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Bulletin of the Atomic Scientists

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"This is the time when things must be done before their time."

ROBERT REDI

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Shall We Face the Facts? • Less Witch Hunting – More Progress!
Did the Soviet Bomb Come Sooner Than Expected?

Bulletin of the Atomic Scientists

Vol. V October, 1949 No. 10

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THE RUSSIAN EXPLOSION

MR. TRUMAN'S ANNOUNCEMENT

I BELIEVE the American people to the fullest extent consistent with the national security are entitled to be informed of all developments in the field of atomic energy. That is my reason for making public the following information.

We have evidence that within recent weeks an atomic explosion occurred in the U.S.S.R.

Ever since atomic energy was first released by man, the eventual development of this new force by other nations was to be expected. This probability has always been taken into account by us.

Nearly four years ago I pointed out that "scientific opinion appears to be practically unanimous that the essential theoretical knowledge upon which the discovery is based is already widely known. There is also substantial agreement that foreign research can come abreast of our present theoretical knowledge in time." And, in the three-nation declaration of the President of the United States and the Prime Ministers of the United Kingdom and of Canada, dated Nov. 15, 1945, it was emphasized that no single nation could, in fact, have a monopoly of atomic weapons.

This recent development emphasizes once again, if indeed such emphasis were needed, the necessity for that truly effective and enforceable international control of atomic energy which this Government and the large majority of the members of the United Nations support.

THE SOVIET ANNOUNCEMENT

O N SEPT. 23, Mr. Truman, President of the USA, announced that according to data of the Government of the USA, during one of the recent weeks there had occurred in the USSR an atomic explosion. Simultaneously, a similar statement was made by the British and Canadian governments.

Following the publication of these statements in the American, British and Canadian press and also in the press of other countries, there appeared numerous utterances which spread alarm among broad social circles.

In this connection, Tass is empowered to declare: In the Soviet Union, as is known, building work on a large scale is in progress; the building of hydro-electric stations, mines, canals, roads, which evoke the necessity of large-scale blasting work with the use of the latest technical means.

In so far as this blasting work has taken place and is taking place pretty frequently in various parts of the country, it is possible this might draw attention beyond the confines of the Soviet Union.

As for the production of atomic energy, Tass considers it necessary to recall that already on Nov. 6, 1947, Minister of Foreign Affairs of the USSR, V. M. Molotov, made a statement concerning the secret of the atom bomb when he declared that this secret was already long ago nonexistent.

This statement signified the Soviet Union already had discovered the secret of the atomic weapon and that it had at its disposal this weapon.

Scientific circles of the United States of America took this statement by V. M. Molotov for a bluff, considering that the Russians could not possess an atomic weapon earlier than the year 1952.

They however were mistaken, since the Soviet Union possessed the secret of the atomic weapon already in 1947.

As for the alarm that is being spread on this account by certain foreign circles, there are not the slightest grounds for alarm.

It should be pointed out that the Soviet government, despite the existence in its country of an atomic weapon, adopts and intends adopting in the future its former position in favor of the absolute prohibition of the use of the atomic weapon.

Concerning control of the atomic weapon, it has to be said that control will be essential in order to check up on fulfillment of a decision on the prohibition of production of the atomic weapon.

DID THE SOVIET BOMB COME SOONER THAN EXPECTED?

How accurate were the scientists in estimating the length of time needed by Russia to produce an atomic bomb? We here present their predictions, following these with the forecasts of the wartime administrators of the atomic bomb project.

The Atomic Scientists

LEO SZILARD

October, 1945

The excerpt below is taken from the *Hearings* before the House Committee on Military Affairs, October 18, 1945.

MR. CLASON: "I gathered from your statement that in a period of time, from 2½ years up, it may be possible for another country, given capable scientists and research people, plus the necessary elements, to develop the atom bomb just as the United States did during that time?"

DR. SZILARD: "I would say that it is more likely than not that another country will have it in six years. In two-and-one-half it is possible; it might not be probable."

December, 1945

On December 10, 1945, testifying before the Senate Special Committee on Atomic Energy, Dr. Szilard said:

"As far as the production of plutonium is concerned, which is described in the Smyth report, any competent mechanical or chemical engineer who spends some time thinking about the problem can see that no precision work is involved in the manufacture of plutonium.

"The design which we actually used did require rather narrow tolerances and high-class workmanship. This we could afford because we have this kind of workmanship in abundance.

"Naturally a country like Russia need not choose just this kind of design, but might prefer a design which does not require high precision work. The statement has been made before this committee by another witness that it requires high precision workmanship, such as can be provided only by a few countries, such as Switzerland, to make atomic bombs. As far as the production of plutonium is concerned such a statement would have no basis in fact.

"I am not making any statement about the separation of light uranium

or about the construction of the bomb; but it was indicated here in earlier testimony that it was not the bomb but the production of the fissionable material which is difficult. I flatly contradict that statement as far as plutonium is concerned. . . ."

October, 1949

Dr. Szilard's comments on the situation today appear in his article "Shall We Face the Facts" published in this issue of the *Bulletin* and in the scientists' protest against General Bedell Smith's statement that it will take Russia ten years to reach America's level of bomb production.

THE FRANCK COMMITTEE

June, 1945

On June 1, 1945, a committee of scientists¹ engaged in atomic bomb research at the Manhattan District laboratories at the University of Chicago, wrote a memorandum directed to the Secretary of War, Henry Stimson, in which they warned against the first use of the atomic bomb against Japan. In this memorandum, they said:

"In Russia, too, the basic facts and implications of nuclear power were well understood in 1940, and the experience of Russian scientists in nuclear research is entirely sufficient to enable them to retrace our steps within a few years, even if we should make every attempt to conceal them. Even if we can retain our leadership in basic knowledge of nucleonics for a certain time by maintaining secrecy as to all the results achieved on this and associated projects, it would be foolish to hope that this can protect us for more than a few years.

"If no efficient international agreement is achieved, the race for nuclear armaments will be on in earnest not

¹ This committee consisted of the following members: James O. Franck, Chairman, T. R. Hogness, Don Hughes, J. J. Nixon, E. Rabinowitch, Glenn Seaborg, J. C. Stearns, Leo Szilard.

² *Bulletin*, I (May 1, 1946), 2.

³ New York: McGraw-Hill Book Co., 1946.

later than the morning after our first demonstration of the existence of nuclear weapons. After this, it might take other nations three or four years to overcome our present head start, and eight or ten years to draw even with us if we continue to do intensive work in this field. This might be all the time we would have to bring about the relocation of our population and industry. Obviously, no time should be lost in inaugurating a study of this problem by experts."²

September, 1949

Professor Franck's comment on President Truman's announcement of the atomic explosion in the Soviet Union was:

"There has probably been no other occasion when we have been so unhappy that our prediction turned out to be right."

FREDERICK SEITZ AND HANS BETHE

1946

In *One World or None*,³ Professors Frederick Seitz and Hans Bethe wrote an article entitled, "How Close Is the Danger?" We quote from it:

"How long would it take for foreign countries, other than those involved in the British Commonwealth, to go through each of the three stages [of the development of the American Atomic Project] described above? The most important countries are undoubtedly Russia and France. . . . There is no doubt that . . . these countries have as much incentive to learn the facts about the atomic bomb as we ever had. . . . There can be no doubt that in the absence of international control of the atomic bomb, the Russians will try to develop the bomb in the shortest possible time and will devote a large share of their resources to this end.

"The United States and Great Britain undoubtedly contain a lion's share of the outstanding scientific talent of the world at the present time. . . . It would be difficult to argue that any other nation or combination of nations could have done the job faster *if it had started from the same point as we did in 1949*. On the other hand, it would be equally difficult to argue that no other country could have accomplished what we have in any period of time. In the first place, Russia and France both have men of outstanding ability. In the second place, it should be recognized that during Periods 1 and 2, in which the major portion of our advance was made, the principal work was in the hands of a small number of people; that is, a large number of good

men is not an essential factor. It is almost certain that the reason foreign nations did not proceed very far during the period between 1939 and 1945 . . . is because they could not or did not devote full attention to the matter.

"With respect to industrial capacity, many of the countries mentioned are far advanced. . . . Two billion dollars is by no means an excessive sum for any of them in comparison with their national income in, let us say, five years. Moreover, it will probably be far less expensive to repeat our development a second time.

"In coming to an estimate of the time required for a foreign nation to produce the atomic bomb, we must compare not only its resources with ours but also its starting point with our starting point. Any nation which begins working on the development of the atomic bomb at the present time starts with far more knowledge than we possessed in 1939.

"Consider first the advantages derived from knowledge that the bomb works. Much of the groping and speculation that was necessary during Period 1 is now unnecessary. The incentive for working very hard and on a large scale is provided immediately. The greatest effort of Period 1 in our development was devoted to obtaining scientific aid and financial backing, and all this time can now be saved. It is no longer necessary to depend upon the vision and judgment of the men of rare genius. It becomes possible to reduce the total time by starting all three phases of the program at once.

"The Smyth report provides detailed qualitative information on the general direction in which work can profitably be pushed. . . . Men of a far lower order of genius than those who planned the original work could undoubtedly fill in the missing pages as long as they are bolstered with the positive knowledge that the entire program is feasible. . . .

"What reduction in time results from all the knowledge now available? The greatest reduction will, of course, occur in the first period of development. This period required three years for our own groups who worked for a large part of this time without much financial support and without the knowledge of ultimate success. Having this support and the information of the Smyth report, it is difficult to imagine that men of the quality of Auger and Joliot in France and Kapitzka, Landau, and Frenkel in Russia would require as long as we to cover the same ground. Two years could easily be sufficient for this period.

"Regarding the second phase of the work, we can say with safety that there is now no risk in beginning the plans for pilot-plant operation at once. Detailed data for the production of such units may not be available at the moment. However—if, for instance, it is decided to produce plutonium rather than to separate U-235—it is known that uranium and graphite will have to be used in quantity. As a result, work on the preparation of these materials can begin at once. Perhaps a year after research in Period 1 has indicated the dimensions to be used in the pilot units, pilot units can be functioning.

"We come next to the question of large-scale manufacture. The proper sites for processing and purification of materials such as uranium and graphite can be carried along with the corresponding work for the pilot units. Some delay might be caused by the development of a chemical process to separate plutonium from uranium, because such a process can probably be found only after the pilot plants have produced sufficient material to work with. Moreover, at this stage, the high development of industry counts most, and other nations may require more time than we did because their industry is either in quality or in quantity behind ours. Even so, we are probably putting the figure high if we allow two years for this period, which is about twice as long as the time we required. Adding this to the three years estimated for the completion of Periods 1 and 2, we conclude that manufacture of plutonium (or Uranium-235, or both) can be under way in five years at the outside. It is clearly recognized, of course, that final manufacturing can be carried out only by a nation that has

suitable sources of uranium.

"Finally, we come to the design and construction of the bomb. The design can start very early in the program, probably relatively earlier than in our own development. Basic information obtained during the first two periods of development, through the pilot-plant stage, will provide the necessary knowledge about the bomb dimensions and methods that can be used to detonate it. This information should be available in about the fourth year, according to our estimate, so that the theory of the bomb will be clearly understood by the time the manufacturing units are beginning to yield the bomb material. With much of the bomb design done in advance, it is unlikely that there will be any major delay between manufacture of material and production of the finished product. A year is certainly an outside limit. Altogether we have, therefore, a total elapsed time of six years before bombs are available—slightly less than the time needed by us, in spite of the fact that we have added a year to take into account the supposedly lesser industrial development of other countries.

Many factors can enter to reduce the required time estimated here. For one thing, we have adopted all along the somewhat provincial viewpoint that the nation engaging in the work will be less effective than we have been, and this viewpoint may be entirely unjustified. Also, it should be kept in mind that work in one or another nation may already be much further along than external facts would indicate. Finally, it must never be forgotten that men of genius in other countries may devise methods which are much superior to our own and which would greatly reduce the time involved; our previous estimates have been based on the assumption that a foreign nation would simply copy our own pattern of attack.

"To summarize, then, we are led by quite straightforward reasoning to the conclusion that any one of several determined foreign nations could duplicate our work in a period of about five years. The skeptical or nationalistic individual might at this point decide that such reasoning should have little effect upon our foreign policy, because it is possible that in five years we shall be so far ahead of our present position that it will not matter whether or not a foreign nation has our present knowledge.

"There are two very grave objections to this viewpoint. In the first place, it is entirely possible that a foreign nation will actually be ahead of

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us in five years. In the second place, even if we have more powerful bombs than they, our preferred position will be greatly weakened. For it is an unfortunate fact that present bombs are of sufficient strength, if used effectively and in sufficient quantity, to paralyze our highly centralized industrial structure in the space of a single day. Any store of more powerful bombs in our arsenals would be of little value unless we could use them to prevent attack, and this seems a very remote possibility. The existence of such bombs might have an inhibiting effect in the sense that the enemy would fear reprisals. However, if history provides any lesson, it is that fear of reprisal has never prevented a war in which the chances for quick victory are as great as they would be if an adversary decided to strike rapidly and in full strength with atomic bombs."

October, 1949

Mr. Seitz's comments on the present situation appear on page 266 of this issue.

HAROLD C. UREY

November, 1945

In testifying before the Senate Special Committee on Atomic Energy, Professor Urey said:

"Of course, my opinion as to how long it would be is a guess on my part, but I think that we should not think of a longer time than about five years."

November, 1947

Following is an item from the *New York Times* of November 24, 1947:

"Dr. Harold C. Urey, American physicist, said today the United States will maintain a monopoly on the atom bomb "at least" until next fall, [1948] but after that Russia may have the weapon."

October, 1949

Dr. Urey's comment on the recent developments appear on page 265 of this issue.

HARRISON BROWN

1946

"All of us must recognize that in another three years the United States of America may not stand alone as a possessor of atomic bombs."⁴

IRVING LANGMUIR

November, 1945

"I put three years as about a minimum. That is I put three years down if Russia really seriously devotes her attention to it and starts on a big-scale production."⁵

⁴ *Must Destruction Be Our Destiny* (New York: Simon and Schuster, 1946).

⁵ Hearings before the Senate Committee on Atomic Energy.

The Wartime Administrators

VANNEVAR BUSH

December, 1945

Dr. Bush testifying before the Senate committee on December 3, 1945, said:

"I think she, [Russia] if she threw her full weight into it and if she imported freely those things which she does not herself manufacture adequately at the present time, then I think in four or five years she could have a plant in operation. On the other hand, if she did it relying entirely on her own resources and building those up as she proceeded, meaning by that that she would have to build plants to make the parts before she could use those parts, I think it would take them somewhat longer, it might take as long as twenty years, if she did the entire process that way.

"Now again, if she wishes to accelerate the process by making it very important, all-important, in her economy and if she makes the sacrifice in her standards of living in order to accomplish it at a maximum rate, it might shorten the time somewhat. I do not think she would choose to do it that way because it would be uneconomic."

LESLIE R. GROVES

November, 1945

On November 29, 1945, General Groves made the following statement before the Senate Special Committee:

"On the basic fundamental scientific

knowledge, other nations can catch up with us within a comparatively short period, say two years, and that assumes that other nations will make a really serious effort."

"I testified before the House committee, in response to a direct question on that point, that one nation could catch up and produce a bomb, if they did it in complete secrecy, probably within from fifteen to twenty years, more likely the latter. If they did it without secrecy and with a great deal of help from the United States and from England and Switzerland—and I say Switzerland because she is a manufacturer of precision machinery—it could be done in five to seven years, probably seven.

"Now that would be catching up with us to where we stand today. . . .

"I would also like to point out that when you say my guess may be in error—which I admit fully, naturally—it may be in error in the other direction. It may be that instead of this being twenty years it should be forty to fifty. A good many people who know and have been in some of these countries tell me they don't think they could ever build it, because they could never get, under their present system, men with courage enough to go in and make the mistakes that are necessary to produce such a thing as this."

September, 1949

General Groves's comments on the Soviet explosion appear on page 267 of this issue.

Scientists Give New Warning

The *New York Times* of September 28, 1949, quotes General Walter Bedell Smith, former ambassador to the Soviet Union, speaking of Russia's production of atomic bombs as follows:

"I said a month ago at the Governors' Conference in Colorado that they would probably test the bomb in a few months. However, I believe that it will take Soviet Russia at least ten years to get to the point of mass-production that we have now reached. I know that American techniques and industrial skills are far better than the best the Soviet can offer. There is no reason for the Soviet to reach, in less than ten years, the mass-production that we have reached now."

We, the undersigned, are aware of the problems involved in the large-scale production of atomic bombs. To our regret, we have to say that the above statement, attributed by the *New York Times* to General Bedell Smith, has no basis in fact.

(Signed)

HARRISON BROWN
JAMES FRANCK
JOSEPH E. MAYER

LEO SZILARD
HAROLD C. UREY

Chicago, Ill.
October 1, 1949

SHALL WE FACE THE FACTS?

Leo Szilard

Professor of Biophysics
University of Chicago



DOES anyone still remember how Wendell Willkie insisted that Russia and America ought to negotiate the settlement of all the post-war issues *before the war was over*? Today we are paying the penalty for having disregarded his counsel. When the war ended, Russia and America lost their common enemy; the stage was set for a Russian-American conflict. Could we have resolved this conflict if Roosevelt had lived? No one can say for certain.

Roosevelt died soon after the Yalta conference, and James Byrnes became Secretary of State. The Potsdam conference and the year that followed set the pattern of Russian-American relations. "Patience and Firmness" was the slogan. "Containment of Russia" was the policy.

General Marshall followed Mr. Byrnes as Secretary of State. By the time he took office our policy was moving in a groove. The Atlantic Pact was a necessary consequence of the policy initiated by Byrnes.

Whether this policy was "right" or "wrong" is not our topic here. But who can doubt today that it is totally inadequate to cope with the problem which now confronts the world?

HAVE to speak here of matters that lie within the scope of foreign policy. It is with reluctance that I speak of them. For the problem of peace cannot be solved within that narrow scope. The traditional aim of foreign policy is to prolong the peace; that is, to lengthen the interval between two wars. What is the use of postponing war if we know—as we know today—that it will be all the more terrible the later it comes? What we need is not a truce; what we need is peace.

But foreign policy got us into this mess, and foreign policy will have to get us out of it. We have to have a truce in order to have a chance to bid for peace.

Having built up a tremendous pressure around Russia, we dare not now suddenly release it lest we provoke an explosion. But somehow we shall have to find a path from containment to "con-

tainment." It will be a narrow path, and we had better watch our step.

Somewhere along that path we must find the truce that will give us a breathing spell. This paper is concerned only with the first leg of this journey.

MAKING THE PREMISES EXPLICIT

SOVIET Russia is a dictatorship no less ruthless perhaps than was Hitler's dictatorship in Germany. Does it follow that Russia will act as Hitler's Germany acted? I do not believe so.

Before the war Germany under Hitler, Italy under Mussolini and Soviet Russia were all dictatorships. Germany under Hitler remained Germany. She had been a militant nation before Hitler, and she will remain a militant nation after Hitler. It is not that the Germans want war, but rather that they like the type of organized action which characterizes a mighty nation at war. Italy under Mussolini remained Italy and would have kept her place if the other nations had shown determination to thwart her aspirations in Abyssinia. Soviet Russia is still Russia. Her policy is Russian policy first and Communist policy second. It is true that Russia dominates Rumania, Bulgaria, Hungary, and Czechoslovakia and that she is using the Communist parties in these countries to secure her rule. Yet she is not putting her foreign policy at the service of Communism, but rather she is using the Communists everywhere as instruments of her foreign policy. The rulers of Russia might very well believe that ultimately Capitalism will collapse and Communism will conquer the world; but that does not mean that Russia has a concrete plan for world conquest, that she has set a timetable for it, or that her day-to-day actions are guided by it.

To my mind anything that Russia has done in the past four years can be fully understood as the action of a nation pursuing her national interests, guided largely, though not solely, by strategic considerations.

These are my premises; my conclusions must necessarily stand or fall with them.

THE REAL CAUSE OF THE CONFLICT

WHAT is the real cause of the Russian-American conflict? Thucydides gave us the answer over 2,000 years ago when he wrote the *History of the Peloponnesian War*.

Neither Sparta nor Athens wanted war; yet they went to war with each other. They fought a terrible war which lasted for thirty years. Sparta and Athens did not want war, but they looked upon war between themselves as a possibility for which they had to prepare. Gradually more and more states in Greece became the allies of the one or the other. Finally there was no city-state of any importance left in Greece which was not allied either with Athens or with Sparta. Whenever there was an opportunity for Sparta to take a step which would improve her military position, Sparta took that step. Whenever Athens had such an opportunity, she made use of that opportunity. But every such step that Sparta took and every such step that Athens took was of necessity a step which made war more likely. Finally the time came when Sparta reluctantly and regretfully decided that war was inevitable and that she had better make preparations in earnest.

But when the Peloponnesian War finally broke out, it did not start as a war between Sparta and Athens. Thebes, an ally of Sparta, attacked Plataea, an ally of Athens. Thucydides writes: "There was an old quarrel between the two cities, and the Thebans, seeing that war was inevitable, were anxious to surprise the place while the peace lasted and before hostilities had actually broken out."

Some 300 Thebans entered Plataea, were defeated and taken prisoner, and the prisoners were later killed by the Plataeans. They were killed shortly before the herald sent from Athens arrived in Plataea bidding her to do no violence to the prisoners but to wait for instructions from Athens. Whether or not Plataea, in killing the Theban prisoners, actually violated an agreement and broke an oath is a question that

up to this time has not been settled. But the war between Sparta and Athens was on.

There is no reading more frightening and at the same time more sobering these days, than the *History of the Peloponnesian War*.¹

The statesmen of Athens tell us that the war was caused by Sparta, and the statesmen of Sparta tell us that the war was caused by Athens, for even in those times war was regarded by the civilized world as an evil and statesmen were anxious to avert the stigma of the aggressor. But Thucydides tells us that "the real reason for the war was that Athens' growing power threatened the security of Sparta."

Today the growing power of Russia threatens America's security, and the growing power of America threatens Russia's security. Is there a solution to their problem? A solution, if there is one, must, of necessity, lie outside of the pattern that governed the actions of Sparta and Athens. The policy outlined in this paper lies outside of that pattern. It requires a move that will make our strategic position more difficult in case of war, but at the same time it will greatly increase our chances of avoiding war. If America and Russia reject moves of this type, they will remain within the same pattern that governed the actions of the Greek city-states, and the result also will be the same.

WHAT ARE THE FACTS?

THE first question which we have to examine here is whether the Atlantic Pact can survive in its present structure. What are the facts?

The Russians have exploded one bomb. They might very well have exploded the only bomb they had. But the plant which was used to make that one bomb can turn out others. Within a very short time, one year perhaps, the Russians will have bombs in significant quantity—significant from the point of view of Western Europe. Will the Russians also have the means of delivering these bombs anywhere in Europe? Maybe they do not yet have V-2 type rockets developed to the stage where they can carry their atomic bombs. Maybe they do not yet have bombers fast enough to be able to get through without being intercepted. But clearly the time is not far off, when in case of war Russia will be in a position to deliver bombs anywhere in Western Europe and to deliver them in significant quantity.

If the time thus comes when Paris, Brussels, and Amsterdam face destruc-

tion within twenty-four hours after the outbreak of war, and when there is nothing that America can do to protect these cities from such a fate, we shall be faced with a situation which we did not envisage when the Atlantic Pact was concluded.

One might argue that the Atlantic Pact would still offer these countries greater security than they would have without it, since Russia, knowing that the United States would go to war if any of them were attacked, would be less likely to attack them. I am willing to let this argument pass for the moment. But can anyone seriously expect the French, Belgians, and the Dutch thus to accept, for the sake of a lessened probability of war, the absolute certainty that in case of war their cities will be utterly destroyed? Will it be much consolation for them to know that, some ten or fifteen years after their destruction, the United States may be victorious and might then help to rebuild their cities and to reconstruct their devastated country?

SHALL WE LET EUROPE PERISH?

WHAT then is the policy we ought to follow in the face of these realities? It seems to me that there is only one avenue of escape that is open to us, and this is what it is:

We ought to release those countries, who want to be released, from the obligations imposed upon them by the Atlantic Pact. This does not mean that we should abandon them to their fate. We could, for instance, enter into an agreement with France—to single out France for the moment—in which we unilaterally undertake the following obligations:

1. To go to war with Russia if Russia should attack or occupy France;
2. In case of war to respect the neutrality of France as long as her neutrality is respected also by Russia, except if America—in spite of having refrained from using atomic bombs first—is attacked with atomic bombs by Russia or some other nation;
3. To refrain from using atomic bombs, and strategic bombing of any kind, against France as long as no atomic bombs are produced in her territory, even though France may have been forced to surrender to Russia and even though America may be attacked by atomic bombs produced outside of France.

We could enter into similar agreements with Belgium, Holland, and cer-

tain other countries in Western Europe.

As long as America is pledged to go to war in case Russia should attack or occupy certain countries, America might have to go to war in fulfillment of such a treaty obligation. Such a war America could bring to a successful conclusion only by ultimately invading Russia. Even though America may not use atomic bombs first, nevertheless, large scale atomic bomb attacks against American cities might occur and result in public pressure on the Government to bring the war as fast as possible to a successful conclusion. The possibility of having to move American troops through Western Europe could not be excluded in such a contingency. In the absence of such an attack on us, we would be pledged to respect the neutrality of Western Europe as long as her neutrality was respected by Russia. Thus we could not count on moving troops through Western Europe and might have to invade Russia through the Balkans, the Near East, the Middle East, or the Far East.

This pledge should be given, but given in the full knowledge that it will greatly weaken our strategic position.

If we pledge ourselves to any nation to go to war in case she is attacked or occupied by Russia, we should make our pledge as unequivocal as possible. A pledge which we fully intend to honor but which leaves some doubts in the mind of a would-be aggressor may increase rather than decrease the danger of war.

We ought to make our pledge unequivocal, but we ought to make it for a period of time which is reasonably limited. For we cannot forever safeguard peace by precariously balancing it with pledges of this sort. In the long run protection against aggression cannot be based on fear of retaliation. It must be based on other motivations.

Within the pattern of the new policy outlined above, we would continue to give economic assistance to Western Europe. We ought even to encourage France, Belgium, and Holland to build up a reasonable amount of armaments of their own.

If these countries are armed, they could speak to Russia in times of peace as follows:

"There are no American soldiers on our territory, and there are no American installations here which would enable the United States to use our country as a military base against you in case of war. If America should try to

¹ A conveniently shortened version is published by the Henry Regnery Company, Chicago, for the Great Books Foundation.

violate our neutrality, we would resist her. We realize that physically you are in a position to destroy us. If you wish to occupy our country and confront us with an ultimatum, we might surrender rather than face destruction. But at the same instant, America will be at war with you."

In case America and Russia should get entangled in a war, France, Belgium, or Holland might speak to Russia as follows:

"America is pledged to respect our neutrality as long as you don't attack her with atomic bombs. If, in violation of her pledge, she should attempt to invade us, we shall resist her with force of arms. If you wish to violate our neutrality and confront us with an ultimatum, we might surrender rather than face the destruction of our cities. You could then occupy our country and attempt to defend it against an invasion by American troops. But this would be a most foolish thing to do, for you would be faced with the mounting resistance of our population and you would not be able to draw on our facilities for war production which we shall have destroyed. You are better off if you leave us alone; for if America attacks us in violation of her pledge, we are in a much better position to defend our country against an American invasion than you would be."

We have so far refrained from mentioning England. England is no less vulnerable to bombs than the rest of Western Europe. But after the fall of France, England decided to fight on in the face of the heaviest odds, and she emerged victorious. England might decide to hold out indefinitely as our ally and, with worse luck this time, perhaps suffer utter destruction in case of war.

Yet England, when she realizes that her geographical position as well as the concentration of her population in London and a few other large cities make her vulnerable beyond endurance, might also wish to be freed from the Atlantic Pact. If she does, we ought to lend her a helping hand rather than try to obstruct a development which is inevitable.

England, if reasonably armed, might speak to Russia much the same as could France, Belgium, and Holland. She might give Russia an assurance to resist, if necessary with force of arms, an American invasion.

By giving her consent and approval to a position of this sort which England might wish to take, America could effectively protect England from a Russian occupation. Clearly in case of a war

with America, Russia would have a strong incentive to leave England in a neutral position and thus bar the United States from using England as a base of military operations. It is true that by forcing England's surrender Russia would gain the advantage of being able to use British ports for launching submarines, but this would hardly be as important for Russia as depriving America of the advantage of using England as a base.

In the case of a Russian-American war, the neutrality of France, Belgium, and Holland might similarly be safeguarded against violation by Russia.

Whether or not Western Europe will perish depends on the attitude America will take on the issue of her neutrality. It is a fortunate coincidence that the neutralization of Western Europe is required for establishing a truce, for reasons of simple humanity and for reasons of expediency. From this triple coincidence, we may derive the hope that within a few years, the neutralization of Western Europe will be an accomplished fact.

THE NAVIES AND AIR FORCES OF WESTERN EUROPE

THE present arms race might continue for some time beyond the neutralization of Western Europe.

If it becomes necessary, we might ask Western Europe to make arrangements that will make certain that their navies and air forces shall not fall into Russian hands in any circumstances and that their facilities for war production shall not remain intact in case of a forced surrender to Russia. Such arrangements will require measures taken in peacetime which of necessity must be hurtful to the pride of these nations. The families of their naval and air force personnel, for instance, would have to be asked to reside outside of continental France, Holland, Belgium, and the British Isles. Their navies and air forces would have to be given a standing order to leave for American ports in disregard of any countermanding orders they might receive from their own governments under pressure of a Russian ultimatum. Today it may not be possible to raise such issues with our friends in Western Europe without giving offense; but later on, when they come to recognize the position in which they find themselves and become reconciled to it, the issue might well become the subject of discussions and of some formal or informal agreements.

NEUTRALIZING OTHER AREAS

The type of agreement suggested here for France, Holland, Belgium, and England might be extended to some other Western European nations, but it is impossible to provide an equal degree of protection for all of them. Take Norway, for instance: In peacetime America's pledge to go to war in case Russia should attack or occupy Norway might offer some protection to Norway. In case of a war with America, however, Russia might find it to her advantage to force Norway to surrender and to use Norwegian ports for the launching of submarines, particularly since America would hardly land an expeditionary force in Norway, as she might in England or France. It might very well be that in the case of a Russian-American war there would be just nothing that America could do to protect Norway from being forced to surrender or from being overrun. The same holds for some other countries which are similarly situated.

America cannot extend to countries in the Balkans, in the Near East, the Middle East, and the Far East, the same type of pledges which she may give to Western Europe. *But America could agree to neutralize all nations which are at present caught—as Western Europe is caught—between the strategic aspirations of Russia and America; i.e., America could renounce any intention which she may now have of preparing those nations in peacetime as bases for possible future military operations against Russia.*

CAN WE STOP THE ARMS RACE?

THE neutralization of all those nations which are at present caught between the strategic aspirations of America and Russia would remove the most important area of conflict in Russian-American relations. Yet if the arms race is permitted to continue, and particularly if Russian atomic bomb production increasingly threatens the security of the United States, war will ultimately become unavoidable.

Thus the question arises whether, within the pattern of the new policy outlined above, Russia and the United States could agree on some effective method of international control of atomic energy.

International inspection must be an integral part of any such agreement if it is to be effective. Would it have been in Russia's interest—in the conditions which existed during the past

four years—to enter into any agreement on atomic energy that provided for international inspection?

During these past four years we regarded Western Europe as a base for military operations against Russia in case of war. We were engaged in developing long-range rockets and long-range bombers, and we built a considerable fleet of such bombers. In case of war with Russia, it would have been of advantage to us to know the exact locations of the most essential Russian industrial installations, and it was therefore in Russia's interest to keep secret all information relating to them. Thus the Iron Curtain was Russia's most important strategic defense. Such strategic considerations may not have been the only reasons for Russia's desire to maintain secrecy, but they are valid and sufficient reasons nevertheless.

International inspection, if at all effective, is not compatible with the degree of secrecy which Russia was anxious to maintain in the postwar period and which she was successful in maintaining. In the conditions which existed during the past four years it would not have been in Russia's interest to enter into any agreement *limited to the control of atomic energy* which provided for international inspection.

But even if such an agreement had not provided for international inspection, it would still not have been in Russia's interest to be a party to it. Under conditions such as those that existed in the past four years, America could, by using Western Europe as a base, bring the war to Russia's territory. She could do this without atomic bombs, merely by using tanks, heavy guns, long-range bombers, and other conventional weapons. By agreeing to eliminate atomic bombs from national armaments, Russia would deprive herself of the one weapon which might enable her to bring the war to our territory. Russia can not carry the war to our territory by using long-range bombers carrying ordinary explosives, for, to her, the cost of such an operation would be prohibitive.

My thesis is that in these past four years Russia has steadfastly refused to consider any international agreement that would effectively eliminate atomic bombs because, under existing conditions, it was not in her interest to do so.

We must next turn our attention to an issue which is closely related: In the past four years the United States has steadfastly opposed a general reduction of armaments. Why?

Immediately after the war Western Europe was weak and could have been overrun by the Russian army at any time. This might be true even today. But we have been trying to create a situation in which within a few years, Western Europe would no longer be at the mercy of Russia. We hoped to achieve this by arming Western Europe and by maintaining a high level of armaments ourselves. We hoped that such a course of action would enable us to come to the help of Western Europe within a short period of time, if she were attacked by Russia, and that Western Europe would be able to hold out until our help arrived.

Had we then agreed to a substantial general reduction of armaments equally affecting all parties, we would have left Western Europe at the mercy of Russia's enormous reserve manpower. Then, in case of a Russian attack against Western Europe, it would have taken us a long time effectively to enter the war, and in the meantime Russian infantry could have overrun Western Europe.

But the way things are going at present, we may take it for granted that within a short period of time Western Europe will be irretrievably at Russia's mercy in the sense that, if she were attacked by Russia, we could not possibly bring her assistance fast enough to prevent her destruction or prevent her from being forced to surrender. We might then be prepared to neutralize Western Europe and to enter into an agreement with Russia that will stop the arms race by eliminating atomic bombs from national armaments, put limitations on the conventional types of arms, and provide for a substantial reduction of armaments in general.

Such an agreement would still leave Western Europe physically at the mercy of Russia's land armies. But this does not necessarily mean that Western Europe would be in danger of a Russian attack or invasion. Mexico is physically at the mercy of the United States, but she has no reason to fear that the United States will violate her integrity. The United States has not at present any motive for doing so and would hardly have any in the future unless Russia were to make an attempt to prepare Mexico as a base for future military operations against the United States.

While the level of armaments to be maintained by us in peacetime would still have to be adjusted to the level of armaments maintained by Russia and other nations, our ability to win a war would be determined by the level of our arms production during the war rather than by the level of our stockpile of

arms at the start of the war. Modern weapons get obsolete very fast. Keeping, in peacetime, a large stockpile of them is a useless drain on any nation's economy.

My thesis is that if we adjust our policy to reality and adopt the proposed new policy, the old reasons, which in the past four years led us to oppose general reduction of armaments, will no longer be valid. An over-all settlement of the outstanding postwar issues may thus become possible. Of these issues, the German problem is perhaps the most difficult. Its solution will remain difficult even if Russia and the United States were to seek it in perfect harmony. But if within the framework of the neutrality of Western Europe, a solution to the German problem and other postwar issues can be found, then general limitations of armaments and the elimination of atomic bombs from national armaments *will* be in the interest of Russia as well as of America.

What particular type of atomic energy control will then be acceptable to Russia?

In the past America pushed for international management of all atomic energy development, delegated to an agency of the United Nations and controlled by a majority vote of that body. This particular solution has some attractive features. But as long as the world remains divided between the allies of Russia and the allies of America, with our allies holding the majority in the United Nations, it will not be in Russia's interest to accept such a solution.

It is conceivable that if the present trend is reversed, countries which are not allies of either America or Russia, and are independent both economically and politically, may gradually become a majority in the United Nations. "International management" might then become acceptable to Russia.

In the meantime, some other form of effective atomic energy control will have to be adopted, if any control is to be adopted at all.

WOULD RUSSIA KEEP HER AGREEMENTS?

THE question will be asked, can Russia be trusted to keep any such agreement. The answer is simple. Russia can be trusted to keep an agreement as long as it remains in her interest to do so. We can make Russia keep an agreement if we maintain the conditions in which it will remain her interest to cooperate rather than to abrogate the

FOREWARNED — BUT NOT FOREARMED

Eugene Rabinowitch

Professor of Botany
University of Illinois

THE President's announcement of an atomic explosion somewhere in the Soviet Union has been followed by a chorus of reassuring official and unofficial comments. Americans have been advised to be calm, to lose no sleep, to avoid hysteria. They have been told that this development has been expected, and consequently accounted for in our military and political planning. We have heard that the expression, "atomic explosion" may not even signify the explosion of an atomic bomb; perhaps a great catastrophe, or an act of sabotage has occurred in a Soviet atomic plant.

Almost unanimously our statesmen and commentators have told us that although the Soviet scientists may have "cracked" (or as some have insinuated, their spies may have stolen) the secret of the atomic bomb, the Soviet Union does not possess another important secret—the know-how needed for production, which is available only to American industry.

Therefore, we are told, the Soviet production of atomic bombs has no chance of equalling ours, particularly since we have had a four-year head start. Even if a "Beria bomb" has been

exploded somewhere in the wastes of Siberia, our writers and commentators tell us it is an inferior product of amateur handiwork compared to the improved "Eniwetok bombs," now "mass-produced" in America.

Furthermore, it is said, the Soviet Union, although able to make reasonable facsimiles of our four-motored bombers which fell into its hands during the war, does not possess at the present time, and will not be able to develop in the near future, means of delivering atomic bombs to our shores. Their planes do not begin to match our present world-girdling, six-motored bombers or the jet bombers and rockets now on the drafting boards of our engineers.

Whistling in the dark to a different tune, some optimists suggest that now, with their "atomic inferiority complex" gone, the Soviet negotiators will prove more reasonable than before, and an agreement on effective atomic disarmament can perhaps be reached. Some, who ascribed to the American "take it or leave it" attitude at least a part of the blame for the deadlock of the UN atomic control negotiations, hope that the end of American monopoly will

make our attitude more pliable and thus facilitate agreement.

Scientists have never been, and cannot be now, intent on creating public hysteria. More than anyone else, they believe in a calm, rational approach to all problems confronting humanity. However, this approach has to begin with an open-minded appraisal of the facts; and, in taking stock of the situation, we can see little that justifies swallowing of the proffered bromides. We do not advise Americans that doomsday is near and that they can expect atomic bombs to start falling on their heads a month or a year from now; but we think they have reason to be deeply alarmed and to be prepared for grave decisions.

The fact that the present development has been freely predicted by no means proves that we are prepared to meet it. As metastasis in an incurable cancer, it may merely mean that the deadly disease is taking its foreseeable course unchecked.

WHATEVER the type of the Soviet atomic explosion, it signifies that the Soviet scientists and engineers have been able to produce more-than-critical amounts of fissionable elements (plutonium, or Uranium 235, or Uranium 233), since no smaller amount will explode under any conditions. In the (unlikely) case of an accidental explosion of an atomic explosives plant (such as a uranium-graphite production pile), an explosion of sufficient energy to cause

(Continued from preceding page)

agreement. It might even be wise to have a provision in the agreement giving both America and Russia the right to abrogate it upon giving due notice. This would at least serve as a reminder that no agreement between nations has much value unless it remains in the interests of the contracting parties to continue the agreement.

Let us remind ourselves at this point that what we are discussing here is a truce and not peace. We shall not have peace until we create a structure in which cooperation will be secured by incentives rather than precariously enforced by fear of punishment. We shall not have peace until we have an organized world community.

The Peloponnesian War occurred fifteen years after Sparta and Athens concluded a peace treaty that was to last for thirty. Russia and America will not fare any better if they conclude a truce and mistake it for a peace.

IHAVE tried to outline a policy which might lead to peace. It may have its faults. Almost certainly it could be improved upon. But what are the alternatives?

We could fight a preventive war against Russia, and there is little doubt that in the years to come this course will be advocated in public by a few, privately by many.

Alternatively, we could pursue the type of policy which we pursued the past four years. It is a policy of "neither war nor peace," and will obviously lead to war. It will probably lead to war when war will be at its worst.

If we want to find a way out of our present predicament, above all let us avoid self-righteousness. Let us not say that we made Russia a generous offer when we proposed the Baruch plan for international control of atomic energy. We would not fool anyone else, but we might fool ourselves. Many of us may

be inclined to say that the cause of all the postwar difficulties between America and Russia must be squarely laid at the doorstep of Russia. A "Thucydides" of the twentieth century to whom perhaps will fall the bitter task of writing the history of "The Downfall of the Atlantic Civilization" might see it differently.

In these past four years Russia and America were not at war. They did not exchange shots; but they traded blows. Who struck the first blow? Does it really matter? During the first World War the Hungarian writer, Karinthy, was sitting in his study attempting to write an essay on the causes of that war, when he was interrupted by a loud noise which seemed to come from the nursery. Opening the door, he saw his five children engaged in a free-for-all. "Who started this fight?" he said sternly to Peter, his eldest. "It all started," said Peter, "when David hit me back."

October 3, 1949

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Shall We Face the Facts?

by Leo Szilard

Does anyone still remember how Wendell Willkie insisted that Russia and America ought to negotiate the settlement of all the past-war issues before the war was over? Today we are paying the penalty for having disregarded his counsel. When the war ended Russia and America lost their common enemy; the stage was set for a Russian-American conflict. Could we have resolved this conflict if Roosevelt had lived? No one can say for certain.

Roosevelt died soon after the Yalta conference and James Byrnes became Secretary of State. The Potsdam conference and the year that followed set the pattern of Russian-American relations. "Patience and Firmness" was the slogan. "Containment of Russia" was the policy.

General Marshall followed Mr. Byrnes as Secretary of State. By the time he took office our policy was moving in a groove. The Atlantic Pact was a necessary consequence of the policy initiated by Byrnes.

Whether this policy was "right" or "wrong" is not our topic here. But who can doubt today that it is totally inadequate to cope with the problem which now confronts the world?

I have to speak here of matters that lie within the scope of foreign policy. It is with reluctance that I speak of them. For the problem of peace cannot be solved within that narrow scope. The traditional aim of foreign policy is to prolong the peace; that is, to lengthen the interval between two wars. What is the use of postponing war if we know--as we know today--that it will be all the more terrible the later it comes? What we need is not a truce; what we need is peace.

But foreign policy got us into this mess, and foreign policy will have to get us out of it. We have to have a truce in order to have a chance to bid for peace.

Having built up a tremendous pressure around Russia, we dare not now suddenly release it lest we provoke an explosion. But somehow we shall have to find a path from containment to "contentment." It will be a narrow path, and we had better watch our step.

Somewhere along that path we must find the truce that will give us a breathing spell. This paper is concerned only with the first leg of this journey.

Making the Premises Explicit

Soviet Russia is a dictatorship no less ruthless perhaps than was Hitler's dictatorship in Germany. Does it follow that Russia will act as Hitler's Germany acted? I do not believe so.

Before the war Germany under Hitler, Italy under Mussolini, and Soviet Russia were all dictatorships. Germany under Hitler remained Germany. She had been a militant nation before Hitler and she will remain a militant nation after Hitler. It is not that the Germans want war, but rather that they like the type of organized action which characterizes a mighty nation at war. Italy under Mussolini remained Italy and would have kept her place if the other nations had shown determination to thwart her aspirations in Abyssinia. Soviet Russia is still Russia. Her policy is Russian policy first and Communist policy second. It is true that Russia dominates Rumania, Bulgaria, Hungary, and Czecho-Slovakia and that she is using the Communist parties in these countries to secure her rule. Yet she is not putting her foreign policy at the service of Communism but rather she is using the Communists everywhere as instruments of her foreign policy. The rulers of Russia might very well believe that ultimately capitalism will collapse and Communism will conquer the world; but that does not mean that Russia has a concrete plan for world conquest, that she has set a timetable for it, or that her day-to-day actions are guided by it.

To my mind anything that Russia has done in the past four years can be fully understood as the action of a nation pursuing her national interests, guided largely, though not solely, by strategic considerations.

These are my premises; my conclusions must necessarily stand or fall with them.

The Real Cause of the Conflict

What is the real cause of the Russian-American conflict? Thucydides gave us the answer over 2000 years ago when he wrote the History of the Peloponnesian War.

Neither Sparta nor Athens wanted war; yet they went to war with each other. They fought a terrible war which lasted for thirty years. Sparta and Athens did not want war, but they looked upon war between themselves as a possibility for which they had to prepare. Gradually more and more states in Greece became the allies of the one or the other. Finally there was no city-state of any importance left in Greece which was not allied either with Athens or with Sparta. Whenever there was an opportunity for Sparta to take a step which would improve her military position, Sparta took that step. Whenever Athens had such an opportunity, she made use of that opportunity. But every such step that Sparta took and every such step that Athens took was of necessity a step which made war more likely. Finally the time came when Sparta reluctantly and regretfully decided that war was inevitable, and that she had better make preparations in earnest.

But when the Peloponnesian War finally broke out it did not start as a war between Sparta and Athens. Thebes, an ally of Sparta, attacked Plataea, an ally of Athens. Thucydides writes: "There was an old quarrel between the two cities, and the Thebans, seeing that war was inevitable, were anxious to surprise the place while the peace lasted and before hostilities had actually broken out."

Some 300 Thebans entered Plataea, were defeated and taken prisoner, and the prisoners were later killed by the Plataeans. They were killed shortly before the herald sent from Athens arrived in Plataea bidding her to do no violence to the prisoners but to wait for instructions from Athens. Whether or not Plataea in killing the Theban prisoners actually violated an agreement and broke an oath is a question

that up to this time has not been settled. But the war between Sparta and Athens was on.

There is no reading more frightening and at the same time more sobering these days than the History of the Peloponnesian War.*

The statesmen of Athens tell us that the war was caused by Sparta, and the statesmen of Sparta tell us that the war was caused by Athens, for even in those times war was regarded by the civilized world as an evil and statesmen were anxious to avert the stigma of the aggressor. But Thucydides tells us that "the real reason for the war was that Athens' growing power threatened the security of Sparta."

Today the growing power of Russia threatens America's security and the growing power of America threatens Russia's security. Is there a solution to their problem? A solution, if there is one, must of necessity lie outside of the pattern that governed the actions of Sparta and Athens. The policy outlined in this paper lies outside of that pattern. It requires a move that will make our strategic position more difficult in case of war but at the same time will greatly increase our chances of avoiding war. If America and Russia reject moves of this type, they will remain within the same pattern that governed the actions of the Greek city-states and the result also will be the same.

What Are the Facts?

The first question which we have to examine here is whether the Atlantic Pact can survive in its present structure. What are the facts?

The Russians have exploded one bomb. They might very well have exploded the only bomb they had. But the plant which was used to make that one bomb can turn out others. Within a very short time, one year perhaps, the Russians will have bombs in significant quantity--significant from the point of view of Western Europe.

Will the Russians also have the means of delivering these bombs anywhere in Europe? Maybe they do not yet have V-2 type rockets developed to the stage where

*A conveniently shortened version is published by the Henry Regnery Company, Chicago, for the Great Books Foundation.

they can carry their atomic bombs. Maybe they do not yet have bombers fast enough to be able to get through without being intercepted. But clearly the time is not far off when, in case of war, Russia will be in a position to deliver bombs anywhere in Western Europe and to deliver them in significant quantity.

If the time thus comes when Paris, Brussels, and Amsterdam face destruction within twenty-four hours after the outbreak of war, and when there is nothing that America can do to protect these cities from such a fate, we shall be faced with a situation which we did not envisage when the Atlantic Pact was concluded.

One might argue that the Atlantic Pact would still offer these countries greater security than they would have without it, since Russia, knowing that the United States would go to war if any of them were attacked, would be less likely to attack them. I am willing to let this argument pass for the moment. But can anyone seriously expect the French, Belgians, and the Dutch thus to accept for the sake of a lessened probability of war the absolute certainty that in case of war their cities will be utterly destroyed? Will it be much consolation for them to know that some ten or fifteen years after their destruction the United States may be victorious and might then help them to rebuild their cities and to reconstruct their devastated country?

Shall We Let Europe Perish?

What then is the policy we ought to follow in the face of these realities? It seems to me that there is only one avenue of escape that is open to us, and this is what it is:

We ought to release those countries, who want to be released, from the obligations imposed upon them by the Atlantic Pact. This does not mean that we should abandon them to their fate. We could, for instance, enter into an agreement with France--to single out France for the moment--in which we unilaterally undertake the following obligations:

- 1) to go to war with Russia if Russia should attack or occupy France;

- 2) in case of war to respect the neutrality of France as long as her neutrality is respected also by Russia, except if America--in spite of having refrained from using atomic bombs first--is attacked with atomic bombs by Russia or some other nation;
- 3) to refrain from using atomic bombs and strategic bombing of any kind against France as long as no atomic bombs are produced in her territory even though France may have been forced to surrender to Russia and even though America may be attacked by atomic bombs produced outside of France.

We could enter into similar agreements with Belgium, Holland, and certain other countries in Western Europe.

As long as America is pledged to go to war in case Russia should attack or occupy certain countries, America might have to go to war in fulfillment of such a treaty obligation. Such a war America could bring to a successful conclusion only by ultimately invading Russia. Even though America may not use atomic bombs first, nevertheless large scale atomic bomb attacks against American cities might occur and result in public pressure on the Government to bring the war as fast as possible to a successful conclusion. The possibility of having to move American troops through Western Europe could not be excluded in such a contingency. In the absence of such an attack on us, we would be pledged to respect the neutrality of Western Europe as long as her neutrality was respected by Russia. Thus we could not count on moving troops through Western Europe and might have to invade Russia through the Balkans, the Near East, the Middle East, or the Far East. The pledge should be given, but given in the full knowledge that it will greatly weaken our strategic position.

If we pledge ourselves to any nation to go to war in case she is attacked or occupied by Russia, we should make our pledge as unequivocal as possible. A pledge which we fully intend to honor but which leaves some doubts in the mind of a would-be aggressor may increase rather than decrease the danger of war.

We ought to make our pledge unequivocal, but we ought to make it for a limited period of time, ^{which is reasonable.} For we cannot forever safeguard peace by pre-

cariously balancing it with pledges of this sort. In the long run protection against aggression cannot be based on fear of retaliation. It must be based on other motives.

Within the pattern of the new policy outlined above, we would continue to give economic assistance to Western Europe. We ought even to encourage France, Belgium and Holland to build up a reasonable amount of armaments of their own. If these countries are armed, they could speak to Russia in times of peace as follows:

"There are no American soldiers on our territory and there are no American installations here which would enable the United States to use our country as a military base against you in case of war. If America should try to violate our neutrality, we would resist her. We realize that physically you are in a position to destroy us. If you wish to occupy our country and confront us with an ultimatum, we might surrender rather than face destruction. But at the same instant, America will be at war with you."

In case America and Russia should get entangled in a war, France, Belgium or Holland might speak to Russia as follows:

"America is pledged to respect our neutrality as long as you don't attack her with atomic bombs. If in violation of her pledge she should attempt to invade us, we shall resist her with force of arms. If you wish to violate our neutrality and confront us with an ultimatum, we might surrender rather than face the destruction of our cities. You could then occupy our country and attempt to defend it against an invasion by American troops. But this would be a most foolish thing to do, for you would be faced with the mounting resistance of our population and you would not be able to draw on our facilities for war production which we shall have destroyed. You are better off if you leave us alone; for if America attacks us in violation of her pledge, we are in a much better position to defend our country against an American invasion than you would be."

We have so far refrained from mentioning England. England is no less vulnerable to bombs than the rest of Western Europe. But after the fall of France, England decided to fight on in the face of the heaviest odds, and she emerged victorious. England might decide to hold out indefinitely as our ally and, with worse luck this time, perhaps suffer utter destruction in case of war.

Yet England, when she realizes that her geographical position as well as the concentration of her population in London and a few other large cities make her vulnerable beyond endurance, might also wish to be freed from the Atlantic Pact. If she does, we ought to lend her a helping hand rather than try to obstruct a development which is inevitable.

England if reasonably armed might speak to Russia much the same as could France, Belgium and Holland. She might give Russia an assurance to resist, if necessary with force of arms, an American invasion.

By giving her consent and approval to a position of this sort which England might wish to take, America could effectively protect England from a Russian occupation. Clearly in case of a war with America, Russia would have a strong incentive to leave England in a neutral position and thus bar the United States from using England as a base of military operations. It is true that by forcing England's surrender Russia would gain the advantage of being able to use British ports for launching submarines; but this would hardly be as important for Russia as depriving America of the advantage of using England as a base.

In the case of a Russian-American war, the neutrality of France, Belgium, and Holland might similarly be safeguarded against violation by Russia.

Whether or not Western Europe will survive the next ten years depends on the attitude America
/will take on the issue of her neutrality. It is an extraordinarily fortunate coincidence that the neutralization of Western Europe is required for establishing a truce for reasons of simple humanity and for reasons of expediency. From this coincidence we may derive the hope that within a few years it will be an accomplished fact.

The Navies and Air Forces of Western Europe

The present arms race might continue for some time beyond the neutralization of Western Europe. If it becomes necessary, we might ask Western Europe to make arrangements that will make certain that their navies and air forces shall not fall into Russian hands in any circumstances and that their facilities for war production shall not remain intact in case of a forced surrender to Russia. Such arrangements would require measures taken in peacetime which of necessity must be hurtful to the pride of these nations. The families of their naval and air force personnel, for instance, would have to be asked to reside outside of continental France, Holland, Belgium, and the British Isles. Their navies and air forces would have to be given a standing order to leave for American ports in disregard of any countermanding orders they might receive from their own governments under pressure of a Russian ultimatum. Today it may not be possible to raise such issues with our friends in Western Europe without giving offense; but later on, when they come to recognize the position in which they find themselves and become reconciled to it, the issue might well become the subject of discussions and of some formal or informal agreements.

Neutralizing Other Areas

The type of agreement suggested here for France, Holland, Belgium, and England might be extended to some other Western European nations, but it is impossible to provide an equal degree of protection for all of them. Take Norway, for instance. In peacetime America's pledge to go to war in case Russia should attack or occupy Norway might offer some protection to Norway. In case of a war with America, however, Russia might find it to her advantage to force Norway to surrender and to use Norwegian ports for the launching of submarines, particularly since America would hardly land an expeditionary force in Norway as she might in England or France. It might very well be that in the case of a Russian-American war there would be just nothing that America could do to protect Norway from being forced to surrender or from being overrun. The same holds for some other countries which are

similarly situated.

America cannot extend to the countries in the Balkans, the Near East, the Middle East, or the Far East the same type of pledges which she may give to Western Europe. But America could agree to neutralize all nations which are at present caught--as Western Europe is caught--between the strategic aspirations of Russia and America; i.e. America could renounce any intention which she may now have of preparing those nations in peacetime as bases for possible future military operations against Russia.

Can We Stop the Arms Race?

The neutralization of all those nations which are at present caught between the strategic aspirations of America and Russia would remove the most important area of conflict in Russian-American relations. Yet if the arms race is permitted to continue and particularly if Russian atomic bomb production increasingly threatens the security of the United States, war will ultimately become unavoidable.

Thus the question arises whether within the pattern of the new policy outlined above, Russia and the United States could agree on some effective method of international control of atomic energy.

International inspection must be an integral part of any such agreement if it is to be effective. In the conditions which existed during the past four years, would it have been in Russia's interests to enter into any agreement on atomic energy that provided for international inspection?

During these past four years we regarded Western Europe as a base for military operations against Russia in case of war. We were engaged in developing long-range rockets and long-range bombers, and we built a considerable fleet of such bombers. In case of war with Russia, it would have been of advantage to us to know the exact locations of the most essential Russian industrial installations, and it was therefore in Russia's interests to keep secret all information relating to them. Thus the Iron Curtain was Russia's most important strategic defense. Such strategic considerations may not have been the only reason for Russia's desire to maintain

secrecy, but they are valid and sufficient reasons nevertheless.

International inspection if at all effective is not compatible with maintaining the degree of secrecy which Russia was anxious to maintain in the post-war period and which she was successful in maintaining. In the conditions which existed during the past four years it would not have been in Russia's interests to enter into any agreement limited to the control of atomic energy which provided for international inspection.

But even if such an agreement had not provided for international inspection, it would still not have been in the interests of Russia to be a party to it. Under conditions such as those that existed in the past four years, America, by using Western Europe as a base, could bring the war to Russia's territory. She could do this without atomic bombs, merely by using tanks, heavy guns, long-range bombers and other conventional weapons. By agreeing to eliminate atomic bombs from national armaments, Russia would deprive herself of the one weapon which might enable her to bring the war to our territory. Russia cannot carry the war to our territory by using long-range bombers carrying ordinary explosives, for, to her, the cost of such an operation would be prohibitive.

My thesis is that in these past four years, Russia has steadfastly refused to consider any international agreement that would effectively eliminate atomic bombs because under existing conditions it was not in her interests to do so.

We must next turn our attention to an issue which is closely related: In the past four years the United States has steadfastly opposed a general reduction of armaments. Why?

Immediately after the war Western Europe was weak and could have been overrun by the Russian army at any time. This might be true even today. But we have been trying to create a situation in which, within a few years, Western Europe would no longer be at the mercy of Russia. We hoped to achieve this by arming Western Europe and by maintaining a high level of armaments ourselves. We hoped that such a course of action would enable us to come to the help of Western Europe within a short period

of time if she were attacked by Russia, and that Western Europe would be able to hold out until our help arrived.

Had we then agreed to a substantial general reduction of armaments equally affecting all parties, we would have left Western Europe at the mercy of Russia's enormous reserve manpower. Then in case of a Russian attack against Western Europe, it would have taken us a long time effectively to enter the war, and in the meantime Russian infantry could have overrun Western Europe.

But the way things are going at present, we may take it for granted that within a short period of time Western Europe will be irretrievably at Russia's mercy, in the sense that, if she were attacked by Russia, we could not possibly bring her assistance fast enough to prevent her destruction or prevent her from being forced to surrender. We might then be prepared to neutralize Western Europe and to enter into an agreement with Russia that will stop the arms race by eliminating atomic bombs from national armaments, put limitations on the conventional types of arms, and provide for a substantial reduction of armaments in general.

Such an agreement would still leave Western Europe physically at the mercy of Russia's land armies. But this does not necessarily mean that Western Europe would be in danger of a Russian attack or invasion. Mexico is physically at the mercy of the United States, but she has no reason to fear that the United States will violate her integrity. The United States has not at present any motive for doing so and would hardly have any in the future, unless Russia were to make an attempt to prepare Mexico as a base for future military operations against the United States.

While the level of armaments to be maintained by us in peacetime would still have to be adjusted to the level of armaments maintained by Russia and other nations, our ability to win a war would be determined by the level of our arms production during the war rather than by the level of our stockpile of arms at the start of the war. Modern weapons get obsolete very fast. Keeping in peacetime a large stockpile of them is a useless drain on any nation's economy.

My thesis is that if we adjust our policy to reality and adopt the proposed new policy, the old reasons, which in the past four years led us to oppose general reduction of armaments, will no longer be valid.

An overall settlement of the outstanding post-war issues may thus become possible. Of these issues, the German problem is perhaps the most difficult. Its solution will remain difficult even if Russia and the United States were to seek it in perfect harmony.

But if within the framework of the neutrality of Western Europe, a solution to the German problem and other post-war issues can be found, then general limitations of armaments and the elimination of atomic bombs from national armaments will be in the interest of Russia as well as America.

What particular type of atomic energy control will then be acceptable to Russia?

In the past America pushed for international management of all atomic energy developments delegated to an agency of the United Nations and controlled by a majority vote of that body. This particular solution has some attractive features. But as long as the world remains divided between the allies of Russia and the allies of America, with our allies holding the majority in the United Nations, it will not be in Russia's interest to accept such a solution.

It is conceivable that if the present trend is reversed, countries which are not allies of either America or Russia, and are independent both economically and politically may gradually become a majority in the United Nations. "International management" might then become acceptable to Russia.

In the meantime some other form of effective atomic energy control will have to be adopted, if any control is to be adopted at all.

Would
Will Russia Keep Her Agreements?

The question will be asked, can Russia be trusted to keep any such agreement. The answer is simple. Russia can be trusted to keep an agreement as long as it remains in her interest to do so. We can make Russia keep an agreement if we maintain the conditions in which it will remain her interest to cooperate rather than to abrogate the agreement. It might be even wise to have a provision in the

agreement giving both America and Russia the right to abrogate upon giving due notice. This would at least serve as a reminder that no agreement between nations has much value unless it remains in the interests of the contracting parties to continue the agreement.

Let us remind ourselves at this point that what we are discussing here is a truce and not peace. We shall not have peace until we create a structure in which cooperation will be secured by incentives rather than precariously enforced by fear of punishment. We shall not have peace until we have an organized world community.

The Peloponnesian War occurred fifteen years after Sparta and Athens concluded a peace treaty that was to last for thirty. Russia and America will not fare any better if they conclude a truce and mistake it for peace.

I have tried to outline a policy which could lead to peace. It may have its faults. There is little doubt that it could be improved upon. But what are the alternatives?

We could fight a preventive war against Russia, and there is little doubt that in the years to come this course will be advocated in public by a few, privately by many.

Alternatively, we could pursue the type of policy which we pursued the past four years. It is a policy of "neither war nor peace", and will obviously lead to war. It will probably lead to war when war will be at its worst.

If we want to find a way out of our present predicament, above all let us avoid self-righteousness. Let us not say that we made Russia a generous offer when we proposed the Baruch plan for international control of atomic energy. We would not fool anyone else but we might fool ourselves. Many of us may be inclined to say that the cause of all the post-war difficulties between America and Russia must be squarely laid at the doorstep of Russia. A "Thucydides" of the Twentieth Century to whom perhaps will fall the bitter task of writing the history of "The Downfall of the Atlantic Civilization" might see it differently.

In these past four years Russia and America were not at war. They did not exchange shots; but they traded blows. Who struck the first blow? Does it really matter? During the first World War the Hungarian writer, Karinthy, was sitting in his study attempting to write an essay on the causes of that war, when he was interrupted by a sudden loud noise which seemed to come from the nursery. Opening the door, he saw his five children engaged in a free-for-all. "Who started this fight?" he said sternly to Peter, his eldest. "It all started," said Peter, "when David hit me back."