December 3, 1945

Talk for December 3, 1945 by Leo Szilard.

On the 3rd of March 1939 Dr. Walter Zinn and I performed a simple experiment on the seventh floor of the Pupin Building at Columbia.

After two days of preparations, everything was ready and all we had to do was to turn a switch, lean back and watch the screen of a television tube.

If flashes of light appeared on the screen that would mean that neutrons were emitted in the fission process of uranium and this in turn would mean that the large scale liberation of atomic energy was just around the corner.

We turned the switch and we saw the flashes.

We watched them for a little while and then we switched everything off and went home.

That night there was very little doubt in my mind the world was headed for grief.

This crucial phenomenon was independently discovered just about the same time by Anderson and Fermi, also at Columbia, and by Halban, Joliot and Kovarski in Paris.

They used different methods but arrived at the same conclusions and I have, therefore, good hopes that my own plea of not guilty will ~~reserve~~ receive merciful consideration in the heavenly court of justice.

From March until October in 1939 work in this field was carried on by a handful of men who lacked many of the things they needed but most of all lacked official recognition.

From October 39 until the end of 41 we still lacked many things which we needed but in addition to this we suffered from having official recognition.

I wonder whether the real story of this period will ever be told.

It is a story of heartbreak and frustration.

During this period we became more and more concerned, as time went on, about what the Germans might be doing and this made our slow speed all the more intolerable.

As Dr. Urey once said, it was like a nightmare.

At the end of 41 there was an important change for the better.

This change came in the wake of a visit from overseas by Dr. Oliphant of Birmingham, England.

(Oliphant attended one of the official meetings in Washington and was not very much impressed by what he heard and saw.

He travelled across this continent from the Atlantic to the Pacific and disregarding international etiquette, told all those who were willing to listen what he thought of us.

Considerations, other than those of military security, prevent me from revealing to you the exact expressions which he used.)

If Congress knew the true history of the atomic energy project, I have no doubt but that it would create a special medal to be given to meddling foreigners for distinguished services, and Dr. Oliphant would be the first to receive one.

During 43 and early in 44 we were seriously worried about the possibility that Germany might spring a surprise on us.

Today we know that the German scientists did not believe that atomic bombs were within the realm of practical possibility and their work was not directed toward such a goal.

In 45 we began to worry about how we ourselves might make use of our bombs.

In July about sixty atomic scientists at Chicago expressed the view that Japan was essentially defeated and that it would be wrong to attack her cities with atomic bombs as if such bombs were merely another military weapon.

Many of us felt that the United States ought not to set the precedent of using atomic energy for purposes of destruction.

As you know these views did not prevail.

After Hiroshima we were requested to exercise the utmost discretion in our public expressions of opinion.

Most of us responded to this request because we took it to mean that Hiroshima was being followed up by discussions between the United States, Great Britain and Russia as indeed we think it should have been.

Naturally we did not want to make public statements at the risk of embarrassing the President or the Secretary of State if they were engaged in such discussions.

On the 9th of October however, it transpired that the earlier request for exercising discretion arose from a desire of having the May-Johnson Bill passed--I quote--"without unnecessary discussions in Congress."

Thereupon the Atomic Scientists of Chicago issued a manifesto calling for adequate hearings in Congress and thus began the fight of the scientists against the May-Johnson Bill.

P→ Turning our attention to the international problem which is involved, we may take encouragement from the fact that this has so far not become a political problem.

The essential difference which you may observe in Washington is not between Democrats and Republicans or between Progressives and Conservatives but rather between those who have understood what atomic bombs mean and those who have not.

P→ It would seem therefore necessary somehow to give everyone a conception of the essentially non-terrestial nature of the atomic bomb.

I used to think that this could be achieved by explaining what atomic bombs are and just what they will mean in the future.

It may not be possible however to get across this message to the majority of people within Congress or without.

It may be necessary to impress the senses as well as to impress the mind.

P→ To most men it makes all the difference in the world whether they read about the bombardment of a city or whether they actually live through such a bombardment.

And perhaps it is true of all of us that we would have no conception of a thunderstorm if we read an accurate description of the flash of light, representing the lightning, which is followed, after a period of silence, by the noise, representing the thunder.

It is probably true of all of us that we have to live through a thunderstorm before we know what a thunderstorm is.

The most important contribution towards putting our foreign policy on a sound basis might therefore consist in a demonstration of atomic bombs staged for Members of Congress, the President, and such others as may benefit from it.

Those of my friends who saw the test in New Mexico tell me how shaken they were by the phenomenon which they witnessed.

Most of them were at ten miles distance or farther and the effect would be even greater if the demonstration were watched from somewhat nearer.

Let me try then to reduce to a simple formula what I believe to be the difficulty that we have to overcome.

Politics has been defined as the art of the possible.

Science might be defined as the art of the impossible.

The crisis which is upon us may not find its ultimate solution until the statesmen catch up with the scientists and politics, too, becomes the art of the impossible.

This, I believe, might be achieved when statesmen will be more afraid of the atomic bomb than they are afraid of using their imagination, because imagination is the tool which has to be used if the impossible is to be accomplished.

It is no more difficult to make inventions in the field of human relationships than it is to make inventions involving neutrons and protons.

It is quite true that you cannot change human nature but neither can you change the nature of neutrons.

This is an undeniable fact yet no physicist would keep reminding us of it just because he personally feels unable to design machinery in which neutrons would perform as we wanted them to perform.

There is nothing wrong with human nature, but either the statesmen display too little imagination or maybe the scientist display too much of it.

It might be better for the world if it were the other way around.

Naturally, I am not really worried about the future, except perhaps the next fifteen years.

Appendix

Having thus completed my speech, I ought to sit down now but I hesitate to do so without having at least made an attempt towards a positive contribution.

It seems to me that the greatest danger which we face at present is the possibility of a war which would arise more or less automatically out of an arms' race in which the U. S. and Russia built up stockpiles of atomic bombs.

Is it possible to avert this danger?

Let us assume that the U. S. and Russia agreed to have no stockpiles of atomic bombs and to permit no manufacture of atomic bombs on their territory.

Let us, moreover, assume for the sake of argument that they both reserve the right to abrogate this arrangement at any time.

Could Russia and the U. S., under present-day conditions, make arrangements through which they could convince each other, as well as other nations that secret violations of the agreement would be detected and would become known to the world?

My answer to this question is emphatically "Yes"!!

Clearly the arrangements would have to include the right of inspection on the part of some international agency which might be set up under the UNO.

I do not propose however to discuss tonight this more or less mechanical aspect of the question, but rather emphasize another aspect of it.

If Russia and the U. S. wanted to reassure each other concerning Secret Violations they might go about it in the following way:

After the agreement is ratified and became the law of the land, the President of the United States could call on all-American engineers and scientists and ask them to pledge themselves to report to an international agency all Violations committed on the territory of the United States.

The Espionage Act would have to be modified so that it should no longer cover information of a scientific or technical nature, whether or not it may relate to the national defense.

NEWS FROM THE Nation ASSOCIATES

20 Vesey Street · BArclay 7-1066 · New York 7, N. Y.

For Release:

ADDRESS BY DR. LEO SZILARD, ATOM BOMB SCIENTISTS, METALLURGICAL LABORATORY, UNIVERSITY OF CHICAGO, AT THE DINNER FORUM OF THE NATION ASSOCIATES, DECEMBER 3, 1945, HOTEL ASTOR.

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If we manage to get through the next fifteen years and be still alive, we will probably emerge immune to atomic bombs.

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President of the United States could call on all-American engineers and scientists and ask them to pledge themselves to report to an international agency all Violations committed on the territory of the United States.

The Espionage Act would have to be modified so that it should no longer cover information of a scientific or technical nature, whether or not it may relate to the national defense.

All men classed as scientists or engineers would be invited to spend each year four weeks' vacation, or six weeks if you wish, abroad with their families as guests of the United Nations Organization.

The Russian government would be expected to take similar action with respect to its own scientists and engineers.

These vacations abroad would give an opportunity to all those who wish to report secret violations to secure immunity by staying abroad rather than returning home after having delivered their report.

Clearly, the vast majority of American scientists and engineers would respond to such a request by the President of the United States, and would not hesitate to report any illicit activity.

My knowledge of the Russians is far less complete -- but even if only a small percentage, say 10 per cent, of them responded, as the Americans would respond, they would represent a far more reliable source of information than the body of foreign inspectors whose activities they would supplement.

Secret violations of the agreement would in these circumstances be risky undertakings indeed.

If time permitted we could examine to what extent we could remove any incentive which Russia or the United States might have towards invoking their legal right and abrogate such an agreement after it had been in operation for a number of years.

We cannot go into these questions tonight.

An arrangement of this sort can, of course, not rule out the possibility of war, and in case of war, sooner or later, atomic bombs would drop from the skies.

Yet under such an arrangement war would break out only if one of the parties actually decided to start an arms' race and risk a war.

It would give us a respite which would be worthwhile to have provided we know how to make use of it for building a permanent peace.