

*On Arms Control: What We Should Look for
in an Arms Agreement (1985)*

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The agreement should serve some clear military purpose, if only a limited one. Sometimes, to avoid an agreement for which there is much public and bureaucratic pressure, but which would plainly do us harm, one might be tempted to make a proposal in the expectation that it will be turned down. However, such proposals have a way of being modified so as to be acceptable to the Soviets without removing the harm they might do to us. And they often appear unconvincing until they are modified. It's safer to back a proposal which would clearly be of some definite military use; this is not *always* incompatible with being useful to the Soviets too.

The agreement should aim *only* at a limited purpose. The implications of even a limited agreement are hard to predict. Comprehensive agreements are even harder. Moreover, they are almost surely unlikely to be verifiable. And even less likely to be enforceable.

It's best to try for an agreement in an area where it is hard to accomplish our purposes by unilateral efforts. An example that will be developed at some length is a carefully restricted agreement for "keep-out" zones around selected satellites, permitting the owner of a satellite to destroy any objects in that zone, or in some cases more restrictively, any object traveling in that zone at the same velocity as the protected satellite. A carefully designed agreement might help with the problem of space mines, for it is particularly hard to deal with that problem solely by unilateral efforts. However, even a well-designed agreement will not *replace* all unilateral effort. This is true in general, and not just for dealing with space mines, as is suggested by the preceding points, namely that agreements should be seen as limited and supplementing unilateral efforts, not replacing them.

Agreements should be of a finite and short duration. It is hard to end any agreement, even one that is explicitly temporary,

but a short agreement is important if we are to make essential adjustments for unanticipated changes in the state of the art and in geopolitical circumstances. Unilateral defense decisions are hard enough even though they are incremental and can be changed year by year as we understand their consequences better. An agreement of indefinite duration wagers a great deal on our being able to predict technical and geopolitical changes and to understand the strategic consequences of such changes in the long run. We are good at neither.¹

For this reason, one should reject the argument made by many proponents of arms control today that a treaty of permanent duration will confer stability because it will enable us and our adversaries to plan with certainty. On the contrary, it is a sure recipe for instability because in general we cannot anticipate such further changes long enough in advance, and a permanent treaty would prevent us from making incremental adjustments when it becomes clear that [such changes] are about to occur.

We should look for an agreement which is not only monitorable, but one which we can enforce unilaterally, and one that provides strong incentives for us to enforce compliance. In fact, we want the incentives for our enforcing the agreement to exceed the incentives for looking the other way.

As the case of the German violations of the Versailles Disarmament Clause illustrates, democracies have powerful incentives to ignore violations, even when they are quite plain and widely known. Versailles provided arrangements for inspection on the ground and other intrusive arrangements which are extremely unlikely to be obtained in any agreement with a closed society like the Soviet Union. Moreover, British and French inspectors and political figures knew of the violations, but did nothing – for fear of making it harder to negotiate a new disarmament agreement; or because political leaders feared the domestic political consequences of *appearing* to be insufficiently enthusiastic about a potential disarmament agreement.

Strategic arms agreements proposed by American advocates of a declaratory policy of deterrence based on suicidal threats to destroy Soviet population centers (“Mutual Assured Destruction,” or MAD) tend also to be premised on the notion that no one can survive a nuclear war and on the notion also that introducing new systems to protect population would be wrong. So, the National Campaign to Save the ABM Treaty states with approval that “the fundamental premise underlying the Anti-Ballistic Missile

Treaty was that nuclear war is not survivable and that a search for technological solutions to alter this reality would be both futile and dangerous.”² Agreements based on such a premise are an outstanding example of the wrong kind of arms agreement. They assume that “the mad momentum of the race” is driven by American technical innovation, especially one that would protect population. And, therefore, to stop the “race” they would impose compliance on the U.S., no matter what the Soviets do. However, that removes Soviet incentives to comply. It encourages passive acceptance, if not total neglect, of Soviet cheating and especially Soviet interpretations of an agreement that defeat its overt purpose and, in particular, defeat our purpose in signing the agreement.

While arms control doctrines based on MAD seem designed to discourage our responding to adversary violations of agreements, their laxity is not unique. Today the media have made it a notorious sin not to display total and uncritical enthusiasm for past as well as future agreements; they take any U.S. government report of a Soviet violation of current agreements as proving that the U.S. government doesn’t “seriously” want arms control. Powerful forces of inertia in the bureaucracy, including the service bureaucracies, tend in the same direction. Administration leaders have told the Congress and the public that the Soviets have violated SALT I and SALT II and many other agreements as well; but have not indicated that we will or should do anything if the Soviets do not take “corrective action.” That presents a serious domestic problem.

The MAD Momentum of MAD-Based Arms Control

The “MAD momentum of the strategic arms race,” talked about by Robert McNamara and other proponents of MAD beginning in the early 1960s, was pure talk. The Soviet Union raced forward while we moseyed back. They tripled their spending on strategic forces—accelerating after SALT I. We cut ours by two-thirds. There has been no MAD momentum in U.S. strategic arms deployment. There has been a MAD momentum in the one-sided application of strategic arms control. Even though, today, it is easy to prove this (Harold Brown, after he was in office, said of Soviet arms, “When we go up, they go up, when we go down, they go up”), the administration has not been able so far to deal adequately with these domestic pressures. We continue to cripple or slow down our own innovations and continue to tolerate Soviet

advances. A more sophisticated and carefully modulated policy is needed to redress this asymmetry.

The Example of German Violations of the Versailles Disarmament Clause and British and French Complaisance in the 1920s

Negotiations for an arms agreement usually carry with them a certain amount of euphoria about the ability to enforce even a vaguely worded agreement. That is part of selling the agreement to a domestic public in a democracy. It is said that if an adversary violates the agreement then the world will know, and fear of world opinion will deter him or shame him into ending the violation; or, if not, we will end the agreement. Our current agreements emerge from negotiations entered into voluntarily by sovereign undefeated states where our means of monitoring are limited. The means of monitoring and enforcing the provisions of a treaty imposed by a victor over a much feared adversary would seem to furnish much more powerful incentives and a much more favorable environment for enforcing compliance. But history tells a different story and should temper any hopes we may have today. The French and British victors in World War I had the means to enforce compliance by a defeated but dangerous Germany, but did not use them. Clandestine German rearmament of the 1920s is a less familiar story of violation than in the 1930s, but it is quite as illuminating.

The Versailles Treaty was meant to disarm a defeated Imperial Germany. The successor government of the Weimar Republic subscribed with overt wholeheartedness to this goal. Karl Joseph Wirth, then Chancellor of the Republic, was the official who signed Weimar's acceptance of the Versailles Treaty. The acceptance said in part: "The German Government is determined ... to carry out without reservation or delay the measures relative to the disarmament of military, naval and aerial forces as specified in the memorandum by the Allied Powers dated 21 January 1921." The memorandum specified that the "manufacture of arms, munitions or any war material, shall only be carried out in factories or works, the location of which shall be communicated to and approved by the Governments of the Principal Allied and Associated Powers, and the number of which they retain the right to restrict." It prohibited "importation into Germany of arms, munitions and war material of every kind" and the dispatch "to any foreign country" of "any military, naval, or air mission."³ These regulations followed

the scrapping of machines, and machine tools in munitions factories like the Krupp Works, and the destruction of existing munitions stockpiles. Moreover, it would seem that whether or not the leaders of the Weimar government really intended without reservations to disarm as specified by the Allied Powers, the allies did not have to rely on their good faith. The Allied Control Commission had very extensive powers of inspection on the ground over a defeated Germany, which exceeded by far any that would ever be agreed to voluntarily by an independent but hostile and closed society entering into an arms agreement during a long period of peace.

On the face of it, one might believe an ideal state of disarmament existed in the 1920s in Germany under a new idealistic government. Unfortunately at the moment of signing Chancellor Wirth was already violating his agreement. In a letter to Gustav Krupp he recalls "with satisfaction" the years from 1920 to 1923 when he and Krupp director Dr. Wiedfeldt were cooperating "to lay new foundations for the development of the German armament technique." President Von Hindenburg, he wrote, "had been informed.... His reaction was also very creditable, though nothing of this has yet been disclosed to the public...." Wirth wished to add this information to his earlier accomplishments "on account of my initiative as the Reich Chancellor and Reich Minister of Finance, by releasing considerable sums of the Reich for the preservation of German armament techniques."⁴ "Preservation" was perhaps the wrong word. The government was helping to finance an entirely new line of armaments, since destroyed industries were obliged to start afresh. And facilities were being provided not only by traditional neutrals—the Dutch, the Danes, the Swedes—but also by the Soviet government. To cite only one example, Krupp's development of a new tough steel permitted the manufacture of machines for grenades which turned out one grenade every 12 minutes as compared to 220 minutes earlier.

In Germany, of course, complicated financial maneuvering became necessary, but double books were not the only means for eluding a conscientious Allied Control Commission. German deception became a fine art, even including infiltration of the Commission so that factories would have adequate warning of inspection visits. The French representative was especially vigilant, since for the French government at this time German rearmament remained an ever present threat. But even the French representative, who was aware of the deception, was unaware of its magnitude.

The Allied Control Commission as a whole knew of the deception. It had discovered and reported many evasions of the Versailles Treaty on the part of industry as well as in the armed forces. Within the army these included numerous paramilitary units, which were secretly equipped and armed, a large expansion in the numbers of police who were housed in barracks, an illegal General Staff which went under the name of *Truppenamt* or Troops Office (which supposedly took care of general *Reichswehr* organizational matters), the covert training of pilots in the Soviet Union, the growth of a military air force within the civilian air transport industries, a device of short-term enlistments, an expansion in the number of NCOs, the use of wargames and command post exercises to give officers training in handling strategies for large armies, etc. Within the Navy one of the most flagrant evasions was construction of submarines under secret contracts with Spain and Finland. The Allied Control Commission's final report in 1927 concluded, "Germany had never disarmed, had never had the intention of disarming, and for seven years had done everything in her power to deceive and 'counter-control' the Commission appointed to control her disarmament."

"Control" has two meanings: one to monitor or observe, the other to regulate or enforce behavior according to rule. The Allied Control Commission monitored. It did not compel, nor did it lead the allied governments to enforce—for all the debate over verification.

Why were these numerous evasions disregarded by the governments in question? There are a number of reasons which will remind us of the situation today, and some that are peculiar to this period of the Twenties.

First, the Commission itself was divided. Some of its members were uninterested and performed perfunctorily. Others welcomed German rearmament as a counter to the French. For example, a senior naval inspector at the time of the dissolution of the Commission in 1927, a Commander Fenshaw, told retired Lt. Renken, his German opposite number, "Both you and I are glad that we are leaving. Your task was unpleasant and so was mine. One thing I should point out. You should not feel that we believed what you told us. Not one word you uttered was true, but you delivered your information in such a clever way that we were in a position to believe you. I want to thank you for this."⁵

Commander Fenshaw's view was shared by many of his British countrymen, who regarded French statesmen as paranoid on the subject of a revival of German militarism. Edouard Herriot is quoted as saying to Austen Chamberlain, "I look forward with terror to her making war upon us again in ten years." And Raymond Poincaré, who resented strongly British indifference to the risks of a German revival, was regarded as personifying a French aggressiveness that was a greater threat to European and world stability than anything likely to emerge from Germany.

Anglo-French antagonisms were reinforced by a feeling on the part of many in England that Germany was being punished too severely for her part in the war not only from the point of view of ethics or justice, but also because the success of the Russian Revolution had alarmed a good many of these officials. The specter of communism had begun to haunt Europe and even before Chancellor Wirth had laid his elaborate plans for deception, the first President of the German Republic, the Socialist Friedrich Ebert, recognized that the Social Democrats might suffer the fate of Kerensky's government if the Spartakist faction gained control of the Social Democrats and if the armed forces disintegrated as they had in Russia. The danger of revolution was real. Liebknecht and Luxemburg on the steps of the Imperial Palace had declared a Soviet Germany when General Groener stepped in with an offer to preserve order and maintain discipline with what was left of the armed forces. Ebert accepted with relief. General Groener interpreted his mandate to be combating the revolution "without reservation" and that meant among other things getting rid of the Workers' Councils and the Spartakists, and he accomplished this in January 1919. His volunteer Free Corps, one of the first fronts for a clandestine Army, crushed the local Communist movement. But in the meantime collusion between parts of the Weimar government and officers of the German Army ensured the quiet return of both the Army and its new arms, while the British government looked the other way. A justified fear of communism motivated the Social Democrats to restore the army to a key role in the state and this led to the systematic deception in rearming. A less urgent fear of communism in part motivated British acceptance of the deception.

As Wheeler-Bennett put it in his heavily documented analysis of the German Army in politics:

... in 1919 the majority of the leading statesmen of the world were more afraid of Communist Russia—a new

phenomenon of evil – than of a possible revival of the old Adam of German nationalism, and those who were shaping the new policies of Germany were quick to take advantage of the opportunity presented by this aberration....

... It was, in effect, the only common ground which existed between victors and vanquished, and already at Weimar there appeared that same line of propaganda which, twenty years later, was to be used by Hitler – and, thirty years later, by Dr. Adenauer and Herr Schumacher – namely, that Germany constituted Europe’s first bastion of defence against Bolshevism.⁶

Another motive for failure to enforce the Treaty was the hope that a new disarmament agreement might be reached which would reduce the need for each nation to rebuild armaments after the war. In England people had had enough of war. The Bloomsbury elite were a symptom of this war weariness. They combined fatigue and a “habit of indecision” with what Wyndham Lewis called “gilded Bolshevism,” a hope and trust that the Soviet experiment was ushering in a brave new world. When the Armistice was signed, they celebrated “not so much the victory of the allies, as Lenin’s wisdom in signing a separate peace to ‘create and fashion a new God’.”⁷

Even the most farsighted and thoughtful of men, Winston Churchill, who was among the earliest and surely was the most outstanding person to recognize the dangers of German rearmament and the menace of the Axis powers, was at the start of the 1920s preoccupied with other matters. As the 1921 Minutes of the Committee of Imperial Defence (CID) illustrate, he was disposed to consider the need for social programs to deal with social unrest after the long hardships of World War I and the rising danger of communism; and to worry about the serious debt problem of England. Therefore in defense matters he focused on ways to reduce British defense spending especially by reducing the British navy and its ability to defend the Far East. (Churchill, for many years after this, discounted any Japanese attack in the Far East as inconceivable in his lifetime. He considered expedients for defending the Middle East, such as those proposed by Air Marshall Trenchard, to use strategic bombers to keep the natives in line cheaply. And he, like others much less foresighted, adopted

the Ten Year Rule that Britain could count on their being no war for the next ten years.)

With domestic problems primarily on his mind he raised no serious objections to the views advanced by Trenchard and others that the French air force and French submarine force, not the German armed forces, were the main threat. He also took part in meetings of the Committee of Imperial Defence (CID) and made no principled objection to the view that disarmament agreements, under the aegis of the League of Nations, would help solve the financial problems of Britain, in effect by reducing the main threat, namely that of France.

Churchill, even in 1921, was more circumspect about the French threat than Trenchard, but he did suggest in these meetings that, "while it was undesirable to fall out with France on this question [i.e., the French air menace to Britain] if it could be avoided ... if France were disagreeable to us in regard to other matters [i.e., the repayment of their debt to Britain], we might bring up the question of the strength of Air Forces" (CID #146, October 2, 1921, p. 3).

Perhaps one of the most fascinating aspects of these meetings of the CID in 1921 is the way that disarmament agreements, the financial difficulties of England, and the need for social programs came up simultaneously with discussions of the use of strategic bombing as a cheap way of bringing an enemy to sue for peace quickly. Trenchard, who at other times talked of attacking only legitimate military targets of war-supporting industry and avoiding innocent bystanders as much as is feasible, read a paper in the 139th meeting of the CID on May 27, 1921, which made clear that he thought of strategic bombing (and especially strategic bombing that would have to be faced by England) as having as its purpose "to drive home the fear of personal injury and loss to every individual." It is not clear that he is advancing here the position he frequently took that the only good defense in the Middle East was to drive home the fear of personal injury and loss to every individual on the other side even more quickly. But there is little evidence that he displayed interest in discrimination and precision in that meeting.

Churchill, in the late 1920s, long before it was common, saw clearly that disarmament negotiations raised more problems than they solved. "We always seem to be getting into trouble over these stupid disarmament manoeuvres," he wrote to Donald Ferguson on September 9, 1928. "And personally I deprecate all these

premature attempts to force agreements on disarmament." In particular, Churchill recognized (as in his splendid "disarmament fable" which anticipated Salvador de Madariaga, see Appendix A) the arbitrariness and ambiguity of the capabilities each of the powers wanted to restrict in others and allow for itself and, most important, he recognized that France was not the greatest threat, and that Germany was going to be. He stressed that weakening France compared to Germany by forcing it to cut its army in half while allowing the Germans to double theirs in the name of giving the Germans "equality" was a very bad idea. However, Churchill's views in 1928 were rare in Britain.⁸

In Germany, Foreign Minister Stresemann pressed continuously for a decision to withdraw the Allied Control Commission, and he finally accomplished his goal on December 11, 1926. He had acted in conjunction with the French Foreign Minister, Aristide Briand, and his British counterpart Austen Chamberlain. Briand had always been impatient with the "petty details" brought forward by the Commission, and it is significant of the temper of the time that he and Stresemann shared the 1926 Nobel peace prize. The Commission's final report about German non-compliance with the old disarmament agreement was either ignored or suppressed.⁹ It was subordinated to flourishing hopes for a new disarmament agreement—hopes which finally culminated in the Geneva Disarmament Conference of 1932. Sir John Simon, the British Foreign Secretary at that time, was an urgent advocate for rapid and comprehensive disarmament. In the event this resulted in great pressure on France to reduce its defense expenditures and the size of its army, in order—in Sir John's words—"to allow the fair meeting of Germany's claim to the principle of equality." Under his aegis, the disarmament plan finally submitted to the House of Commons proposed the approximate halving of France's army and a doubling of the German army.

One of the members of the Allied Control Commission, Major General Temperley, who had been painstaking in his observation and recording of German violations of the Versailles Treaty, became the principal military expert for Great Britain at the Geneva Disarmament Conference of 1932. In spite of his earlier experience, he did all in his power to promote a new agreement. The French delegates, on the other hand, concerned about the growing military strength of their neighbor, had at hand a dossier listing the continuing German deceptions, which they were

planning to present to the Conference. General Temperley wrote, "I was in possession of our own [dossier] which was not less an indictment of German good faith, backed up by unimpeachable evidence." However, he felt that "the past was past and we saw no particular point in raking it up ... so long as there was a chance of getting an agreement, I used what influence I possessed against bringing up the 'secret' dossier. In fact it never was made public...."¹⁰

We are seeing the same reactions today to the U.S. government's publication of Soviet violations of U.S.- Soviet arms agreements—a plea to forget our past experience and to stop rocking the boat. We are reminded of Churchill's words in an article he wrote for *The Daily Mail* in the spring of 1932:

There is such a horror of war in the great nations who passed through Armageddon that any declaration or public speech against armaments, although it consisted only of platitudes and unrealities, has always been applauded; and any speech or assertion which set forth the blunt truths has been incontinently relegated to the category of "warmongering."¹¹

Arms Agreements Based on MAD, by Paralyzing U.S. Response to Soviet Union Arms Expansion, Encourage It

The idea that has governed the elite view of arms control in the U.S. since the mid-1960s proceeds on the assumption that the U.S. has been driving "an ever accelerating nuclear arms race" in the strategic field, forcing an increase by the Soviet Union—which would otherwise be satisfied with a minimal force designed only to deter U.S. attack by threatening U.S. cities. It assumes:

- a) that the U.S. can reliably deter any Soviet use of nuclear weapons against a major Western country by threatening to bomb Soviet cities, and that this can be done cheaply without continuing innovation in nuclear forces and with a much smaller, exclusively offensive force.
- b) the U.S. not only need not defend its population but that spending for that purpose would be bad since it would deprive the Soviet Union of the ability to destroy our cities and so provoke the Soviet Union into new and ever higher levels of arms spending and possibly into an actual attack.

- c) spending money on preserving *control* of our nuclear offense forces would not only waste resources but provoke the Soviet Union.

Our elites recommend avoiding waste and provocation by foregoing defense of our population or any attempt to secure the ability to keep our offensive forces under control in the event of war. In fact, even if the Soviets introduce more weapons or new weapons, it would make no difference. "Neither side can alter the situation decisively by any foreseeable deployment or technological breakthrough."¹² As President Nixon put it at the time of SALT I: "The change required to upset the balance is so large that it cannot be achieved by limited means."¹³

Nominally Bilateral Arrangements Actually Reduce U.S. Arms One-Sidedly

MAD theory would seem to say that the U.S., by unilaterally renouncing any nuclear capability other than the capability to bomb Soviet cities, can both end the arms competition and be safer against nuclear attack. We can reduce our spending unilaterally. That would seem to make negotiations on arms agreements restricting the Soviet Union quite unnecessary, and certainly not urgent. However, our elites are sophisticated fellows and recognize that the Congress and the American public and even perhaps the Executive are all too primitive to accept such unilateral disarmament if it is explicit. They therefore need arms negotiations and agreements which are superficially bilateral to get the Congress and the Executive branch to make the necessary reductions on our side. For that purpose, however, an agreement need not restrict the Soviet Union—which, they assume has in any case, no ambitions which would be served by maintaining an effective nuclear force other than to deter us from attack, and which has only been forced by *us* to increase its nuclear arsenal. An agreement which tolerates Soviet violations, and indeed cripples our own ability to enforce their compliance, they believe, does us no essential harm. In short, arms negotiations and agreements based on MAD serve the practical political function of restricting us while only nominally (but supposedly safely) restricting the Soviets.

In fact, MAD theories of *deterrence* focus almost exclusively on making sure that U.S. political leaders will never use nuclear weapons first or second, early or late: They stress (most obviously

in recent years) that any nuclear exchange will mean universal ruin and that we therefore should not take part in any such exchange. MAD declaratory policy undermines our ability to deter Soviet attack by relying on a suicidal threat we plainly would not (and should not) execute if deterrence fails. An arms control agreement based on MAD, on the other hand, undermines our ability to restrain a Soviet arms buildup in violation of the agreement by making it hard to reply with a buildup of our own, since that too would be in violation of the agreement.

Advocates of MAD never face the problem of how to deter or respond to a Soviet limited use of nuclear weapons which would leave the U.S. and other Western countries a large stake in not sacrificing their populations. They make any response suicidal and incredible. Similarly, theories of arms control based on MAD focus almost exclusively on making sure that the U.S. will comply not only with the letter of that agreement but with the spirit of the agreement, that we will avoid anything that could be possibly interpreted as an infringement of the rules; on the other hand, they sometimes rather explicitly make it safe for the Soviets to violate the agreement or so to interpret the agreement as to subvert its nominal purpose in controlling them as well as us. They prepare an advance apology for Soviet noncompliance.

Such Nominally Symmetrical Arrangements are a Pragmatic Political Device Justifying Actual Asymmetry

It is hard to say how much is self-conscious in this manipulatory view of the role of arms controllers as a way of getting Congress and our political leaders to go along with what are effectively one-sided restraints on us and using the bureaucracy in a way that enforces American but not Soviet compliance.

However, the arms control community has developed some legalistic technical arguments which are sometimes quite explicit on the possibility of exploiting the inertia of bureaucracies to enforce our compliance and at the same time to predispose the bureaucracy, the Congress and the political leadership to tolerate violations by the Soviet Union. For example, Abram Chayes in an article in *Harvard Law Review*, March 1972, written shortly before the ratification of SALT I, argued that "the inertia and imperatives of bureaucratic operations under a treaty and the contemplated mechanisms for verification and enforcement" would generate "forces for compliance." He applies this not only to treaties but

also to informal understandings and moratoria. Mr. Chayes gives us a splendid example of such forces for compliance on our side operating in the nuclear moratorium of 1958.

After President Eisenhower proclaimed a moratorium on nuclear testing in 1958, the AEC and Defense Department sharply reduced what had been a routine activity: cranking out test plans and programs. It was no longer very profitable, from an agency viewpoint or in terms of the career line of an official, to sit around thinking up ideas for interesting weapons tests or planning their execution. As a result, when the U.S.S.R. resumed atmospheric testing in September 1961, the United States was not ready to respond in kind. It took six months just to complete the physical operations. But even when the logistics were all worked out, no significant tests and experiments had been developed. The tests that were actually carried out were not very productive for purposes of science or weapons technology—they were essentially political.¹⁴

Mr. Chayes believes that this shows that once a treaty or informal understanding goes into effect “all the classical defects of bureaucracy become virtues from the point of view of arms control. Rigidity, absence of imagination, initiative, creativity, unwillingness to take risks, operations by the book—all are enlisted in aid of compliance with the agreement (pp. 935-936).”

The example of the test moratorium, however, brings out an essential flaw in this line of reasoning and this style of arms limitation. It may seem a minor problem in a theory presented so grandly and in such general terms about compliance by *any* party to *any* arms agreement. However, it should be enough to spoil the euphoria. Apparently the familiar rigidity of the Soviet bureaucracy, which we know is impressive, did not operate to force the Soviets to comply with the moratorium in either the letter or the spirit. The Soviet breakout was not a sudden decision, but as Hans Bethe pointed out in indignation at the time,¹⁵ it followed elaborate preparations for the sudden conduct of such tests on a massive scale. The Soviet bureaucracy was not generating forces for Soviet compliance, but proceeding on the orders of their political leadership and under an elaborate cover and deception plan to generate a test program. And, in general, the troubadours

who sing the virtues of bureaucratic irrationality would mislead themselves less if they used fewer abstract nouns like “compliance” and more verbs like “complying” or “violating” or “deceiving” with names of real countries as subjects and objects of the verbs. But of course that would reveal to themselves and to the public that they are really talking about forcing U.S. compliance and making it difficult for the U.S. to penalize Soviet noncompliance.

Roger Fisher, also of the Harvard Law School, has talked about a zone of doubtful conduct which establishes “a precautionary rule” — “some distance back from the interest we are trying to protect, so that a breach of the rule does not necessarily offend that interest” (*op. cit.*, p. 937). It is true that the United States has taken such precautions to avoid infringements on the unratified threshold Test Ban. But the Soviets have exploited the uncertainty in the other direction, in order to exceed the threshold. In this they rely on the inertia of our bureaucracies to escape any sanctions or denunciations of the informal understanding.

In fact, Professor Chayes himself observes the Soviets are “strict constructionists” who interpret a limitation in such a way as to restrict themselves as little as possible. That is, anything that is not very plainly prohibited by the agreement, they take as permissible:

“The very meaning of a line in the law is that anyone may get as close to the line as he can if he keeps on the right side.” (Quoted from Justice Holmes, 1916.) In fact, this view finds expression in Soviet strict constructionist doctrine, which holds that a government is bound only to the extent of its express consent.¹⁶

In brief, the Soviets will tend to stay as far as possible on the noncompliance side of the line, secure in the knowledge that the U.S. advocates of arms agreements will keep the U.S. as far as possible on the compliance side. And all this can take place without any clear violation of the letter of the agreement, regardless of what damage it does to the “spirit.”

However, the Soviets can, and have, plainly violated even the letter of agreements with impunity. This has involved the masking of signs of what they were doing, but no great risk when the mask is dislodged or removed. The inertia of Western political leaders and Western bureaucracies makes the job of an adversary

interested in deception easier. He need not suppress all signals of his violation. He can in fact avoid sanctions even if agencies of the U.S. government are aware of “probable” violations, or “almost certain” violations, or just plain violations. The Soviets have been able to depend on the desire of Western decisionmakers to avoid denouncing violations for fear of spoiling the possibility of future agreements, or out of fear of being accused of *wanting* to spoil arms control.

The U.S. tends to avoid obtaining a capability which may be extremely important for the purpose of the agreement (for example, a precise non-nuclear missile, that could replace the sort of nuclear missile restricted by the agreement) if that capability (e.g., the same precise missile, but with a nuclear as distinct from a nonnuclear warhead) also permits activities of a kind restricted by the agreement. In fact we often avoid attaining a capability which would further the overt *purpose* of an arms agreement because it would make it possible for us to avoid the *letter* of the agreement. (We have avoided or delayed developing precise non-nuclear missiles which could *replace* missiles with nuclear warheads and so reduce our reliance on nuclear weapons on the ground that such nonnuclear missiles *could* carry nuclear warheads. So the now expired moratorium on cruise missiles in SALT II.)

At the same time we tolerate Soviet forces which are easily capable of functioning in ways restricted by the agreement, so long as the Soviets claim that their purpose in fielding these particular forces is not incompatible with the agreement. And in fact there may be some “Functionally Related Observable Differences” (FRODs) which they point to as indicating their benign intent. The differences displayed in “FRODs” usually are trivial and seldom seriously restrict the Soviet’s ability to defeat the agreement.

Professor Chayes notes that “in the recent Cold War period, the rubric has been that since it was impossible to be sure of the other side’s intentions, policy decisions should be based on capabilities.” In brief, Professor Chayes thinks we should take a more relaxed attitude towards a Soviet capability to shoot down, say, one of our ICBMs or SLBMs even though it might seem to violate the ban on defense against strategic ballistic missiles. We should depend rather on being able to predict whether or not the Soviets will expand that capability and use it in that particular way. The supporters of MAD declaratory policy, and of arms negotiations based on the assumptions of that policy, have been singularly unsuccessful in predicting Soviet behavior—or

even in noticing what Soviet behavior has been in past Soviet deployment—and especially poor in noticing how badly our predictions of Soviet deployments have matched the realities that eventuated. There is no reason to believe that their ability to predict will improve enough to reassure us that a violation is insignificant. However, once again it appears that this sort of relaxed view of Soviet compliance in letter or spirit is not matched by an equally relaxed view about American compliance among American elites who base their arms control policy on MAD. There are some immediate important current examples.

Alan B. Sherr, who heads the Lawyers Alliance for Nuclear Arms Control, published a brief in June 1984 on “Legal Issues of the ‘Star Wars’ Defense Program.” He says,

A major perceived loophole in the ABM Treaty is that weapons development which clearly would be prohibited if intended for use in an anti-ballistic missile system can proceed unhindered if intended for use, at least initially, in an *anti-satellite (ASAT) system*. As a matter of law and sound policy, however, *capability*, rather than *intent* is the applicable standard. As a factual matter, it appears that some projects have an *ABM capability* even though they are currently referred to as serving an “ASAT role.” Contrary to current practice, therefore, the development, testing and deployment of such weapon systems or components are barred by the ABM Treaty independent of whether they are “tested in an ABM mode” (pp. 15-18).

In short, however benign our apparent intentions (and Mr. Sherr regards us as suspect), it is enough that we *could* use a capability actually designed to destroy Soviet satellites (a capability not restricted by SALT I) to commit the cardinal sin of destroying a Soviet ICBM on its way to destroy an ICBM base in the U.S. or to annihilate an American city (a sin which is drastically restricted in SALT I).

The Soviets, as might be expected, take a different view. They now have ways of destroying (or disabling for critical periods) American satellites. And under the Anti-Satellite Treaty they propose they could continue to have such capabilities. No problem. They would not use them that way, and even if they did, once they had destroyed our satellites, we could always verify that

our satellites had been destroyed. Academician Velikov recently said,

You can kill with a hammer. So it is logically stipulated that you'll be punished not because you have a hammer but because you try to kill with it. The same reasoning applies to the treaty on antisatellite weapons that we propose. Of course, there exist ways of destroying satellites, any stupid ways [sic]. If we can dock with a satellite, then clearly we can dock with an American satellite, but a bit carelessly, and thus destroy it. But the idea of our proposal is that there is no problem in verifying whether or not a satellite has been destroyed.¹⁷

Of course, that verification might come a little late.

Mr. Sherr, one may predict, is unlikely to insist on strict banning of the Soviet *capability* to destroy our satellites in some future ASAT treaty. However, he does insist that developing U.S. capabilities now, when there is no ASAT treaty, has already violated the ban on developing and testing a capability to defend against Soviet strategic ballistic missiles.

Since No Military Capability is Unambiguous, MAD-Based Agreements Tolerate a Pervasive Asymmetry between the Soviet Union and the U.S.

An offensive force can be used in a preventive war to preclude attack; or as a deterrent and to retaliate to attack. A defensive force can be used to preserve the ability to respond to an attack by an aggressor and contain the catastrophe to civil society wreaked by his attack; or it might be used to supplement an offense force in an aggression by interposing an extra barrier to the victim's response.

Attempts at qualitative disarmament or freezes today which act as if one could tell whether a system or a performance characteristic has a "first-strike character" or a "second-strike character," simply by inspection without looking at the many uses in differing contexts, misunderstand the first-strike/second-strike distinction. Such attempts repeat the interwar confusions of the "qualitative disarmament" which tried hopelessly to distinguish between "offensive weapons" and "defensive weapons." It is

worth quoting Winston Churchill once again on the subject of such qualitative disarmament:

The Foreign Secretary told us that it was difficult to divide weapons into offensive and defensive categories. It certainly is, because almost every conceivable weapon may be used in defence or offence; either by an aggressor or by the innocent victim of his assault. To make it more difficult for the invader, heavy guns, tanks, and poison gas are to be relegated to the evil category of offensive weapons. The invasion of France by Germany in 1914 reached its climax without the employment of any of these weapons. The heavy gun is to be described as "an offensive weapon." It is all right in a fortress; there it is virtuous and pacific in its character; but bring it out into the field—and, of course, if it were needed, it would be brought out into the field—and it immediately becomes naughty, peccant, militaristic, and has to be placed under the ban of civilisation. Take the tank. The Germans, having invaded France, entrenched themselves; and in a couple of years they shot down 1,500,000 French and British soldiers who were trying to free the soil of France. The tank was invented to overcome the fire of the machine-guns with which the Germans were maintaining themselves in France, and it saved a lot of lives in clearing the soil of the invader. Now, apparently, the machine-gun, which was the German weapon for holding on to thirteen provinces of France, is to be the virtuous, defensive machine-gun, and the tank, which was the means by which these Allied lives were saved, is to be placed under the censure and obloquy of all just and righteous men....

A truer classification might be drawn in banning weapons which tend to be indiscriminate in their action and whose use entails death and wounds, not merely on the combatants in the fighting zones, but on the civil population, men, women, and children, far removed from those areas. There, indeed, it seems to me would be a direction in which the united nations assembled at Geneva might advance with hope....¹⁸

Present discussions of qualitative arms control in some ways are even more far-fetched than the interwar efforts which tried to restrict offensive weapons and encourage defensive weapons. The present efforts actually treat defensive weapons as more malign. But, in any case, like the earlier efforts they vastly oversimplify the problem by ignoring ambiguities that are intrinsic. Churchill's comment that we'd be better off trying to restrict weapons that are indiscriminate or that indiscriminately kill civilians is even more applicable today.

A research reactor using natural uranium as a fuel might serve as an aid in designing power reactors; or as a means of accumulating and separating plutonium for producing plutonium fuel for a civilian breeder reactor in the future; or as a means of accumulating and separating plutonium for a nuclear explosive. A nuclear explosive might be used to destroy an adversary's military facilities or population centers; or to dig a canal. There have been several clear-cut violations of agreements on the peaceful uses of atomic energy and also violations of the nonproliferation treaty. These have been known to other parties to the atomic energy agreements, and in particular the United States government. And they have also been known to the IAEA. Compliance has not been pressed, nor in general has cheating been acknowledged for fear of jeopardizing past or future agreements. Instead, ambiguities have been used, even where interpretation is far-fetched, as equivocations in order not to disturb the inertia of bureaucracies.

A large phased-array radar may be used to track space "junk" or for early warning if it is placed near the periphery of a country looking outwards towards a probable attacker; or it may be used for battle management to guide interceptor missiles to destroy an incoming ballistic missile. ABM may defend missile sites (which MAD doctrine might be expected to regard as a good thing just as shelter for a missile is supposed to be good); or it might be used to defend population (which MAD doctrine supposes to be bad, just as it supposes civil defense shelters to be bad). During the negotiations for the ABM treaty there were some internal papers within the U.S. government proposing that defense against ballistic missiles might be permitted, but limited to missile sites remote from cities—in the Soviet Union west of the Urals and in the United States east of the Rockies. This was rejected in internal debate because it was said that even such circumscribed site defense remote from cities might conceivably be extended and thickened so as to defend populations though such an extension

and thickening would take many years and would be quite visible. But the ABM treaty went to great lengths to make certain that no development, testing or deployment of an ABM other than a quite trivial deployment on a single site would be allowed. As anticipated, that destroyed any strong incentives on the American side to carry out a vigorous research and development program on ballistic defense of any sort. But not on the Soviet side. Nor did it stop the Soviets from deploying radars at Krasnoyarsk which almost certainly are likely to have a battle management capability.

To compensate for the restraint on active defense in ABM missile sites, SALT I relied on restraining the dimensions of the silos so as to limit the number of Soviet heavy missiles, and so, it was thought, their capacity to destroy our ICBMs. (They used techniques for launching that ignited the booster after the missile had been expelled from the silo and so were able to fit heavier missiles in the silo.) In any case, a limitation on the size of missiles did not prevent their increasing the precision of missiles and so in this way gaining the ability to destroy our missile sites. In short, SALT I did not prevent an active Soviet research and development program on ABM and it did not prevent their increasing their offensive capability so as to make our fixed land-based force obsolete. (See Appendix B.)

The Advocates of Arms Agreements Based on MAD Prefer Arms Agreements of Indefinite Duration Because They are Harder to Alter Even When Circumstances Alter

Agreements that do not terminate automatically at a given time are hard to terminate at all, even when wisdom suggests they should be ended because changes in the state of the art unanticipated in drafting the agreement or Soviet infringements of the agreement make it obsolete. Given the intrinsic difficulties of anticipating technical change and the especially poor record of arms controllers in making such predictions, it is essential that any serious agreement be limited in duration if we are to avoid serious instabilities.

APPENDIX A

Returning from the Paris negotiations, Churchill reflected on what he saw as the folly of premature disarmament, and on October 25, 1928, during a speech in his constituency, he told what he called a 'disarmament fable.' The tale was as follows:

Once upon a time all the animals in the Zoo decided that they would disarm, and they arranged to have a conference to arrange the matter. So the Rhinoceros said when he opened the proceedings that the use of teeth was barbarous and horrible and ought to be strictly prohibited by general consent. Horns, which were mainly defensive weapons, would, of course, have to be allowed. The Buffalo, the Stag, the Porcupine, and even the little Hedgehog all said they would vote with the Rhino, but the Lion and the Tiger took a different view. They defended teeth and even claws, which they described as honourable weapons of immemorial antiquity. The Panther, the Leopard, the Puma and the whole tribe of small cats all supported the Lion and the Tiger. Then the Bear spoke. He proposed that both teeth and horns should be banned and never used again for fighting by any animal. It would be quite enough if animals were allowed to give each other a good hug when they quarrelled. No one could object to that. It was so fraternal, and that would be a great step towards peace. However, all the other animals were very offended with the Bear, and the Turkey fell into a perfect panic.

The discussion got so hot and angry, and all those animals began thinking so much about horns and teeth and hugging when they argued about the peaceful intentions that had brought them together that they began to look at one another in a very nasty way. Luckily the keepers were able to calm them down and persuade them to go back quietly to their cages, and they began to feel quite friendly with one another again.

Quoted in Martin Gilbert, *Winston S. Churchill*, Vol. V, 1922-1939 (Boston, MA: Houghton Mifflin, 1977).

APPENDIX B:
Ambiguities and the Soviet Destruction of SALT I

Part of the problem of arms control is, first, that every military weapon or weapons system can be used for several functions, and, second, that any specific function can be performed in several ways by various alternative military systems. These two difficulties have affected our negotiators and our actual agreements. The first difficulty has operated as a broad constraint on the United States, leading us to forego the development and deployment of systems with several useful and in some cases extremely important military functions in order to make sure that the noxious function is banned. We have interpreted the constraints upon ourselves very broadly.

The second difficulty, namely that a function can be performed by several military systems, has operated so as at most to keep the Soviets from using only one specified way of performing the banned function, but leaving them free to adopt several other alternatives for doing so. We have interpreted the constraints on the Soviets very narrowly, making it possible for them to defeat the overt purpose of the agreement. And that is what they have done.

Both difficulties are illustrated in SALT I. First, we surrendered the important possibility of actively defending the missile silos—a purpose which both sides agreed would be legitimate—because we thought that such defenses might be amplified to perform another function, that of defending population, even though this sort of transformation could hardly have been done without easy detection. For the second difficulty, we cut off one way for the Soviets to destroy our Minuteman silos, but left other ways open for them to develop a formidable array of silo destroyers, and so defeated the major purpose of the agreement.

SALT I

Language worked out in Helsinki probably assures adequate protection against any increase in the number of missiles in the SS-9 class; but it is nonetheless a bit vague and incomplete, lacking, for example, a definition of what constitutes a 'heavy' missile. The Soviets were determined to keep it that way. And they did. Still, any violation of the spirit of this language, let alone the let-

ter, would probably oblige the United States to withdraw from the agreements. Moscow understands that.

John Newhouse's account, which is quoted above, of how the American negotiators of SALT I regarded the probable response of the U.S. to Soviet violations of the spirit of the SALT I offense agreement is accurate. Newhouse also correctly reports what the U.S. delegation *thought* the Soviets believed we would do. Unfortunately the delegation was wrong on both counts. The Soviets violated the letter and above all the spirit and purpose of the agreement. They anticipated apparently that the U.S. would *not* withdraw. And the U.S. has not withdrawn.

The offense agreement and the Treaty on Anti-Ballistic Missile Defense were supposed to complement each other. For the ABM treaty to be viable, the offense agreement had to work, or better, be replaced by a treaty that could accomplish at least the same thing more desirably. The ABM treaty limited any defense against ballistic missile attack to trivial levels. Moreover it limited *not only* ballistic defense of cities, in accordance with the ideology of MAD which regards killing people as good and defending people as bad (to use language which Newhouse has also faithfully quoted in describing the beliefs of the U. S. delegation). It also limited the defense of Minutemen missile sites against Soviet ballistic missile attack.

On the face of it that last limitation seems cockeyed, even if one were to accept the simpleminded theory of stability held by advocates of MAD: They believe that killing *weapons* is bad, just as killing people is good; therefore *defending* weapons is supposed to be good and "stabilizing." However, the advocates of MAD were so bent on preventing the defense of population against missile attack that they drastically limited the defense of Minutemen missile sites so as to exclude even the far-fetched possibility that the site defense might be expanded secretly and rapidly to include a thick defense of population throughout the country. Such expansion of Safeguard ballistic missile defense of Minuteman sites would have taken five to ten years and would have been easily open to observation and interruption. Moreover, it was possible to make that sort of breakout even more remote (as some of us suggested at the time, even though we did not accept the premises of MAD) by constraining the defense of missile sites to regions east of the Urals and West of the Rockies which are very far from population centers.

Instead of a site defense which could have been made increasingly sophisticated over time, the negotiators of SALT I proposed to defend the Minuteman (MM) sites by limitations embodied in the offense agreement. These, it was believed, would prevent any addition to the number of Soviet offense ballistic missile warheads capable of destroying our MM silos. They assumed that it was only the large yield five-megaton warheads on the "heavy" SS-9 missiles which could destroy silos, and that there were at the time only 924 of these warheads, three apiece for each of the 308 SS-9 missiles in the silos we had counted by satellite. Our negotiators, therefore, tried to accomplish this purpose in the agreement by restricting the number of "heavy" missile silos to 308.

There were lots of troubles with the assumptions underlying the agreement which were easily exploited to defeat its purpose. First, the accuracy of the missile is much more important than the yield in destroying a small target like a silo. If we consider only blast overpressure, an improvement in accuracy, in fact, is worth roughly the cube of an increase in yield. An improvement in accuracy by a factor of two offsets a decrease in yield by a factor of eight; an improvement in accuracy by a factor of five offsets a 125-fold change in yield.

For some targets including silos, we must consider in addition to the transient blast overpressure another factor, namely, the duration of the impulse. Larger yield weapons have a larger impulse and therefore are more than proportionately destructive. However, even with this qualification, the importance of changes in accuracy far exceeds that of differences in yield. The Soviets did not need a five megaton warhead to destroy a MM silo. More accurately delivered warheads could be lighter and smaller, and of very much smaller yield. They could be carried on light missiles or you could have many more than three such silo-destroyers on a heavy missile.

The Soviets did improve their accuracy by a factor of five and therefore a warhead of less than 100 kilotons could be as effective as the SS-9 five megaton warhead. A "heavy" missile could carry many more than three of the silo destroyers and so even could a light missile.

Second, the constraint in the agreement applies to silos which we can observe, not to the number of missiles which we cannot. The Soviets have some missiles which are not in silos. They have some missiles that can be reloaded into reusable silos. Some might

be fired not from silos, but from launchers concealed in wooded areas or under sliding roofs.

Third, even for warheads of substantial yields, constraints on silos are quite inadequate for imposing limitations on the number of warheads. We don't know how to monitor the yield and numbers of reentry vehicles so we might think of restricting throw weight. But we don't know how to do that directly either, so we might think of restricting the volume of the missile. But even here the delegates failed to observe what was plain at the time, that the Soviets could squeeze larger missiles into silos of a given size if, instead of igniting the booster in the silo, they expelled the missile first from the silo, and then ignited it. That is the way we launch missiles from submarine tubes. In fact, the Soviets exploited these "cold launch" techniques, as some of us predicted. They squeezed much "heavier" SS-18s into SS-9 size silos and they squeezed much heavier missiles into SS-11 size silos that we had taken as the standard for defining a "light missile silo," as differentiated from a "heavy missile silo."

The Russians refused to define a heavy missile silo. (That should have given us a hint as to their behavior under the Treaty.) We stated what we understood it to be, and said that any new silos that were 10-15 percent larger in dimensions would violate the agreement. There was a great deal of vagueness and confusion in our definition. The 10 percent, of course, was not operative. In talking of 10-15 percent, it is obvious that only the 15 percent could operate as a constraint. (The 10 percent was like the 50 percent in advertisements of fire sales with discounts of *up* to 50 percent.) But the initial phrasing of our understanding did not make clear as to whether the 15 percent applied to the length or the cross-sectional area or the volume, that could make a difference between a 15 percent and 50 percent increase in volume. Moreover in testimony before the Senate on SALT I, it was clear that there were differences among principal negotiators as to what that constraint meant.

But it is unnecessary to focus on the detailed ambiguities in the letter of our "unilateral understanding" or in the letter of the main body of the agreement itself. The gist of the matter is that the Soviets exploited these ambiguities so as to vastly increase the number of their warheads capable of destroying our MM silos. The SS-19 which counts as a light missile, for example, has *three times* the throw weight of the SS-11 which was supposed to be the standard for a light missile! It has six accurate reentry vehicles

and warheads capable of destroying MM silos, compared to the three in the "heavy" SS-9. The SS-18 has ten.

The upshot of these changes is that the SS-18 missiles and the SS-19 missiles in silos now have nearly six times as many warheads capable of destroying Minuteman as the 924 MIRVs in the 308 SS-9 missiles which our negotiators thought were the threat to Minuteman. The language at Helsinki did not "assure adequate protection against any increase in the number of missiles in the SS-9 class."

In short, whatever the details, the Soviets defeated the principal purpose of the agreement on offensive missiles. They violated the spirit in a quite material sense. The U.S. did *not* feel obliged to withdraw. And the Soviets were *not* wrong in anticipating that we would not withdraw, that they could defeat the overt purpose of the agreement with impunity. They predicted our behavior better than we did.

ENDNOTES - The Wohlstetters - On Arms Control

1. Many present-day advocates of permanent treaties based on MAD have been unable to predict technical changes or their strategic consequences or even their own strategic views six months in advance: they switched from advocating in 1957 in the Gaither Report a huge program for civil and active defense including the defense of populations against ballistic missile attacks, on the ground that it would increase stability, to the other extreme some six months later, that maintaining even a modest defense of population would be destabilizing.

2. "Statement in Support of the ABM Treaty," National Campaign to Save the ABM Treaty, 1324 Connecticut Avenue, NW, Washington, DC, p. 1. See also, the conclusions on page 37 of their "Report on the Impact of U.S. and Soviet Ballistic Missile Defense Programs on the ABM Treaty."

3. Quoted in William Manchester, *The Arms of Krupp, 1587-1968*, Boston, MA: Little Brown and Company, 1964 [1968], p. 342.

4. *Ibid.*, p. 343.

5. Navy Captain Schussler, "The Fight of the Navy Against Versailles, 1919-1935" in *Trials of War Criminals before the Nürnberg*

Military Tribunals, Vol. X, Washington, DC: USGPO, 1951, pp. 433-465.

6. John W. Wheeler-Bennett, *The Nemesis of Power: The German Army in Politics, 1918-1945*, 2nd ed., London, UK: MacMillan & Co.; New York: St. Martin's Press, 1964, p. 40.

7. Paul Johnson, *Modern Times: The World from the Twenties to the Eighties*, New York: Harper & Row, 1983, p. 171.

8. Martin Gilbert, *Winston S. Churchill, The Prophet of Truth*, Vol. V, 1922-1939, Boston, MA: Houghton Mifflin, 1977, pp. 304-305.

9. Wheeler-Bennett, *op. cit.*, p. 185-186.

10. A. C. Temperley, *The Whispering Gallery of Europe*, London, UK: Collins, 1938, pp. 221-222.

11. Quoted in Martin Gilbert, *op. cit.*, p. 445.

12. Abram Chayes, "An Inquiry into the Writings of Arms Control Agreements," *Harvard Law Review*, Vol. 85, No. 905, 1972, p. 911.

13. *U.S. Foreign Policy for the 1970s*, a report to the Congress by the President, May 3, 1972, p. 232.

14. Chayes, *op. cit.*, p. 936.

15. "[T]he Russian procedure showed bad faith. Their test series was so elaborate that it must have been prepared for many months, perhaps longer. It is likely that they had started preparations by March when the test ban conference reconvened in Geneva; thus they negotiated for six months in bad faith. They did so at the time when we were showing most clearly by our attitude and proposals at Geneva that we were sincerely interested in the test ban...." Hans Bethe, "Nuclear Testing," lecture, Cornell University, January 5, 1962.

16. Chayes, *op. cit.*, pp. 937-338.

17. Interview with Yevgeniy Velikhov, vice president of the U.S.S.R. Academy of Sciences, Moscow Radio in English to North America, May 26, 1984, 2300 GMT, *FBIS Daily Report: Soviet Union*, June 6, 1984, p. AA 12.

18. Winston S. Churchill, Speech to the House of Commons, May 1932, in *The Gathering Storm*, Boston, MA: Houghton Mifflin, 1948, pp. 71-72.