S., "The Arms Race Is About Politics", in: Foreign Policy, no.9 (Winter 1972-73), pp. 117-129.
- "Of Bargaining Chips and Building Blocks: Arms Control and Defence Policy", in: International Journal, vol.28 no.2 (Spring 1973), pp. 266-296.
- "Rethinking Nuclear Strategy", in: Orbis, vol.17 no.4 (Winter 1974), pp. 1145-1160.
- Halperin, Morton H., Defense Strategies for the Seventies. Boston: Little, Brown and Company, 1970.
- Holloway, David, "Strategic Concepts and Soviet Policy", in: Survival, vol.13 no.11 (November 1971), pp. 364-369.
- Holst, Johan J., "Comparative U.S. and Soviet Deployments, Doctrines, and Arms Limitation", in: Kaplan (ed.), op.cit., pp. 53-95.
- International Institute for Strategic Studies, Strategic Survey 1971. London: The I.I.S.S., 1972.
- Strategic Survey 1972. London: The I.I.S.S., 1973.
- Joshua, Wynfred, "SALT and the Middle East", in: Kintner and Pfaltzgraff (eds.), op.cit., pp. 237-254.
- Kahan, Jerome H., "Limited Agreements and Long-Term Stability: A Positive View Toward SALT", reprinted in: SFRC, pp. 416-429.

Kaplan, Morton A., "SALT and the International System", in: Kaplan (ed.), op.cit., pp. 1-25.

Kemp, Geoffrey, and Ian Smart, "SALT and European Nuclear Forces", in Kintner and Pfaltzgraff (eds.), op.cit., pp. 199-236.

Kintner, William R., "The Uncertain Strategic Balance in the 1970's", in: Arms Control and National Security, vol.1 (1969), pp. 25-40.

Kintner, William R., and Robert L. Pfaltzgraff, Jr., (eds.), SALT: Implications for Arms Control in the 1970's. University of Pittsburgh Press, 1973.

----- . "The Strategic Arms Limitation Agreements of 1972: Implications for International Security", in: Ibid., pp. 385-406.

Newhouse, John, Cold Dawn: The Story of SALT. New York: Holt, Rinehart and Winston, 1973.

Nixon, Richard M., Public Papers of the Presidents of the United States: Richard Nixon, Containing the Public Messages, Speeches, and Statements of the President, 1972. Washington: U.S. Government Printing Office, 1974.

Panofsky, Wolfgang, "From SALT I to SALT II", in: Survey, vol.19 no.2 (Spring 1973), pp. 160-174.

----- . "The Mutual-Hostage Relationship between America and Russia", in: Foreign Affairs, vol.52 no.1 (October 1973), pp. 109-118.

Perle, Richard, "Superpower Postures in SALT: The Language of Arms Control", in: Kaplan (ed.), op.cit., pp. 119-135.

Pfaltzgraff, Robert L., Jr., "The Rationale for Superpower Arms Control", in: Kintner and Pfaltzgraff (eds.), op.cit., pp. 3-20.

Scalapino, Robert A., "The American-Soviet-Chinese Triangle: Implications for Arms Control", in: Ibid., pp. 141-166.

Scoville, Herbert, Jr., "MIRV Control is Still Possible", in: Survival, vol.16 no.2 (March-April 1974), pp. 54-59.

----- . Toward a Strategic Arms Limitation Agreement. New York: Carnegie Endowment for International Peace, 1970.

Scoville, Herbert, Jr., et al., "Strategic Forum: the SALT Agreements", in: Survival, vol.14 no.5 (September-October 1972), pp. 210-219.

Shulman, Marshall D., "Comment", in: Survey, vol.19 no.2 (Spring 1973), pp. 160-174.

Staar, Richard F., "Comment", in: Ibid., pp. 183-187.

Stockholm International Peace Research Institute, Offensive Missiles. Stockholm Paper 5. Uppsala: Almqvist and Wiksell, 1974.

----- . "Strategic Arms Limitation", in: World Armaments and Disarmament: SIPRI Yearbook 1973. Stockholm: Almqvist and Wiksell, 1973, pp. 1-101.

United States House of Representatives, Committee on Foreign Affairs, Agreement on Limitation of Strategic Offensive Weapons (Hearings, 1972). Washington: U.S. Government Printing Office, 1972.

United States Senate, Committee on Armed Services, Military Implications of the Treaty on the Limitations of Anti-Ballistic Missile Systems and the Interim Agreement on Limitation of Strategic Offensive Arms (Hearings, 1972). Washington: U.S. Government Printing Office, 1972.

----- Committee on Foreign Relations, Nonproliferation Treaty, Part 2 (Hearings, 1969). Washington: U.S. Government Printing Office, 1969.

----- . Strategic Arms Limitation Agreements (Hearings, 1972). Washington: U.S. Government Printing Office, 1972.

----- Subcommittee on Arms Control, International Law and Organization, ABM, MIRV, SALT, and the Nuclear Arms Race (Hearings, 1970). Washington: U.S. Government Printing Office, 1970.

----- Subcommittee on International Organization and Disarmament Affairs, Strategic and Foreign Policy Implications of ABM Systems, Part I (Hearings, 1969). Washington: U.S. Government Printing Office, 1969.

----- Committee on Government Operations, Subcommittee on National Security and International Operations, International Negotiation, Part 7 (Hearing, 1972). Washington: U.S. Government Printing Office, 1973.

Van Cleave, William R., "Implications of Success or Failure of SALT", in: Kintner and Pfaltzgraff (eds.), op.cit., pp. 313-336.

----- . "The SALT Papers: A Torrent of Verbiage or a Spring of Capital Truths?", in: Orbis, vol.17 no.4

(Winter 1974), pp. 1396-1401.

Wolfe, Thomas W., "Soviet Approaches to SALT", in: Problems of Communism, vol.19 no.5 (September-October 1970), pp. 1-10.

-----". "Soviet Interests in SALT", in: Kintner and Pfaltzgraff (eds.), op.cit., pp. 21-54.