

Must live
with the bomb

①
MEMORANDUM

by Leo Szilard

April 3, 1958. ①

①
Academician Topchiev in his address entitled "Modern International Situation and Tasks of Scientists", which he presented to us on April 2, 1958, explained to us why it is necessary to have a Summit Meeting in the near future, and he suggested that we scientists should urge the American government to agree to such a meeting. I believe that it is quite clear that a Summit Meeting of the kind which Professor Topchiev described has ^{is} now become essential if we wish to make progress towards peace. (12)

What stands in the way of such a summit meeting as far as the American government is concerned? I believe that America and her allies have so far not been able to agree among themselves what to propose at the summit meeting, and I further suspect that there is ~~even~~ a division on this issue even within the American government itself.

(2)

was a first step / henceforth

A

the American and Russian governments could agree that during the protracted negotiations which we may expect to take place between Russia and America, whenever a proposal is put forward by one of these two governments, no officer of the other government shall publicly question whether the proposal was put forward in good faith and sincerity, or express doubt concerning the sincere desire of either government for genuine peace.

INSERT III

Present Am. military policy

What is, at present, American policy with respect to the bomb? As far as I can gather, the present American policy is to use atomic bombs locally, if there is a conflict between nations which leads to a resort to arms, and if America intervene and Russia/militarily on opposite sides. This means that American troops would use tactical atomic bombs in combat and, in addition, use atomic bombs to disrupt the communications of their enemy to a depth of perhaps several hundred miles beyond the pre-war territory which America has resolved to defend. Such a war must necessarily end in either of two ways. Either a conflict will spread and end in an all-out atomic catastrophe, or else the war will continue to be localized and will go on until that area is completely destroyed, with all buildings in ruins and a large fraction of the civilian population dead. At that point, either America or Russia could perhaps withdraw from the fighting without explicitly conceding defeat.

What I have just described to you is, I believe, the military policy that is supported by Edward Teller, and those others who advocate it. I believe that if this policy is adopted by America, future local wars would be fought with small bombs - if they are fought at all - and that the large bombs will remain in reserve, and remain unused, because either side will fear retaliation in kind. I believe that this hope is not well founded.

We may rule out, for the purpose of the present discussion, the possibility of a wanton attack by America against Russia, or by Russia against America. Therefore, we may regard as the greatest peril in the present circumstances the possibility that a war might break out somewhere, perhaps between two small nations, that Russia and America might militarily intervene on opposite sides, and that such a war might be fought with atomic bombs in the manner spelled out above.

II. Russia has proposed - as a first step towards eliminating

3 the danger that the bomb represents to the world - that the use of the bomb
be outlawed without further delay. Clearly, as far as Russia and America alone
are concerned, the proposal is equivalent to the proposal that both Russia and
America should unilaterally declare that in ~~every~~ case of an outbreak of war, in
which they might be forced to intervene, they will not resort to the use of
atomic bombs, either as a strategic weapon, or ~~tactically~~ ^{tactically} in combat, unless such
bombs are first used against them by ~~another~~ ^{the} party. ~~The~~ The advantage of this

II Russian proposal lies in the fact that it could be put into effect without further
delay, and as long as it is observed by both sides, it would prevent the outbreak
of an atomic war and thereby safeguard the world against an all-out atomic
catastrophe to which such a war might lead. ~~The~~ ^{allowing} The American government has explicitly

rejected this proposal and has stated that she intends to use atomic weapons,
at least as tactical weapons in combat, if war should come as a result of ~~a~~
Russian aggression, and just what constitutes aggression would presumably be

unilaterally determined by America alone. ~~The~~ ^{*} The American government has explained
her negative attitude in this matter by saying that, in certain areas of the world,
Russia ~~is~~ may have a great superiority in manpower equipped with conventional weapons,
and America would therefore be better off, in case of an armed ~~conflict~~ ^{or} conflict
in these areas, if she were free to use atomic weapons ~~tactically~~ ^{tactically} in ~~combat~~ ^{combat}.
It is not clear to me why, in the long run, Russia should not, in these specific
areas, attain the same superiority also, if

> The British government has ~~two~~ ^{two} ~~see~~ ^{even} ~~gone~~ ^{gone}
recently as far

~~INSERT 1. (Page 2)~~

The British government - ^{standing} as far as I understand on its own - has recently ^{afforded} gone far beyond the American position, with respect to the possible use of bombs in warfare, by declaring in a British White Paper that England would resort to strategic bombing by means of hydrogen bombs in case of war, even though Russia would otherwise be willing to limit such a war to conventional weapons. Inasmuch as England would have to count on Russian retaliation in kind, the British position amounts to a threat of murder and suicide. Partly because I propose to limit myself, in this paper, to the discussion of rational policies, and the policy proclaimed in the British White Paper is not among them, and partly because I have discussed this problem in a "Letter to the Editor", which appeared in "The Times", of London, on March 22nd, (a copy of which is attached), I shall disregard, in this paper, this British policy as one which is not likely to persist if rational considerations prevail.

omit
B

The American government has explained her negative attitude with respect to the Russian proposal to prohibit the use of atomic weapons in war, in rational terms, ^{on} the following basis: In certain areas of the world, where America is committed to maintain the status quo, but where America and Russia may not be in full control of the situation, there might be a resort to arms - as was the case, for instance, when war broke out between North and South Korea. Both America and Russia might then be forced to intervene on opposite sides. In some of these areas, where America is committed to maintain the status quo, Russia has a great superiority in manpower and is in a more favourable geographical position, ^{and} so that, if only conventional weapons were used, ~~the~~ America were barred by her pledge to refrain from the use of atomic weapons in combat, she might not be able to put up an effective resistance against a forcible change of the status quo.

Moreover

Moreover, if America ~~had given~~ ^{were to} the pledge proposed by Russia, she would have

~~had~~ to maintain a double military establishment; one based on conventional weapons, and the other based on atomic weapons, in order to be in a position to shift ~~immediately~~ ^{rapidly} to the use of atomic weapons if atomic weapons were ~~used~~ ^{to be used} against her, in violation of the pledges given.

~~Had America accepted Russia's proposal to prohibit atomic weapons, she would have given up a temporary advantage. ^{yet} I am inclined to think that it would have been wiser to accept the Russian proposals. America may have ^{sacrificed} as she has done so often before - the attainment of a desirable objective because she was not willing to give up a temporary advantage.~~

We must ask ourselves whether there is an alternative to the prohibition of atomic bombs that Russia proposed, which might be acceptable to America and which would essentially accomplish what the Russian proposal would have accomplished; i.e. ~~to prevent~~ ^{the prevention of} local conflicts from leading to an all-out atomic war.

I believe ~~that~~ ^{now} we ought to propose to the American government ~~to~~ ^{that she} give a pledge, which will go halfway towards the pledge demanded by the Russians, and which ~~she~~ ^{she} America could give without incurring ^{all} the disadvantages ~~involved for her in the~~ ^{she} pledge proposed by Russia ^{would have involved.}

4 I believe that from a long-term point of view it would have been wiser for America to accept the Russian proposal to prohibit atomic weapons, even though it would have meant that America would sacrifice the short-term advantage, which - for just a very few years - she may have by being ~~fx~~ free to use atomic weapons in combat in local conflicts.

However, because experience has shown that the American government, perhaps because of its complexity, is strongly inhibited from accepting a temporary disadvantage for the sake of ultimately obtaining what she regards as a highly desirable goal, I would consider it useless to try to persuade the American government to accept the ban on atomic weapons demanded by Russia.

I propose, instead, that we try to convince the American government that she ought to make a counter-proposal which goes a long way to meeting the Russian demand. I suggest that we propose that the American government speak to the Russian government as follows:

was have
America has *she has done so*
often before *over the attainment*
~~However~~ *at a probably desirable objective*
because she was unwilling to sacrifice
Since ~~x~~ experience has shown that the American government finds it very difficult to sacrifice any short-term advantage for the sake of promoting the attainment of a long-range goal (- which the American government, in accordance with other governments, regards as highly desirable,) we scientists must now ask ourselves whether we can find a solution to the problem of the use of atomic bombs in combat which, for practical purposes, accomplishes the main aim of the Russian proposal; i.e. to prevent local conflict from leading to an all-out atomic war, while it does not demand from America that she give up the short-term advantage which she may now have *or what to be more*

the advantage
she thinks she may
now have has.

*where
old's address
large*

~~and therefore I suspect that, in rejecting the Russian proposal, America has, as she had done so often before, sacrificed the attainment of a desirable objective for the sake of a temporary advantage of short duration. But since the American government apparently finds it very difficult to sacrifice any short-term advantage, we must ask ourselves whether we can find a solution of this issue which, for practical purposes, accomplishes the aim that the Russian proposal set out to accomplish, while it does not demand from America to give up a short-term advantage.~~

I believe that, in these circumstances, we ought to propose to the American
that she
government ~~to~~ make a unilateral pledge and base her military policy on this pledge.

Such a pledge ~~does~~ ^{would} not represent a solution of the problem of the bomb, but it
could be put into effect at once, and replaced ^{or} ~~as~~ ^{by another pledge} as soon as it is possible to
develop a more ~~via~~ satisfactory policy.

I believe there is a satisfactory solution to this problem,

and I was greatly pleased when, upon arriving in Quebec, I found that Colonel Leghorn had arrived at the same conclusion. I was both pleased and reassured, because ^{as} Colonel Leghorn knows much more about military matters than I do, his judgement is ^{much} surer than mine on the military aspects which are involved.

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VI

Both Colonel Leghorn and I start out with the assumption that neither America, nor Russia, have the slightest intention of changing the existing boundaries of sovereign nations by armed action. Therefore, if there should be ~~an~~ a conflict anywhere in the world, which leads to a resorting to arms in which America and Russia might be forced to intervene on opposite sides, neither America, nor Russia, ~~could~~ ^{should} have any objection to a limited prohibition of the use of atomic bombs in combat which favours the defenders, and therefore makes a forcible territorial change more difficult. ~~What~~ ^{Therefore} Colonel Leghorn and I propose is a unilateral pledge, ~~both by Russia and America~~, that in case of an armed conflict in which they intervene, they will not use atomic bombs, nor permit the use of atomic bombs by their allies, except within the boundaries of the

territory that has been invaded by the enemy. Let me illustrate what I mean by an example. Had ~~these~~ ^{America and Russia made such unilateral declarations} unilateral declarations been in force at the time of the British invasion of Egypt, Russia would have been within her rights to use atomic bombs against British troops on Egyptian soil, and against British

~~herself~~ ^{imposes the same restriction upon}

unilateral

territory that has been invaded by the enemy - as long as Russia imposes the same restriction upon herself.

Let me illustrate what I mean by citing an example. Had America and Russia made such ~~a~~ unilateral declarations, say, two years ago, these declarations would have been in force at the time of the British invasion of Egypt and Russia would have been within her rights to use atomic bombs ~~against~~ against British troops on Egyptian soil, and against British

ships in Egyptian territorial waters. Or to give another example: should, in the future, a war break out somehow in Korea in circumstances which force America to intervene on the side of South Korea, and Russia to intervene on the side of ~~North~~ North Korea, the South Korean army may retire south of the boundary along the 30th parallel to a depth of, perhaps, 30 miles or more. If the North Korean army then masses within this 30 mile zone in an attempt to break through the South Korean lines, America would be within her rights to use atomic bombs in combat against the North Korean army massed on South Korean territory, but she would not be within her rights to use atomic bombs against the supply centres, or airfields, or troops located north of the 30th parallel. Similarly, should South ~~Korean~~ Koreans penetrate into North Korea, the North Koreans might withdraw north of the 30th. parallel and use atomic bombs against South Korean or American troops massed for an attempted break through in the zone, but they would not be within their rights to use atomic bombs against any objectives located south of the 30th parallel. It is wholly irrelevant, under this system, who the aggressor is supposed to be. All that matters is who has penetrated into the pre-war territory of the other nation. Clearly, this rule favours the defence, rather than offence, makes an attempt to penetrate into the other country exceedingly costly, and prevents the spreading of the atomic war, as long as the rule is observed by both parties.

as a first step towards the establishment of peace
The rule could be established at once, by unilateral declarations of Russia and America, and I believe that we American scientists should urge our government to issue such a declaration without delay. Indeed, I can see no valid objection that the American government could raise against this proposal, and I see every reason why she should abide by the rule which ~~she~~ *we have* imposed upon herself, as long as Russia abides by the same rule, which she may impose upon herself, should there be a resort to arms which forces Russia and America to intervene on opposite sides.

could make the unilat. decl. here proposed at once
one must a declaration has been made

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As a first step towards the stabilization of peace, America could make the unilateral declaration, here proposed, at once, and I believe we ought to urge our government to make such a declaration without undue delay. I can see no valid objection against this proposal, and once such a declaration has been made I see good reasons why we should abide by the rule which we have imposed upon ourselves, (as long as Russia abides by the same rule), should some nations resort to arms and should Russia and America find themselves forced to intervene on opposite sides.

Next, our greatest concern must be to avoid the occurrence of conflicts which may force America and Russia to intervene on opposite sides.

Assuming that Russia and America will both make such a ~~unilateral~~

~~unilateral declaration, our next ^{immediate} concern must be to minimize the chances that, ~~in~~ ^{probable to be at} in a local conflict, America and Russia may be forced to intervene on opposite sides, ^{while we} (and to maximize the probability that, in case they are forced to intervene, they will be satisfied with defending the status quo and will not be tempted to violate their pledge to limit the use of atomic bombs to their use in combat on their own side of ~~the pre-war~~ the pre-war boundary),~~

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At the end of the last war, it was generally believe that -- as long
as the Great Powers act in concert with each other -- the United Nations
Organization may be able to guarantee the security of the smaller nations
and may make it unnecessary, as well as impossible, for them to go to war
with each other. Attempts to use the United Nations in the past ten years
for ~~the~~ purposes other than those for which it was designed have weakened
this organization, but ^{I believe} -- we hope -- they have not damaged it beyond repair.
^{believe} We hope that it may be possible to restore the United Nations to its original
function once there is a political settlement between the Great Powers, at least
in the narrow sense in which ^{I shall} we use the term, "Political settlement".

*Pol. settle
needed*

ms 3
just as soon as possible

I think that to accomplish this objective, we must, ~~without delay~~, have a political settlement between America and Russia, which will accomplish the following: America and Russia must recognize certain areas as lying within each other's sphere of influence in the sense that America will not militarily intervene to preserve the status quo in ~~the areas~~ those areas which she recognizes as in the Russian field of influence, and Russia will not intervene in those areas which she recognizes as in the American field of influence.

Further, America and Russia must agree to the freezing of the status quo in a number of areas, and must agree to do all in their power to prevent any change in the status quo brought about by the ~~the~~ military intervention of any nation. To this end, they must jointly sponsor the ~~settlement of~~ setting up of regional, international, armed forces, under the auspices of the United Nations, which are highly mobile and are equipped with high-fire power, but are not permitted to possess, or use, atomic weapons. ~~The~~ The sole function of such regional forces, is to prevent any nation in the area from violating the territorial integrity of any other nation. It is not the function of the regional armed force to prevent changes of the government by internal revolution, as long as no military forces cross the country's boundary in which the revolution occurs.

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There are certain areas of the world where America and Russia will both want to freeze the status quo, and in some of these areas it might be possible to set up a regional international armed force under the auspices of the United Nations, with the consent and approval of both ~~for~~ Russia and America. These armed forces must be highly mobile and they may be equipped with high fire power, but they must not be permitted to be equipped with, or use, atomic weapons. One area where peace might be maintained by such means - provided there is a political settlement regarding that area between America and Russia - is the Middle East. *¶* On the Continent of Europe, America and Russia might have to choose between providing for a demilitarized and neutralized group of nations, *and* ~~and subsequently~~ adopting a "hands-off" policy, or else agreeing on freezing the present unsatisfactory status quo for at least a limited period of years. If they adopt a "hands-off" policy, this is an area in which - in case of a ^{peace} "hands-off" policy - ~~security~~ would have to be secured on the basis of collective security by the nations of Europe themselves, rather than by an armed force operating under the auspices of the United Nations. If, on the other hand, Russia and America agree to freeze the present status quo in Europe for a number of years, then again, there would be no need for having a United Nations force operate on the Continent of Europe.

Both of these solutions involve certain dangers which are discussed in the full version of my paper.

~~SECRET~~ ~~P~~

In other areas of the world, America and Russia might pledge themselves to a "Hands-off" ~~policy~~ attitude, which means that they would not militarily intervene to prevent changes, even if these were brought about by military violation of the territorial integrity by one nation against another. It would then remain to the nations within the area, itself, to enter into a pact providing for collective security. Because of the importance of Europe, I shall single out Europe as an example and discuss arguments in favour^{of}, and against, America and Russia adopting a policy of "hands-off" with respect to the South West and North East part of the continent of Europe, which includes: Spain, France, Belgium, Holland, Italy, Austria, Western Germany, Eastern Germany, Czechoslovakia and Poland. Russia would like to see an atom free zone, extending to these countries, which would mean that there would be no air-bases suitable for the take-off of strategic bombers, and no bases for long-range rockets, ~~within~~ within the territory of these nations, and that the armed forces of these nations would not be trained in the use of these weapons, and would not be equipped with such weapons. This would go only part of the way towards the solution of the European problem, which would be - in my opinion - highly desirable from the point of view of Europe, provided only that America and Russian approval for such a solution could be obtained. This solution would consist in creating, in these countries, a zone which is not only free from atomic weapons, but reduced to a level of arms which would exclude anything but machine guns and, at most, light tanks, and such other light equipment against which the neighbours could protect themselves even by means of merely digging trenches, or by building light fortifications. In my opinion, such a disarmed and neutralized Europe would gain, rather than lose, in security, and it would benefit in an almost unimaginable manner in prosperity. The ability of France to be part of such an essentially disarmed Europe might depend on her settling her Algerian conflict. The crucial issue is whether America and Russia would agree to a "hands-off" policy with respect to an essentially disarmed and neutral Europe. The main difficulty is the division of Germany. If

(P) America and Russia agree to a "hands-off" policy, there might be a revolution in Eastern Germany against the present Communist political system. Western German troops might move to the aid of one of the two warring factions in Eastern Germany, and thus Germany might be unified by force. To my mind, this is not only a possibility, but a likely course of events, if Russian troops move out and Russia declares a "hands-off" policy. (P)

D On the other hand, should there be Russian intervention, after Russian troops have moved out and a "hands-off" policy has been declared, then we might have a world war on our hands. If Russia cannot decide in favour of a "hands-off" policy, it would be far better for Russian and American troops to remain in Europe to freeze the status ~~quo~~ quo, however unjust it may be, for the sake of preserving peace. This, of course, does not mean that strategic air bases and bases for strategic rockets need to remain in Europe, and Russian and American troops need not be equipped with anything but machine guns and light tanks in order to be able to restrain any forcible changes.]

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The status quo is endangered not only by a military infringement of a nation's territorial integrity by another nation, but also by subversion of one nation by another, which might put into office a government that is subservient to that nation. Freezing the status quo in Europe by leaving lightly armed American and Russian troops in Europe, would also have the advantage that, by keeping Germany divided, Germany's demands would be focussed on reunification, rather than on regaining the pre-war territory which they have lost to Poland, and if the status quo is not frozen, and if Germany is permitted to reunite, one must be prepared to see a reunited Germany press for a return of their pre-war territory which has fallen to Poland. Furthermore, Russia's action if she adopted a "hands-off" policy could be interpreted as a betrayal of her political friends in Eastern Germany. ~~Betrayal~~ Betraying one's political friends rarely pays - even though, on some occasions, from the point of view of a long-range goal, such an action may be regarded as most laudable. In this particular case, the establishment of a neutral "Europe" would enable the countries of Europe to divert 10% of their national income, which in the absence of neutralization they would have to spend on arms, for the purchase of capital goods and, therefore, on this score alone, Europe could count on an annual increase of 3% in her production of consumer goods. Accordingly, assuming that the population of Europe remains constant, the standard of living would rise by an additional 3% per year. Russia would not doubt benefit from the ensuing economic prosperity of Europe, assuming that East-West trade were fully re-established.

One might also argue that a reunited Germany would probably overthrow the Adenauer regime and bring a social democratic government into office in Germany, and that this might be ~~of~~ a more favourable situation from Russia's point of view, but I seriously doubt that this can be considered a valid argument in favour of reunification to which Russia ought to give any weight. I, personally, would be fearful of a reunification of Germany, unless at the same time it were possible to obtain the approval of Poland to returning to Germany each year a strip of territory.

along the frontier of the depth of a few miles, so that Germany would be able to

(9) count on an eventual return of her pre-war territories lost to Poland. The
resettling of Polish families, who would have to move each year to the interior (9)
of the country, could perhaps be jointly financed by the United States and Russia,
and Russia might perhaps be willing to cede some territory to Poland, if the
proposed resettlement cannot be satisfactorily carried out without making available
to Poland additional territory.

To sum up, I believe the American government should propose to Russia

to chose between freezing the status quo in Europe and agree to the leaving of lightly armed American and Russian troops in Europe, or else to agree to a withdrawal of these troops and to adopt a "hands-off" policy in Europe, under which neither Russia, nor America, nor the United Nations would intervene, as long as an agreed upon level of disarmament is maintained in ~~Europe~~ Europe.

What is subversion?

The status quo is endangered, not only by a military infringement of a nation's territorial integrity by another nation, but also be the subversion of one nation by another, which might put into office a government that is subservient to that nation.

Up to quite recent times, Americans have always been inclined to underestimate the Soviet Union's military power, and to over-estimate her political power, and a number of politically influential people believe that Russia is bent on conquering the world by subversion. They tend to overlook the fact that subversion is a method of conquest which has been used by nations other than Russia. To give one example of subversion in recent times, I may remind my fellow Americans of the subversion of Iran by the United States. By way of explaining what I mean by the word "subversion", I want to choose an example which our Russian friends will find easy to understand. Iran was under the government of Mossedagh, a legally elected government representing the Iranian people no more and no less than legally elected governments representing the people in democracies other than those of the old established democracies. Iran decided to nationalize oil, which up to that point was under British control. The Iranian army, equipped with American sherman tanks, overthrew - conceivably without American consent, but certainly with American approval - the legally elected government, and put in a new government which denationalized oil under an agreement under which American oil companies obtained half of the oil, while the other half was ~~xxxxx~~ restored to the British.

Americans usually believe that the main purpose of subversion, if practiced by Russia, is to convert a capitalist country into a Communist country. Whether this is correct, I do not know, but I would rather think that Russia's main purpose is to have, in countries which might endanger her security, a government which is subservient to Russia, rather than to America, and that the easiest way of accomplishing that purpose is through the setting up of a Communist government. Certainly, subversion, if brought about by the United States, is not aimed at transforming the subverted country into a truly capitalist state - an aim which would be difficult of accomplishment, - and still less to introduce ^{their} into the country ~~the~~ parliamentary form of democracy - an aim which might be impossible of accomplishment. The sole aim of the United States on such occasions appears to be the establishment of a government which ~~is~~ yields to American influence, rather than to Russian influence. There is no need for us to argue here whether the benefit derived by American oil companies from the subversion of Iran, or whether the benefits ~~is~~ which the United Fruit Company derived from American subversion of Guatemala, made a causal contribution to the subversion, or were merely the consequences of the subversion.

Should America propose to Russia an agreement that both of them shall ~~refrain~~
~~from subverting each other?~~
cease to subvert, ^{perhaps} frankly I believe it would be most unwise for these two nations
~~subversion?~~

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to conclude an agreement to this effect in the near future. Until such time as
Russia gains a greater understanding of the workings of the American political
system, and vice versa, America will accuse Russia of subversion whenever an
unpopular ~~xi~~ government is overthrown which had been friendly to America, and
many of the governments which are friendly to America are unpopular governments.
Similarly, if there is ~~xx~~ revolution attempted in a country which has a government
which is friendly to Russia, Russia will accuse America of attempted subversion.
The fact that an agreement outlawing subversion could not be enforced could be
tolerated, but the fact that, frequently, subversion cannot be discovered in
advance, and very often, cannot be proven even after the accomplished fact, makes
me believe that it would be better not to have such an agreement, than to have
such an agreement and then accuse each other of violation of the agreement. If
America ceases to subvert, ^{perhaps} Russia could be counted on to restrain ~~herself~~
~~also~~ also in this regard, and vice versa. ~~It is not necessary for us~~

~~to have~~ ~~existence or friendship?~~

I believe that we scientists ought to oppose the view that America and Russia
can avoid a war merely by making up their minds that they shall co-exist. I
believe we should emphasize that this is not enough, and that what we need is to
develop friendship between our two countries. What friendship between two countries
means will have to be stated clearly, lest the word be ~~xxx~~ misunderstood, ^{(and regarded}
meaningless, or meaning something similar to friendship between two human beings.
When I say that we must have friendship between our two countries, and display
this friendship, I mean this:

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We must take a real interest in promoting each other's welfare. To what extent the government, itself, is able to do this is not clear, for governments are not human beings and are totally lacking in human warmth. But certain private organizations in America might very well take up some specific task in Russia, which - for one reason or another - no Russian organization can tackle with equal chance of success. Certain private organizations in America, and certain institutions in Russia, could cooperate with each other in areas where neither Russia nor America could hope to be very successful if it tackled the job alone. Specific examples of how a feeling of friendship - if it actually exists - might be displayed, are quoted in an attached memorandum. Perhaps ~~только правосудие~~ ~~taxgive~~ an example for what may be regarded as an expression of feelings other than friendship might also help and I am choosing this example because, as a matter of historical fact, it was interpreted by the Russians - and I think rightly so - as a sign that we regarded them as ^{potential} ~~political~~/enemies, rather than as potential friends.

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I have so far said nothing about the possibility that the American government might agree to stop bomb tests, and might propose the stopping of the manufacture of bombs at some fixed future date. Russia has unilaterally stopped bomb tests for the time being, and it is conceivable that, when her stockpile of bombs is large enough for what she considers her needs, she might agree to the stopping of the manufacture of bombs. Clearly, from the point of view of the danger of war, not much would be accomplished by stopping bomb tests and stopping the manufacture of bombs at a time when America and Russia have all the bombs they need to destroy each other. If straightforward disarmament is the solution of the problem posed by the bomb - and, as we shall see later, it is possible to doubt this - then nothing short of destroying the stockpiles of bombs, both in Russia and America, as well as eliminating the strategic striking forces of both Russia and America, can be regarded as an adequate measure of disarmament. This is precisely what the Russian government is proposing, and I cannot see what useful purpose would be served ~~if I question the sincerity of the proposal, as did the United States Department of State did recently in respect to Mr. Gromyko's statement on this subject.~~ Prof. Topchiev's address, entitled "Modern International Situation and Task of Scientists", which he presented to us on April 2, 1958, is a very effective presentation of his views, which happen to coincide/^{also} with the official position of the Russian government. This position, because of its great simplicity, has - from the political point of view - the virtue of being easily understandable. Because of this, it deserves - and will undoubtedly get - popular support. The existence of bombs is inherently a menace to mankind and the elimination of all bomb stockpiles, as well as of all effective means for the delivery of bombs, is therefore a goal which all sane men must regard as desirable. The present official Russian position comes very close/^{to} and is, in fact, almost identical with - ~~that~~ the position which the great majority of American scientists ~~have taken~~ and ~~have~~ loudly proclaimed, in the months that followed the second world war.

Strabell



One of the objections that one hears most frequently advanced in public against this position is the assertion that ^{even may be} secret violations of an agreement, ~~that provides~~ ^{by} for the elimination of the stockpiles of bombs, might remain undetected.  If one thinks in terms of the continuation of the cold war, and of inspectors of a United Nation's agency roaming up and down the countryside of Russia trying to discover bombs buried in the ground, then, indeed, one might be skeptical whether inspection can be relied upon to detect major secret violations. If one wants to end up with the wrong conclusion, all one has to do is to start with the wrong premise and, from then on, ^{strictly} obey the laws of ~~the~~ logic. If one wants to come up with the right answer, one must try to visualize the political setting in which one may assume that an ~~ag~~ arrangement providing for the elimination of the stockpiles of bombs may be presumed to operate satisfactorily.

Imagine that the United States and Russia arrive at a political settlement of the kind described before, and imagine further that the United States and Russia both ^{believe almost to} regard it as in their own interests to eliminate the stockpiles of bombs, together with the vehicles which are suitable for the delivery of such bombs.

^{less so now} We might assume further, that ~~because~~ ^{it} the observance of such an agreement could not be enforced, either against the will of Russia or against the will of the United States, by any international authority, ~~and~~ ^{it and it could} could therefore only remain in force as long as both Russia and America wish to keep it in force. Therefore, the agreement might just as well permit both Russia and America openly to abrogate the agreement, after giving due notice, any time they come to a conclusion that to keep it in force would not be in their interests. ^{circumstances} Clearly, in such a ~~setting~~, the issue would not be: what kind of inspection provisions shall be specified in the agreement? but rather, by what means can America convince Russia that there are no major secret violations of the disarmament provisions occurring in the United States (lest Russia, fearing such secret evasions, should feel compelled to abrogate the agreement). The problem for Russia would of course be similar.

Let us assume
~~Imagine~~ now that the cold war has ended, that a political settlement

of the kind described above has been reached between Russia and America, and that Russia has entered into an agreement of the kind described above for the elimination of atomic bombs from their armaments. *and now* Imagine ~~further~~ that the President *of this* goes before the American people and says as follows:

"America wishes to maintain friendship with Russia. It has decided to dispose of its bombs, and not to build new bombs as long as Russia can convince *us* America that she is *a* abiding by the provisions of the arrangements concluded. It is in the interests of the United States to convince Russia that there are no bombs secretly hidden on American soil and that the manufacturing of bombs ~~is~~ has stopped. To this end, the American government needs the help of its citizens. Since the American government can, if need be, openly abrogate the arrangement, any secret violation of the arrangement occurs against the wishes of the President and in direct contravention of his orders. It is therefore *and* the patriotic duty of every American citizen *to* discover such a violation, *and* to report it to the United Nations' control commission, or directly to the Russian government. America and Russia have jointly set up a fund out of which a reward of a million dollars will be paid for information leading to the discovery of a major violation of the arrangement. These rewards, because they are paid by an inter-governmental agency, shall be free from United States income tax. An American citizen who is willing to enter into the employment of the United Nations' control commission, or the employment of the Russian government as a "plain-clothes" agent would, by doing so, render a service to the ~~the~~ United States government and *would be* is fulfilling a patriotic duty, for it is in the interests of the United States to us every means for the purpose of enabling the Russian government to convince herself that the disarmament provisions of the arrangement are not being secretly violated."

Can anyone doubt that when the United States makes "spying" for Russia an

13 honoured profession and a lucrative lifetime career, she will ~~enable~~ enable Russia 13 to convince herself that she does not have to fear secret violations.

I know much less about conditions in Russia today than I do about conditions in the United States, but in view of the rapid changes that may be expected to take place in Russia upon ^{the} termination of the cold war, and the conclusion/with the U.S. of the type of arrangements described above, ~~with the~~ I would expect that Russia could find the means to enable the United States to convince herself that secret violations of the disarmament provisions of the arrangement would come to light. ^{take place} internal

I am stressing the need for ~~the~~ the ~~international~~ consistency of a set of rules which must operate, both in America and in Russia, if an arrangement providing for disarmament is meant to be kept in force, because of the experiences which I had in Germany when I lived there after the first world war. The Treaty of Versailles had provided for the disarmament of Germany, but the treaty was imposed upon the Germans and they did not consider it in their interests to adhere to its provisions. ^{auth} The Statute's Book in Germany contained ^{the remnant} an espionage law which had never been revoked. German citizens who informed the inter-allied control commission of secret violations of the disarmament clauses of the Treaty of Versailles could be sentenced to prison under the German espionage act, and they were, in fact, so sentenced.

If one ^{take} takes into consideration that no atomic bombs or long-range rockets can be hidden anywhere without quite a number of physicists, engineers and workers knowing about the fact, and if one keeps in mind that bombs buried in the ground are of little use unless long-range ~~g~~ rockets are also secreted away, it should be apparent, I believe, that in the proper setting it should be possible to discover any major violation or really major evasion of the kind of disarmament provisions here discussed.

I also believe that among American scientists, with the exception of those who take a prejudiced view of Russia, probably a substantial majority could agree on a set of important proposals, which could serve as a basis of discussion at such a Summit Meeting. If ^{we} they should succeed in convincing the American government that there are, in fact, desirable objectives - which might be attainable through such a Summit Meeting - then they ^{are} would be in a good position to urge the American government to agree to such a ^{meeting} Summit Meeting. However, no useful purpose would be served to bring popular pressure to bear on the American government to agree to a Summit Meeting, unless

it is possible first to convince the government that there exists a set of attainable objectives, which it may regard as desirable. It may be well to keep in mind, in this regard, the proverb which says: "You can lead a horse to water, but you cannot make it drink".

With this immediate goal before us, I wish tentatively to put forward a set of proposals which appear to me to represent desirable objectives, ~~which~~ I believe scientists might urge the American government to accept without delay, ^{provided that} ~~these~~ ^{these} proposals may find these proposals acceptable also.

I. The Russian and American governments might agree to stop altogether the shouting war, which has, fortunately, diminished in intensity in the past three years, but which has not completely stopped. Or, to be more precise,

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There is possibility that
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it is conceivable that such popular pressure might force the gov't into agreeing to a Summit meeting
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attainable objectives which it may regard as desirable. While it is conceivable that popular pressure might force the Administration into agreeing to a Summit meeting, it may be well to keep in mind, in this regard, the proverb: "You can lead a horse to water, but you can^{not} make it drink."

I
With the ~~through~~ thought ~~before us~~ of a Summit meeting, in the none too distant future, ^{before us} I shall ^{now} attempt to put forward a set of proposals which appear to me to represent desirable objectives. I believe that we scientists might do well to urge ~~on~~ the American government ^{to accept} ~~this~~, or similar proposals, provided that we think that Russia may find such proposals acceptable also.

14 If these objections are invalid, what valid objections do exist against

14
Valid objections

real disarmament, as a straightforward solution to the problem posed by the bomb? If such a solution were adopted in the very near future, this would almost certainly mean that, for the next twenty to twenty five years, the danger of an atomic war would have been averted. I can fully understand those who believe that we should be satisfied with this, and that if the world can go through 25 years without a major war in that period of time - which, after all, represents one generation - we can build up a world community that will make war unnecessary as a means of bringing about changes in the map of the world or the distribution of goods, or else for the purpose of preventing changes of the map and the distribution of goods. Yet one might just as well take the opposite position and say that unless, in addition to eliminating the bombs, one also shoots all physicists and engineers who know how to make bombs, so that the knowledge of how to make bombs is forgotten, atomic war will come to the world after a ^{relatively} short period of peace. Those who hold this view may point out that two world wars have been fought in this century, prior to the advent of the atomic bomb, and that the United States felt compelled to participate in both wars. On both occasions, the United States entered the war to prevent a German victory, not in order to make the world safe for democracy, or to establish the four freedoms in the world, as she alleged, but in order to prevent a shift in the power balance which would have threatened her security. Indeed, had ~~the~~ Germany won either the first or the second world war, then - in the absence of atomic bombs - the United States could not have stopped Germany from becoming militarily so strong as to be able to vanquish the United States in a subsequent war.

In the absence of general principles, universally accepted by all nations, it is not possible to adjudicate conflicts between nations on the basis of reasoned arguments that appeal to the sense of justice of all nations. If we abolish the bomb, the only thing that would prevent nations from attempting to settle conflicts by resorting to arms would be the memory of the bomb. Would the memory

~~21~~

(15)

of the bomb be strong enough, and could this memory be kept alive long enough?

It is true that the great powers, if they act in agreement with each other, could

restore the United Nations to its original purpose of preventing the smaller

~~wars~~ ^{from} disturbing the peace. ~~But~~ let us take a look at the great powers.

Among them only Russia and the United States can protect their present possessions

from being lost to them without ~~being tempted~~ ^{having} to resort to arms. England and

France have just recently resorted to force in order to protect what they

regarded as vital interests. Is it not likely that, if the bomb is abolished, ~~an~~

armed conflicts will occur between nations ~~that~~ ^{which} will threaten to change the power

balance adversely ~~against~~ ^{at least} against Russia or against America, and that these two nations

will then be drawn into the conflict? If that should happen, it wouldn't take

~~(# Insert sentence above: And it is also true that the task of the United~~

~~Nations could be facilitated by setting up, in certain areas of the world, a~~

~~regional armed force, under its auspices, which would effectively safeguard the~~

~~preservation of the status quo)~~

long before atomic bombs would appear on the scene - at which point all hell might

break loose. ~~But~~ let us now forget these theoretical considerations and try to

examine dispassionately, not what we would wish to happen, but what is actually

likely to happen. Since I know more about the workings of the American political

system than I do about the workings of the Russian political system, I shall

confine my remarks to the former. A year or so ago, while I was staying at the

Hotel Plaza, in New York, ~~Dr.~~ Edward Teller appeared on the scene. He, too, stayed

at the Plaza Hotel, attending a study group which was concerned with the problem

of armaments and which had been called together by Nelson Rockefeller. You must

know that, every since 1945, American politicians, whenever they speak in public in

favour of disarmament - and in order to preserve the sincerity of the matter, ~~we~~

manage to persuade themselves that they are, in fact, in favour of disarmament.

I asked Teller, on ~~this~~ the occasion of that meeting, just what kind of disarmament

his group had decided to favour.

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"Are you ^{all} agreed now," I asked, "that it would be a good thing if ~~both~~ ~~sub~~ ~~both~~ America and Russia were to eliminate bows and arrows from their ^{armament} national arsenals?"

"You should not say such a thing," said Teller to me. "You will lose such little influence as you may still have in government circles if you ~~insist~~ ^{persist} in ~~keeping~~ ^{such things} saying ~~the~~ ^{the} truth."

Teller having answered my question fully, I changed the subject of conversation.

It is quite possible that the American and Russian ~~ex~~ governments will agree, not only to stop bomb tests, but also to stop the manufacture of bombs, as soon as America and Russia both have the kind of bombs ~~as~~ they want in the quantity they want to have them. But I believe that any agreement which these two countries may conclude ^{with each other} in the foreseeable future will stop short of the elimination of the stockpiles of bombs, and the vehicles which are adapted for their delivery. You all know the saying: "Yes my darling daughter, hang your clothese on the hickory tree, but don't go near the water." It is true that

the Administration is divided on the issue of far-reaching disarmament that would include the elimination of the bomb. It is ~~true~~ ^{true} that the powerful forces which are at work within ~~the~~ the Administration ^{in favor of far reaching disarmament} include the President, himself, but the Administration is only one branch of the American government, Congress is another ^{branch} and if I correctly assess the balance of forces, then the outcome of the struggle inside the Administration will be won by those who wish to stop short of the elimination of the bomb. ^{Sum up, incl past 12 years.} I wish, therefore, to appeal to those of you who are

~~incl~~ ~~incl~~ ~~incl~~ ^{this view} inclined to share ~~this forecast~~ ^{incl} to begin to think how we can live with the bomb, rather than to ~~think how to get rid of it~~ ^{continue to dream of getting rid of the bomb}. For clearly, if my forecast is correct, we shall have to live with the bomb for a long time to come. We may then take it for granted that, before long, we shall have a stalemate between the strategic atomic striking forces of America and Russia, and

17

17

the most important question that will then confront us will become the following question:

Assuming that a strategic stalemate is based on intercontinental/missles ballistic using solid fuel, what are the political conditions and what is the philosophy which we must adopt concerning the use of the bomb if we want to make sure that this stalemate may not become instable, and that we may not have an atomic war that neither Russia nor America wants? Before we can discuss this intelligently, we must know something about the technical problems that relate to such a stalemate, and Colonel Leghorn is going to speak now ~~up~~ on this subject.

Leghorn

Gap

Insert II

The advantage of this Russian proposal lies in the fact that it could be put into effect without further delay, and as long as it is observed by both sides, it would prevent the outbreak of an atomic war and thereby safeguard the world against an all-out atomic catastrophe to which such a war might otherwise lead.

Insert I.

With the thought of a Summit meeting, in the none too distant future, before us, I shall now attempt to put forward a set of proposals which appear to me to represent desirable objectives. I believe that we scientists might do well to urge the American government to accept these, or similar, proposals, provided that we think that Russia may find such proposals acceptable also.

Insert III

The American government has explained her negative attitude with respect to the Russian proposal to prohibit the use of atomic weapons in war, in rational terms, on the following bases: In certain areas of the world, where America is committed to maintain the status quo, but where America and Russia may not be in full control of the situation, there might be a resort to arms - as was the case, for instance, when war broke out between North and South Korea. Both America and Russia might then be forced to intervene on opposite sides. In some of these areas, where America is committed to maintain the status quo, Russia has a great superiority in manpower and is in a more favorable geographical position. If only conventional weapons were used, and America were barred from the use of atomic weapons in combat, she might not be able to put up an effective resistance against a forcible change of the status quo.

Insert IV

I believe that we now ought to propose to the American government that she give a pledge, which will go halfway towards the pledge demanded by the Russians, and which she could give without incurring all the disadvantages the pledge proposed by Russia would have involved.

Insert V

Such a pledge would not represent a solution of the problem of the bomb, but it could be put into effect at once and be replaced by another pledge as soon as it is possible to develop a more satisfactory policy.

Insert VI

I was greatly pleased when, upon arriving in Quebec, I found that Colonel Leghorn had arrived at the same conclusion. I was both pleased and reassured, because as Colonel Leghorn knows much more about military matters than I do, his judgement is much surer than mine of the military ~~xxx~~ aspects which are involved.

1st Part of Paper.

Szilard

What Colonel Leghorn will present here in his two talks are just parts of a paper he is preparing, and the whole paper will be available before this Conference adjourns. I hope that my paper also will be available.

I had ~~very~~ little time for the preparation of my paper, and therefore I ~~wrote~~ wrote a very long paper; the time available was not sufficient to ^{the} writing of a short paper. I shall therefore not read the whole paper, but leave out passages. I will tell you what is in those passages, and if there is time late this afternoon after the whole presentation is finished, ^{and} if you want to discuss those passages upon which I have only touched without reading what I have written about them.

Academician Topchiev in his address to us here a few days ago explained to us why it is necessary to have a Summit Meeting in the near future, and he suggested that we scientists should urge the American government to agree to such a meeting. I believe that it is quite clear that a Summit Meeting of the kind which Professor Topchiev described ~~is~~ is essential if we want to make progress toward peace.

What stands in the way of such a summit meeting as far as the American government is concerned. I believe there are two ² reasons. First the American government is divided within itself, and therefore does not know what to propose at such a meeting, and secondly there is no agreement between the American

government and her allies. I think that ^{we} American scientists with the exception of those who take an unduly prejudiced view of Russia, could ^{as a result of meetings} ~~agree~~ agree among ^{ourselves} themselves on some important proposals which the American government ^{might then put forward at a summit meeting} ~~could make and could suggest as a basis of discussion at such a~~

~~Summit meeting.~~ ^{as a basis of discussion.}

If we should succeed in convincing the American government that there are, in fact, desirable objectives which might be attainable through such a Summit Meeting, then we would be in a good position to urge the American government to agree to such a meeting. However, no useful purpose would be served to bring popular pressure to bear on the American government to agree to a Summit Meeting, ~~unless it is possible first to convince the government that there~~

until the American government becomes convinced
~~that there~~ exists a set of attainable objectives which it may regard as desirable. While it

is conceivable that popular pressure might force the Administration into agreeing to a Summit Meeting, it may be well to keep in mind, in this regard, the proverb:

"You can lead a horse to water, but you cannot make it drink."

I → *shall* 36
 Now I ~~will~~ start out by describing to you what is at present the American

policy with respect to the bomb. We may rule out for the purposes of the present discussion the possibility of a wanton attack by America against Russia or Russia against America. If we do this we must regard ~~as~~ *the* greatest peril in the present circumstances ~~lies in~~ the possibility that a war may break out somewhere, possibly between two small nations, and that America and Russia might ~~interfere~~ *intervene* on opposite sides. According to the present American policy, such a war would be fought with atomic weapons. According to the present American policy - which I believe to be a very dangerous policy - American troops would use tactical atomic bombs in combat and, in addition, use atomic bombs to disrupt the communications of their enemy to a depth of perhaps several hundred miles beyond the pre-war territory which America has resolved to defend.

Such a war must necessarily end in one of two ways. Either a conflict will spread and end in an all-out atomic catastrophe, or else the war will continue to be localized and will go on until the area of conflict is completely destroyed, with all buildings in ruins and a large fraction of the civilian population dead. ~~At that point, either America or Russia~~ For only in that case can either America or

Russia withdraw from the fighting without explicitly conceding defeat. The other alternative is that the war does not remain localized, and in that case ~~there~~ it will end in an all-out atomic catastrophe.

The present American policy with regard to the bomb is supported by Dr. Edward Teller and many others. He and those others who advocate this policy hope that, if this policy is pursued by America, future local wars would be fought with small bombs, and the large bombs will remain in reserve, unused, because either side will fear retaliation in kind. I do not believe that this hope is well founded.

As you know, Russia has proposed long ago that, as a first step towards eliminating the danger that the bomb represents to the world, ~~they/ that~~ ^{the} use of the bomb be outlawed without further delay. Clearly, as far as Russia and America alone are concerned, the proposal is equivalent to the proposal that both Russia and America should unilaterally declare that, in case of an outbreak of war, in which they might be forced to intervene, they will not resort to the use of atomic bombs, either as a strategic weapon, or in combat, unless such bombs are first used against them by the other party, ~~first~~. If both America and Russia would ~~at the advantage~~ make the pledge demanded by Russia, and if in case of war they would abide by this pledge, then ^{the} danger of an atomic war would be averted.

II → The American government has explicitly rejected this proposal and has stated that she intends to use atomic bombs in combat if war should come as a result of atomic aggression; and just what constitutes aggression would be unilaterally determined by America ~~alone~~.

III → America has several reasons for the rejection of the Russian proposal - I will mention only the main reason. The American government believes that if

she were to give the pledge proposed by Russia, ~~we~~^{she} would have to maintain a double military establishment - two military establishments - one based on conventional weapons and the other based on atomic weapons because ~~we don't~~^{she} wants to be in a position to shift rapidly to the use of atomic weapons if atomic weapons ~~were~~^{were to be} used against her in violation of the pledge against using them.

The problem now before us here is to find an alternative to the Russian proposal which might be acceptable to America, and which would accomplish at least one of the objectives of the Russian proposal; namely, the objective to prevent a local conflict from leading to an all-out atomic war.

IV ~~What we might propose in this respect to the American government will now be explained to you by Colonel Leghorn. Both Colonel Leghorn and I arrived at the same conclusions independently.~~ We both start out with the assumption that neither America nor Russia has the slightest intention of changing the existing boundaries of sovereign nations by armed action. Therefore, ~~that~~ should there be a conflict any where in the world, which leads to a resorting to arms, in which America and Russia might be forced to intervene on opposite sides, neither America nor Russia should have any objection to a ^{limited} ~~limiting~~ prohibition of the use of atomic weapons in combat~~ing~~, which favors the defenders, and therefore makes a forcible territorial change more difficult.

~~What Colonel Leghorn and I propose is a unilateral pledge~~

Colonel Leghorn ^{will} ~~shall~~ take over from here, and after his presentation we shall try to have a discussion.

Professor Leo Szilard
April 8, 1958

Last section of paper on "How to live
with the bomb" by Leo Szilard.

~~Colonel Leghorn painted us a clear picture of an armed world towards
which we are moving at present.~~

The first thesis of which I would like to convince you is as follows:

If America and Russia are both armed with long-range rockets, along the lines described by Colonel Leghorn, then we can avoid an all-out catastrophe only if both of these nations develop a clear philosophy, understandable to all, on the role which these bombs may play in the stabilization of peace. There was a time when America threatened "massive retaliation" in response to any action that she choose to interpret as aggression, i. e., America threatened to drop bombs on Russian cities, killing millions of civilians - men, women and children - if Russian troops were to move into Western Europe. And right now, Great Britain threatens murder and suicide if Russia were to get involved in a war with Great Britain. A few years hence these threats will perhaps be regarded as voices from the dark ages and it will be difficult to explain why educated and civilized people tolerated, without vigorous protest, the utterance of such morally reprehensible threats on the part of their governments.

I believe that in the armed world described by Colonel Leghorn, we might be able to have a stable stalemate for the following reasons: Neither America nor Russia are impelled - by any of their vital interests - to change the present map of the world. America would like to see certain changes take place, and Russia would like to see certain changes take place, but neither of them would be willing to pay a substantial price - and by price

I mean a loss in worldly goods, rather than any possible loss of life that might be incurred. - People may be willing to sacrifice lives - usually other people's lives - but they are rarely willing to sacrifice property, particularly if it is their own property.

These considerations form the premises for what I am going to say now. In a world characterized by true strategic stalemate between America and Russia both America and Russia can be and can remain invincible if they adopt a philosophy, with respect to the bomb, which permits them to retain the bomb as an instrument of power while renouncing the bomb as a weapon that may be used for the purpose of killing the civilian population of the cities, or soldiers in combat. The bomb is an instrument of power - and it is difficult for governments to relinquish an instrument of power. The fact that the bomb might serve as an instrument of power to the governments of Russia and America, because it represents potentially an instrument of demolition rather than because it represents an instrument of mass murder, has probably been overlooked in these past twelve years mainly because ... the first use of the bomb at Hiroshima and Nagasaki made the bomb into the symbol of mass murder of civilians.

In the world of the strategic stalemate towards which we are moving Russia and America could come to an amicable understanding on the means through which either of them could resist the changing of the status quo by the other, in case of a military invasion of a territory which they are committed to resist. If they go about it in the right way, they can stabilize the status quo and it will be exceedingly unlikely that either Russia or America may want to pay the price at which they could bring about the change which they desire.

As a first step towards such an amicable understanding, Russia and America might draw up a list of cities and come to a meeting of minds on the issue of which Russian city is approximately equal in size to which American city. After that, America and Russia could both issue unilateral declarations that would cover all areas of the world in which they are committed to resist an armed invasion.

OUTLINE OF REST OF PAPER

1. The price list.
2. The rule of one for one.
3. Revision of the price list.
4. No incentive for killing.
5. No incentive for haste, (the golf story).
6. The truth about "clean" bombs, and what we must demand.
7. A reactionary agreement between Russia and America and its policing by the scientists.

country ^{ies here} exceedingly costly, and prevents the spreading of an atomic war, as

long as the rule is observed by both parties. *Since neither Russia nor America have any real interest to risk an all out*

As a first step towards the stabilization of peace, America could make the unilateral declaration, here proposed, ~~at once~~ ^{without delay}, and I believe we ought to

urge our government to make such a declaration, without undue delay. I can see no valid objection against this proposal, and once such a declaration has

been made, I see good reasons why we should abide by the rule which we have imposed upon ourselves (as long as Russia abides by the ~~same~~ same rule) ~~should~~

~~some nations resort to arms and should Russia and America find themselves forced to intervene on opposite sides, in a local conflict.~~

Political settlement

Next, our greatest concern must be to avoid the occurrence of conflicts which may force America and Russia to intervene on opposite sides.

At the end of the last war, it was generally believed that -- as long as the Great Powers act in concert with each other - the United Nations Organization may be able to guarantee the security of the smaller nations and may make it unnecessary, as well as impossible, for them to go to war with each other.

Attempts to use the United Nations in the past ten years for purposes other than those for which it was designed have weakened this organization, but I ^{hope} believe they have not damaged it beyond repair. ^{I hope that} ~~We believe it~~ may be possible to restore the United Nations to its original function once there is a political settlement between the Great Powers, at least in the narrow sense in which I shall use the term, "Political settlement".

shift

I think that to accomplish this objective, we must, just as soon as possible, have a political settlement between America and Russia, which will accomplish the following: America and Russia must recognize certain areas as lying within each other's sphere of influence in the sense that America will not militarily intervene to preserve the status quo in those areas which she recognizes as in the Russian field of influence, and Russia will not ~~inter-~~

*atomic war for the sake of championing the status quo
rather of these two countries have any interest in making the
"rule" for "nations"*

intervene in those areas which she recognizes as in the American field of influence.

Further, America and Russia must agree to the freezing of the status quo in a number of areas, and must agree to do all in their power to prevent any change in the status quo brought about by the military intervention of any nation. To this end, they must jointly sponsor the setting up of a regional, international, armed forces, ^{constitutably} under the auspices of the United Nations, which are highly mobile and are equipped with high-fire power, but are not permitted to possess, or use, atomic weapons. The sole function of such regional forces is to prevent any nation in the area from violating the territorial integrity of any other nation. It is not the function of the regional armed force to prevent changes of the government by internal revolution, as long as no military forces cross the country's boundary in which the revolution occurs.

There are certain areas of the world where America and Russia will both want to freeze the status quo, and in some of these areas it might be possible to set up a regional international armed force under the auspices of the United Nations, ~~with~~ with the consent and approval of both Russia and America. These armed forces must be highly mobile and they may be equipped with high fire power, but they ~~may~~ must not be permitted to be equipped with, or use, atomic weapons. One area where peace might be maintained by such means ~~is~~ provided there is a political settlement regarding that area between America and Russia - is the Middle East.

On the Continent of Europe, America and Russia might have to ~~choose~~ choose between providing for a demilitarized and neutralized group of nations, and adopting a "hands-off" policy, or else agreeing on freezing the present unsatisfactory status quo for at least a limited period of years. If they adopt a "hands-off" policy, this is an area in which - in case of a "hands-off" policy - peace would have to be secured on the basis of collective security

Europe

by the nations of ~~Europe~~ Europe themselves, rather than by an armed force operating under the auspices of the United Nations. If, on the other hand, Russia and America agree to freeze the present status quo in Europe for a number of years, then again, there would be no need for having a United Nations force operate on the Continent of Europe.

Both of these solutions involve certain dangers which are discussed in the full version of my paper.

If America and Russia agree to a "hands-off" policy, there might be a revolution in Eastern Germany against the present Communist political system. Western German troops might move to the aid of one of the two warring factions in Eastern German, and this Germany might be unified by force. To my mind, this is not only a possibility, but ^a likely course of events, if Russian troops move out and Russia declares a "hands-off" policy.

On the other hand, should there be Russian intervention, after Russian troops have moved out and a "hands-off" policy has been declared, then we might have a world war on our hands. If Russia cannot decide in favour of a "hands-off" policy, it would be far better for Russian and American troops to remain in Europe to freeze the status quo, however unjust it may be, for the sake of preserving peace. This, of course, does not mean that strategic air bases and bases for strategic rockets need to remain in Europe, and Russian and American troops need not be equipped with anything but machine guns and light tanks in order to be able to restrain any forcible changes.

Freezing the status quo in Europe by leaving lightly armed American and Russian troops in Europe, would also have the advantage that, by keeping Germany divided, Germany's demands would be focussed on reunification, rather than on regaining the pre-war territory which they have lost to Poland, and if the status quo is not frozen, and if Germany is permitted to reunite, one must be prepared to see a reunited Germany press for a return of their pre-war territory which had fallen to Poland. Furthermore, Russia's action if she

adopted a "hands-off" policy could be interpreted as a betrayal of her political friends in Eastern Germany. Betraying one's political friends rarely pays— even though, on some occasions, from the point of view of ^a long-range goal, such an action may be regarded as most laudable. In this particular case, the establishment of a neutral "Europe" would enable the countries of Europe to divert 10% of their national income, which in the absence of neutralization they would have to spend on arms, for the purchase of capital goods and, therefore, on this score alone, Europe could count on an annual increase of 3% in her production of consumer goods. Accordingly, assuming that the population of Europe remains constant, the standard of living would rise by an additional 3% per year. Russia would no doubt benefit from the ensuing prosperity of Europe, assuming that East-West trade were fully re-established.

One might also argue that a reunited Germany would probably overthrow the Adenauer regime and bring a social democratic government into office in Germany, and that this might be a more favourable situation from Russia's point of view, but I seriously doubt that this can be considered a valid argument in favour of reunification to which Russia ought to give any weight. I, personally, would be fearful of a reunification of Germany, unless at the same time it were possible to obtain the approval of Poland to returning to Germany each year a strip of territory.

To sum up, I believe the American government should propose to Russia to choose between freezing the status quo in Europe and agree to the leaving of lightly armed American and Russian troops in Europe, or else to agree to a withdrawal of these troops and to adopt a "hands-off" policy in Europe, under which neither Russia, nor America, nor the United Nations would intervene, as long as an agreed upon level of disarmament is maintained in Europe.

What is subversion?

The status quo is endangered, not only by a military infringement of a nation's territorial integrity by another nation, but also by the subversion

of one nation by another, which might put into office a government that is subservient to that nation.

Up to quite recent times, Americans have always been inclined to underestimate the Soviet Union's military power, and to over-estimate her political power, and a number of politically influential people believe that Russia is bent on conquering the world by subversion. They tend to overlook the fact that subversion is a method of conquest which has been used by nations other than Russia. To give one example of subversion in recent times, I may remind my fellow Americans of the subversion of Iran by the United States. By way of explaining what I mean by the word "subversion", I want to choose an example which our Russian friends will find easy to understand. Iran was under the government of Mosse~~da~~gh, a legally elected government representing the Iranian people no more and no less than legally elected governments representing the ~~the~~ people in democracies other than those of the old established democracies. Iran decided to nationalize oil, which up to that point was under British control. The Iranian army, equipped with American Sherman tanks, overthrew - conceivably without American consent, but certainly with American approval - the legally elected government, and put in a new government which denationalized oil under an agreement under which American oil companies obtained half of the oil, while the other half was restored to the British.

Americans usually believe that the main purpose of subversion, if practiced by Russia, is to convert a capitalist country into a Communist country. Whether this is correct, I do not know, but I would rather think that Russia's ~~main~~ main purpose is to have, in countries which might ~~endanger~~ endanger her security, a government which is subservient to Russia, rather than to America, and that the easiest way of accomplishing that purpose is through the setting up of a Communist government. Certainly, subversion, if brought about by the United States, is not aimed at transforming the subverted country into a truly capitalist state - an aim which would be difficult of accomplishment - and

still less to introduce into the country their parliamentary form of democracy - an aim which might be impossible of accomplishment. The sole aim of the United States on such occasions appears to be the establishment of a government which yields to American influence, rather than to Russian influence. There is no need for us to argue here whether the benefit derived by American oil companies from the subversion of Iran, or whether the benefits which the United Fruit Company derived from American subversion of Guatemala, made a causal contribution to the subversion, or were merely the consequences of the subversion.

Should America propose to Russia an agreement that both of them shall refrain from subversion?

Frankly I believe it would be most unwise for these two nations to conclude an agreement to this effect in the near future. Until such time as Russia gains a greater understanding of the workings of the American political system, and vice versa, America will accuse Russia of subversion whenever an unpopular government is overthrown which had been friendly to America, and many of the governments which are friendly to America are unpopular governments. Similarly, if there is revolution attempted in a country which has a government which is friendly to Russia, Russia will accuse America of attempted subversion. The fact that an agreement outlawing subversion could not be enforced could be tolerated, but the fact that, frequently, subversion cannot be discovered in advance, and very often, cannot be proven even after the accomplished fact, makes me believe that it would be better not to have such an agreement, than to have such an agreement and then accuse each other of violation of the agreement. If America ceases to subvert, perhaps Russia could be counted on to restrain herself also in this regard, and vice versa.

Szilard

Insert

I am trembling here because I am awaiting the time when Colonel Leghorn will use the word deterrent. I must ask our Russian friends to try to understand what I am saying. Any weapon^(even), if it is only a machine gun, can have only two uses. Either you want to use it for aggression because you want to take away something from somebody else, or you may want to use it to prevent somebody else from taking something away from you. As long as we have any weapons - even if only ~~a~~ machine guns - since we cannot possible admit that we want to use ^{them} ~~it~~ for aggression, we must call ^{them} ~~it~~ deterrents, and it is in this sense that Colonel Leghorn will use the word.

Szilard

Insert

I want to say this. ~~That~~ neither Colonel Leghorn nor I believe that this proposal solves any of our major problems. It is, however, ^{such} ~~so~~ that it could be put into effect tomorrow morning by two unilateral declarations on the part of America and Russia - ^{that is} that they will impose such limitations on ~~themselves~~ ^{themselves} in case of an invasion of any nation which they are committed to defend. It doesn't require inspection and it doesn't require agreement, but it is a little better than what we have now. It is a little better than the Teller policy.

This afternoon we will talk about how we can get beyond this situation, which in my opinion has a very great drawback. It is a sort of a game, and no ~~game is a~~ ⁱⁿ game which people are killed. ^{is really a game, if} I do think that ^{were} such a pledge given now, caused by the American government, ~~and~~ we would be immediately somewhat better off than we are now. This is just one of the first steps which we could propose to the American government and which could be proposed at the Summit Meeting. ^{These first steps do} They ~~do~~ not solve our problem, but they create an atmosphere in which we shall have more chance to discuss the things which are necessary to solve our problem

The Russian Suggestion that first outlaw use of atomic weapons in case of war is

~~I have no official knowledge of the things of which I am speaking, but these~~
~~are my assumptions.~~ The first hydrogen bomb which was a real bomb was exploded
 by the Russians; ~~this was not a bomb out of which a larger number of bombs could~~
~~have been made easily, because it was not a type of which a quantity could be made.~~
~~It was a dirty bomb.~~ The first American H-bomb of comparable power was also a
 "dirty" bomb. It was of the kind of which large quantities could be made easily. Since
 that time the Russians have detonated large hydrogen bombs which were dirty bombs,
 but of a different kind from the first, the kind of which large quantities could be

~~made. There are now both we and the Russians are in a position to make large ones~~
~~of very powerful "dirty" hydrogen bombs, which could be carried~~
~~by intercontinental ballistic missiles.~~

5 believe that Professor Edsall committed an error ~~in reasoning~~ when he said the follow-
 ing: the United States has declared that it can make large hydrogen bombs which are
 96% pure, and therefore ~~which~~ ^{it} doesn't seem reasonable to develop this bomb any
 further because it doesn't make any difference whether a bomb is 96 or 99% pure.

I agree ~~but~~ ^{with} where Professor Edsall made ~~an~~ ^{his} error is this. He presumed that the
 "clean" hydrogen bomb which we can make now is sufficiently light in weight ^{is} to be
 carried by an intercontinental ballistic missile. Because he made this assumption
 he concluded that there is no point for us to develop ~~large~~ ^{powerful} pure hydrogen bombs.

I am making the assumption that his assumption is wrong, ^{and} therefore I conclude
 from ~~my assumption~~ ^{want to interchange} that if we do change in our stockpiles the "dirty" bombs with "clean"
 bombs, we have to develop further the ~~large~~ ^{powerful} clean hydrogen bombs, ^{that to} and for this we
~~end me~~ need further bomb tests.

If it should be possible for Russia and America to ~~agree that we limit our~~ ^{shall} ^{to}
 stockpile of bombs, ~~this should not be simply a prohibition~~ ^{of} (of manufacture) but rather
^{they may} ^{ing of bombs}

They might also agree to ^{by} an agreement that both of us can replace the dirty bombs for the clean bombs, without increasing the total number ^{of bombs in the stockpiles} ~~of bombs in the stockpiles~~ ^{and favor their}

What I am going to ^{the way here is based} Now my paper is based on the assumption that the stockpiles will be retained for at least 10 years at least and perhaps much longer. ^{If this assumption is correct, then} In these circumstances if we scientists want to demand some-

thing from the government, it should not be that ~~we~~ ^{the government should} we should not develop the hydrogen bomb, but rather that ~~it~~ ^{we} should give the Russians full information on the construc-

tion and physics of the clean hydrogen bomb. Russia should be, not only invited to see the tests, ^{and be} but really given information about the construction of these ^{clean} bombs, and ^{but}

perhaps even help - once we have reached an agreement ^{on} as to the limiting of the number

^{of} bombs - ~~helping to~~ ^{we should help her to} replace their dirty bombs with equally good clean ones. ~~We~~

~~should offer to Russia that for every bomb test that they need to develop the large~~ ~~clean bomb, they should take all the information they need, and we should say that~~ ^{Should Russia, perchance,}

^{be ahead in her knowledge of clean} ~~hydrogen bombs she only wants to reach~~ ^{what we need in to know in order} they should reciprocate. I think that you will ^{now} see why I am so keen on ~~resisting~~ ^{to} that if we maintain

the stockpiles, the stockpiles should consist of clean and not dirty bombs, and I

^{Further} describe how I want to use this situation, ^{if you accept my assumption that there}

will be ^{if clean, powerful bombs} fairly large stockpiles (in Russia and America, then ~~the first thesis of which~~

^{my next point is this;} I would like to convince you is the following. In such an atomic stalemate, we can

a void an all-out catastrophe only if both Russia and America develop a clear philo-
sophy, understandable to all, on the role which these bombs may play in ~~the stabiliza-~~
~~tion of peace~~ ^{in any conceivable - even through}
^{not necessarily likely - contingencies.}

There was a time, not so long ago, when America threatened massive retlia-

tion in response to any action that she chose to interpret as aggression; ~~That is~~ ^{i.e.}

America threatened to drop bombs on Russian cities, killing ^{millions of civilians} ~~many hundreds of men,~~

^{men!} ~~women, and children,~~ ^{for instance} ~~if Russian troops dared to march into western Europe.~~ ^{mere} Right

now Great Britain threatens murder and suicide if Russia dares to get involved in a war with Great Britain. *I* I hope that a few years hence, even though the atomic stalemate ~~will~~ ^{may} continue, ~~these~~ ^{as these} threats will be ~~raised~~ ^{as these} regarded as voices from the dark ages, and it will be difficult to explain why educated and civilized people tolerated, without vigorous protest, the utterance of such morally reprehensible threats on the part of their governments.

What are the chances that we may
 Now I shall give you my reasons why I believe it is not hopeless to have ~~success in the atomic stalemate. First of all this is based on this fact~~ ^{Neither} ~~stalemate?~~ *?* Neither America nor Russia are compelled by any of their vital interests to change the present map of the world. America ~~would~~ ^{might} like to see certain changes take place, and Russia ~~would~~ ^{might} like to see certain changes take place, but neither of them would be willing to pay a substantial price, ~~and by this I mean a price in worldly goods.~~ ^{at least not}

And *I* I am not so much thinking of any possible loss of life that ~~might~~ ^{would} be incurred if either of them ~~might want to~~ ^{would like to} change the map by force. People may be willing to sacrifice lives - usually other people's lives - but they are rarely willing to sacrifice property, particularly if it is their own property. These ~~conclusions form~~ ^{are} the premises for what I am going to say now.

~~It is my view that~~ *I* ^a in the world which is characterized by a true strategic stalemate, based on intercontinental ballistic missiles ~~(carried by rockets which use~~ ^{solid fuel -} ~~solid fuel)~~ ^{solid fuel} America and Russia ~~can be~~ ^{would} be invincible and ~~can~~ ^{could} remain invincible and will ~~not~~ ^{they could} come to any harm if they ~~adopt~~ ^{would} a philosophy with respect to the bomb. ~~What is this philosophy?~~ ^{the right} which permits them to retain the bomb as an instrument of power rather than as a civilian weapon that can be used for killing the ~~population~~ ^{population} in cities or soldiers in combat. Because the bomb is an instrument of power and because governments are reluctant to relinquish instruments of power, they have shown themselves to be reluctant to relinquish the bomb.

The fact that the bomb might serve as an instrument of power to the governments of American/ and Russia because of the fact that it represents potentially an instrument of demolition and not because it represents potentially an instrument of mass murder. This fact has been probably overlooked in these past 12 years mainly because the first use of the bomb in Hiroshima and Nagasaki made the bomb into the symbol of mass murder.

In the world of the strategic stalemate towards which we are moving, Russia and America could come to an equitable understanding on the means through which either of them could resist the changing of the status quo, in case of a military invasion of a territory which they are committed to defend. If they go about it in the right way, they can stabilize the status quo under circumstances in which it would be exceedingly unlikely - I should say almost completely unlikely - that either Russia or American may want to pay the price. Economic loss could bring about the change which ~~they~~ they desire. This, however, presupposes that all of the large bombs are clean bombs.

Now ~~if~~ ~~it~~ as a first stage towards such an equitable understanding, Russia and America might ~~th/rt/w/ up/~~ draw up a list of the world's cities, and come to a meeting of the minds on the question of which Russian city is approximately equal to which American city. The cities could be divided according to size in 10 categories. Certainly first would be the large capitals, down to the smallest. Now America and Russia could then both issue by unilateral declaration a price list that would cover all the areas of the world in which for one reason or another they are committed to resist an armed invasion.

Now let me give you an example. Let me assume that there is a communist revolution in Mexico, and there is a communist government established in Mexico. After a few years there is some unrest in America about having such a foreign

ideology established so close to our southern boundary. The price as issued by Russia would list Mexico if Russia thinks that she has commitments to preserve the territories of Mexico. The Russian price might specify that if Mexico is invaded by American troops, Russia will give notice to two to four cities of the seventh category, and after four weeks, which is ample time for an orderly evacuation, Russia will destroy these cities - will demolish these cities - by a clean hydrogen bomb.

Only after Mexico has been invaded will Russia announce that they want to destroy two, three, or four American cities, and which will be the cities. This system will perfectly stable only if we ~~attempt~~ adopt the rule of one for one - that is, Russia must tolerate the destruction of two to four cities - as many as she has destroyed in America of the same ~~size / category /~~ size category, because if Russia does not follow this, the system will be not stable.

Now what is then the result of this operation? How would America look now upon the question of whether or not to invade Mexico? She will say Russia will lose four cities, we will lose four cities, and we will gain Mexico. We will gain no benefit from destroying four Russian cities - this will do us no good. So we just balance the advantage of eliminating the communist government in Mexico against the loss of four of our cities.

If Russia put the right prices in the price list, if she appraises our willingness to take a loss correctly, then we are not going to invade Mexico because then the four cities which are in the price list are such a price that we are not going to pay them for Mexico. Now ~~W~~ / Russia cannot increase the price. ~~W~~ cannot when she put in the prices for two to four cities and after we have invaded Mexico destroy six cities. But what Russia can do and would do is this. If the price list which she issued did not deter the United States from invading Mexico, then she will conclude

that she did not choose the right prices, and she can issue a new price list in which she would put all the prices somewhat higher, because she now knows she has underestimated our willingness to pay a price for invading other nations.

Now we will ask this. How can we be sure that Russia will give us notice in four weeks so that ~~she~~ we can evacuate our cities? How can we be sure that she will not drop a bomb on Philadelphia without any notice? I want to draw your attention to the fact that the embarrassment to the American government is ~~very~~ far greater if we are given four weeks notice, because how you clothe and feed these people, then if Philadelphia was destroyed with all its inhabitants. I therefore do not believe that any nation will violate its pledge.

We must not forget that in these days of the strategic stalemate, there is no cold war; there is friendship with Russia. It is indeed necessary because this stalemate will be stable only if Russia and American conclude something that they may regard as a reactionary agreement, and I think that Russia and America must conclude an agreement by which they will stop and mutually inspect all developments which are aimed at upsetting the stalemate by developing counter weapons against intercontinental ballistic missiles. If we should permit the development of counter weapons, then the arms race would be on again, and this would be a very dangerous situation. Now Teller would say that it is reactionary to prohibit the process of science, and maybe it is reactionary, but perhaps the time has come for us to become reactionary.

Now I want to tell you why I believe that inspection is feasible if we would base inspection of mechanical devices, and if we use as inspectors our own citizens ~~with patriotic duty~~ whose patriotic duty it is to cooperate. The agreement not to develop counterforces against the intercontinental ballistic missiles will be essentially policed in America by American scientists and in Russia by Russian scientists.

I have described sufficiently how this inspection would operate. I do not need to say any more about it.

You see now why I think it is very important that the bomb should be clean because only then can we abolish a war in which people are killed. I think that this ^{morally} is/desirable, I believe that it is politically necessary because if people are killed emotions are aroused and pledges are revoked. And let me say again that I think that those who assume that the stockpiles of bombs will not be eliminated, that any agreement in the next 10 years will stop short of eliminating the bombs, should not now press for stopping the bomb tests but should press for full exchange of information with Russia and America for the development of the hydrogen bomb. I do not think that America could lose anything by this or Russia would lose anything by this -- I think that they would both gain. And I propose that if the government does not accede to this demand, that we solicit the help of the churches, that we should organize prayer meetings in which we pray to God that there should be a patriotic traitor among us who will inform the Russians on how to make clean bombs.

Economic aspects of
production of plastics
and synthetic fibres
in USA since World War II

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