

LEO SZILARD

February 28, 1955

Memorandum to "Letter to the Editor", New York Times, February 6, 1955.

It is not likely that any group which attempts to think through the problem of resolving the Russian-American conflict on the basis of enlightened self-interest will succeed in coming up with the right answers to the difficult problems which face the world today. The right answers cannot be found by a straight application of logical reasoning and, in order to find them, one must have ideas. We do not know just how ideas come about, but somehow or other, enlightened self-interest does not seem to be very conducive to their generation. Somehow, enlightened self-interest lacks in appeal to the imagination of Man.

Bertrand Russell, in his book, Icarus, discusses how the "fixed price" came into existence in England. Up to that time, it took protracted negotiations to buy a pair of shoes in a shop. The shopkeeper started out by asking a price which was way too high, and the customer offered a price which was way too low. After long negotiations, the pair of shoes changed hands at a reasonable price -- if one does not count the time invested by customer and shopkeeper in the negotiation of the price. The first shopkeepers to introduce the fixed price were -- according to Russell -- Quakers, who felt it was wrong to ask for a higher price than the merchandise was worth. The customers saved time by buying in these Quaker shops, and preferred to buy in them, with the result that the Quakers became prosperous. Russell stresses the fact that any merchant guided by enlightened self-interest could have arrived at the same conclusion which the Quakers reached on the basis of a moral argument, but the fact remains that enlightened self-interest did not produce the "idea" which was required.

Ideas of greater depth are needed today if we are to find the right answers to the problem that confronts the world. To come up with these ideas is a task that requires qualities of the heart as well as qualities of the intellect.

Provided that the necessary moral and financial support can be obtained, I shall try to assemble a group of men, perhaps 5 to 10, who would make themselves available on a full-time basis for about 6 or 7 months, in order to carry out the study described further below. I have so far written to the following men, inquiring whether they might be available for the purposes of such a study:

Stringfellow Barr, formerly President of St. Johns' College, author of the book, "The Pilgrimage of Western Man".

Father John Cavanaugh, formerly President of Notre Dame University.

Colin Clark, economist, formerly in Australia, at present at Oxford, England.

Colonel Faymonville, Ret., formerly Military Attache at the American Embassy in Moscow.

General Hugh B. Hester, Ret., lawyer, formerly in charge of supplies of the American Occupation Army in Germany.

Marshal MacDuffie, formerly in charge of the UNRA Control Commission in the Ukraine, lawyer, author of the recent book, "The Red Carpet".

With the exception of Colonel Faymonville, I know them all personally, and I am approaching Colonel Faymonville through General Hester, who knows him well.

It would be my hope that a group of men of this type would come up with ideas which other groups, motivated by enlightened self-interest, might fail to produce.

In the following, I shall refer to the full time working group here proposed as the "Commission" in order to distinguish it from the "Board", which might be set up later. Such a Board could be composed of distinguished men, who serve on a part-time basis; they would scrutinize the results of the Commission's work from the point of view of enlightened self-interest and, if justified, they would attest the validity of the conclusions reached by the Commission from this point of view.

The Commission's task is not to arrive at recommendations concerning the conduct of American foreign policy, and the members of the Commission must not

consider that their responsibility is primarily to the American people. Rather, the Commission ought to function as follows:

(a) They shall devote perhaps 12 weeks to clarifying their own minds on what they themselves would consider to be a desirable and adequate international arrangement, from the point of view of the nations involved.

(b) Having accomplished this, the Commission shall discuss their thoughts with individual members of the Russian, British, and American Governments and, if practicable, also the Chinese Government. Thus, the Commission shall learn how these individuals, who are entrusted with Governmental responsibilities, feel about the Commission's plan in general. Furthermore, the Commission shall find out through such discussions how these individuals look--from the point of view of the national interest which they represent--upon the specific proposals contained in the plan. Some of these proposals would adversely effect vested interests wielding political influence and the discussions should enable the Commission to assess the practical difficulties which these proposals are likely to encounter.

It is assumed that this phase of the work of the Commission would take about 8 weeks.

(c) Subsequent to these discussions, the Commission would then revise their proposals and also fill in at least the most important details which are needed in order to make the plan meaningful.

It is estimated that this phase of the work might take 6 weeks.

It is not possible to have all the talent required assembled in a small full-time Commission. Therefore, from time to time the Commission will have to call in experts in the various fields.

The Commission ought to start its work at once. As its work progresses and its ideas begin to crystalize, they could begin to assemble a Board of distinguished men, well thought of on the local American scene. The Board would, from time to time, meet with the Commission and gradually familiarize themselves with the Commission's reasons for choosing certain solutions and rejecting others. The Board's real function would begin only after the Commission has completed its work, when the issue of convincing the Administration, Congress, and the public of the validity of the Commission's conclusions will have to be met.

\*\* The End \*\*

April 16, 1955

ADDENDUM TO MEMO OF FEBRUARY 28.

Please note that the function of the Board is to judge the recommendations of the Commission from the point of view of enlightened self interest and that it must, therefore, be composed of American citizens only. The function of the Commission is to conduct an enquiry into what appears to be both desirable and likely to be acceptable to the various governments. The Members of the Commission must not regard themselves as representing America's interest and they may be foreigners, as well as Americans.

I have asked a few men whose names are given in the Memorandum whether they would make themselves available on a full time basis for the work of the Commission and I shall ask some others the same question. All these are tentative enquiries for the purpose of finding out whether qualified men of standing would make themselves available. The final composition of the Commission will not be determined until the point is reached where we are ready actually to set up an operation.

The response of those so far asked is helpful from the point of view of guiding our further thoughts and it appears that about half of those approached say that they will make themselves available. It is my impression that it will be possible to obtain the services of the right kind of people for the work of the Commission.

To my mind it is not desirable to have the Commission composed of experts. The Members of the Commission should be laymen who have faith in the possibility of working out an arrangement. In addition they must have imagination and critical ability. They can greatly profit by discussing their problems for days and, perhaps, weeks with

experts, including those who have past experience in International negotiations. To learn from the experts is important but the experts must not run the show.

Since an important function of the Commission is to explore the thinking of Members of the Russian, Chinese, British and American governments, it would be well to obtain half of the financial support needed for the work of the Commission from the Russian government. Attempts in this direction will be made. The other half ought to come from American sources, from private individuals, Foundations or, conceivably, from the Government.

Since the work of the Commission consists in an enquiry, the fund needed for its work could be administered by a University or some other tax exempt educational or research institution. Donations to this fund would, therefore, be tax exempt.

The work of the Board is more political and funds for its operation would have to be administered in a different manner. The financing of the Board must come from purely American sources.

Leo Szilard

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\*\* The End \*\*

May 23, 1955

Memorandum

Marshall MacDuffie  
Chief Council, The Constitutional Rights Sub-Committee of the Senate Judiciary Committee  
Senate Office Building  
Washington, D.C.

General Hugh B. Hester  
Penn-Sherwood Hotel  
Philadelphia, Penn.

Collin Clarke  
Agricultural Economics Research Institute  
Parks Road  
Oxford, England

Father Johnavanaugh  
University of Notre Dame Foundation  
Notre Dame, Indiana

Robert Mattison  
Foreign Operations Administration  
Old State Department Building  
Washington, D.C.

Robert S. Bowie  
Chief of the Policy Planning Staff  
State Department  
Washington, D. C.

Professor Hans Bethe  
Physics Department  
Cornell University  
Ithaca, N.Y.

Dr. Francis Wilcox  
Chief of Staff  
Senate Committee on Foreign Relations  
Senate Office Building  
Washington, D.C.

General George Olmsted

The enclosed project represents my present thinking on the plan which I discussed with you and I would appreciate your filing it for future reference. It has evolved through conversations with those to whom this <sup>Note</sup>~~memorandum~~ is addressed as well as others.

August 19, 1955

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*about*  
Memorandum ~~on~~ the Einstein Letter:

Fission of uranium was discovered in Germany by Hahn and Strassman in the late fall of 1938, but the possibility of setting up a chain reaction in uranium did not directly follow from this discovery. The news of Hahn's discovery was brought to Princeton by Niels Bohr who arrived about the same time as Hahn's paper. I first heard about this discovery from Dr. E. P. Wigner in Princeton in January 1939 and saw at once that if neutrons are emitted in the fission of uranium a chain reaction might be possible. I pointed this out to Wigner who agreed at once. The same thought occurred independently to Fermi and to Joliot and each of us proceeded to set up an experiment that would show if neutrons were in fact emitted. These experiments were completed early in March, and showed that uranium emitted about two neutrons for ~~an~~ <sup>each</sup> neutron absorbed that causes fission. Right after this Fermi and I teamed up at Columbia University to investigate the possibility of setting up a chain reaction in a uranium-water system. At the end of June 1939 these experiments were completed and gave a negative result. At this point Fermi left New York to give a summer course in Ann Arbor.

Early in July I began to investigate the theoretical possibility of setting up a chain reaction in a graphite-uranium system. This looked at once very promising and I bombarded Fermi with letters urging that we take immediate action to set up large scale experiments. I also urged the head of the Physics Department at Columbia, G. B. Pegram, that we arrange ~~for~~ <sup>were</sup> experiments that ~~needed~~ <sup>were</sup> right away but soon it became clear that nothing much would be done until after the vacations some time in October.

At that point I took up the matter with E. P. Wigner in Princeton, who like me believed that war was imminent and we both became greatly concerned that Germany might obtain large quantities of uranium from Belgium. We felt that we ought to advise the Belgian Government of this danger. At this point I remembered that Einstein knew the Queen of the Belgians and we decided to ask him that he help us contact the Belgian Government. Einstein had not been aware of the possibility of a chain reaction in uranium but as soon as he heard my story he at once grasped the implications and was instantly ready to help and if necessary to stick his neck out - as they say. Before contacting the Belgian Government it seemed desirable to advise the State Department of

P.T.O.

the step we propose to take, and Wigner suggested that we draft a letter to the Belgian Government, send a copy to the State Department and give the State Department two weeks in which to object if they are opposed to Professor Einstein sending such a letter. This is where the matter was left when Wigner and I left Einstein's house on Long Island.

Somewhat, this procedure seemed to be an awkward one and so I decided to consult friends with more experience in things practical than we were. I went to see in New York Dr. Gustaf Stolper and told him of our need to establish contact in this matter with the U. S. Government. He recommended that I talk to Dr. Alexander Sachs. Dr. Sachs seemed very much interested and said that he would be willing to take a letter in person to President Roosevelt if Professor Einstein were willing to write such a letter. Dr. Wigner in the meantime left for the west coast, but Dr. Edward Teller who spent the summer teaching at Columbia was available. Teller drove me out to Long Island to Einstein's house. As I remember, Einstein dictated a letter in German which Teller took down and I used this German text as a guide in preparing two drafts of a letter to the President, a short <sup>er</sup> one and a longer one, and left it up to Einstein to choose which he liked best. He chose the longer draft, ~~of which you will find enclosed~~

~~copy~~  
I also prepared a memorandum to accompany Einstein's letter and both the letter and the memorandum were transmitted to the President by Dr. Sachs in October 1939. In response to Einstein's letter, the President appointed a committee under the chairmanship of Lyman J. Briggs, Director of the National Bureau of Standards, which first met on October 21, 1939. This was the beginning of the government's active interest in the work on uranium.

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MEMORANDUM ON THE PROPOSED INSTITUTEBuilding

There will be required <sup>15</sup>15,000 sq. ft. of laboratory space. Of these, <sup>10</sup>10,000 sq. ft. will be used for basic biological research and <sup>5</sup>5,000 sq. ft. will remain in reserve for projects concerned with practical applications that might arise out of the basic work. It is assumed that it will cost about one-half million dollars to build and equip such a laboratory, but this point needs to be checked.

Staff:

The permanent staff will consist of <sup>6</sup>seven Ph.D's and <sup>6</sup>seven technicians. Another <sup>14</sup>14 Ph.d's and another <sup>10</sup>10 technicians may work at the Institute in basic research on temporary outside grants. Additional <sup>personal</sup>technicians will be employed for special projects aimed at practical applications.

Secure Income:

The salaries of the permanent staff and a minimum for expense and equipment for the work of this staff will amount to \$150,000 a year. This represents about \$<sup>25</sup>25,000 per year per Ph.d. This income could perhaps be made available by the Foundation in two parts:

- (a) The Foundation might make a pledge to turn over to the Institute \$100,000 a year with the proviso that this sum would be raised if the cost of living rises, and with an escape clause whereby the Foundation need not turn over to the Institute in any one year more than <sup>5</sup>5% of its income.

(b) The Foundation might enable the Institute to build up a revolving fund by making initially contributions that could exceed \$100,000 a year according to the following schedule:

In the first three years the Foundation might turn over to the Institute a total of 75% of its income. In the subsequent three years it might turn over to the Institute a total of one-half of its income, and thereafter it might turn over to the Institute a total of one-third of its income until such time as a revolving fund of \$1 million is built up.

The Institute will be limited at all times to the drawing of a maximum of \$150,000 a year out of funds provided directly or indirectly by the Foundation, and it could draw less in the first few years. The excess income from the Foundation would go into the revolving fund, and when that fund reaches \$1 million, from then on the Foundation could limit its contributions to \$100,000 a year to which it is pledged in the long run.

It is assumed that this revolving fund of \$1 million will provide the Institute with an endowment income of \$50,000, and this income together with the \$100,000 obtained yearly from the Foundation would give the Institute a secure income of \$150,000 a year. I assume that outside grants would also amount to about \$150,000 a year for basic research alone, and that additional special grants would be forthcoming for special projects which are aimed at practical applications of the results obtained in basic research.

Location:

A suburban location near New York City is proposed. The Bronxville-Pelham area is one possibility. New Rochelle might also be considered, and perhaps also Greenwich. Housing is expensive in these areas, but if the staff is required to occupy certain accommodations which the Institute might make available to them in its immediate vicinity they could, I believe, deduct their rent from income before taxes. The staff ought to be required to live in the vicinity of the Institute in order to induce them to return to the laboratory after dinner whenever their work makes it desirable for them to do so.

Affiliation with some University:

It would be desirable to have the permanent staff members affiliated, as research associates, with either the New York University Medical School or with the Albert Einstein College of Medicine (which is located three miles from Pelham), or with Columbia University Medical Center. This, I believe, would be easy to accomplish if the Institute is staffed with the kind of men that I have in mind.

MEMORANDUM ON THE PROPOSED INSTITUTEBuilding

There will be required 20,000 sq. ft. of laboratory space. Of these, 12,000 sq. ft. will be used for basic biological research and 8,000 sq. ft. will remain in reserve for projects concerned with practical applications that might arise out of the basic work. It is assumed that it will cost about one-half million dollars to build and equip such a laboratory, but this point needs to be checked.

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- (a) The Foundation might make a pledge to turn over to the Institute \$100,000 a year with the proviso that this sum would be raised if the cost of living rises, and with an escape clause whereby the Foundation need not turn over to the Institute in any one year more than 70% of its income.

(b) The Foundation might enable the Institute to build up a revolving fund by making initially contributions that would exceed \$100,000 a year according to the following schedule:

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Building	\$300,000 possibly \$400,000
6 scientists, 5 technicians	100,000 to \$105,000
4 additional scientists and 10 technicians	5,000 average
Animal Laboratory	1,000 a month
Revolving Fund	50,000
Upkeep building, administra- tive services	35,000 to \$38,000
Incidentals	8,000
Replace broken material Add new equipment	600 a month
Machinist	7,200 to \$7,500 a year
5 People in office	4,200 ea. a year. approx.

DRAFT

September 13, 1955

After my conversation with Dr. Szilard, I sum up the Biology Institute as follows:

If we enter into this matter in which Louise and I are in favor, it would seem to me that a capital budget for the building would be around \$300,000. It could go as high as \$400,000 including the necessary equipment. In the beginning, I calculate we would have a surplus of around 40% to 50% of space.

Re. the Operating Budget. I calculate 6--scientists and 5--steady technicians - \$100,000 to \$105,000, rough figure. Also, if the outside grants equal the amount of the inside grant there would be 4--additional scientists and 10--additional technicians. These technicians would average \$5,000 because it would not be as steady.

In addition to that there would be needed an animal laboratory. Cost of the animals would be about \$1,000 a month. I have asked Dr. Szilard to look into this.

It would be when completed, maybe not all to start with, and we calculate a minimum staff and everything running, as follows:

One bookkeeper, who would be a stenographer, one record keeper who would take care of the files and telephone, one janitor, one special file clerk and librarian, one steady machinist who could handle a lathe and various necessities, and one stenographer. This budget could be divided into two parts. In the beginning the bookkeeper would be stenographer, file clerk and telephone operator, and we would need a janitor, one machinist, one gardner and general housekeeper and handy man.

The original budget would be approximately five people excluding the machinist. The machinist we would figure to receive \$7,200 to \$7,500 a year. The others will average \$4,200 approximately.

We have not estimated the amount of surplus necessary in the rotary fund to replace broken material and add new equipment from time to time. We think another \$600 a month should more than cover it. We didn't add incidentals, telephone, light and heat which would probably be another \$600 a month. More than likely \$12,000 to \$15,000 a year maximum would cover it, more likely to be \$8,000.

Therefore, total expenses for the first year, I calculate as follows:

\$100,000	Salaries
10,000	Incidentals
12,000	Animals

Revolving fund is necessary so that we can assure those coming in on grant certain reasonable assurances and that has to be discussed. I think \$50,000 will cover it; maybe \$100,000.

When you get going you would have the upkeep of the building, administrative services, around \$35,000 to \$38,000, maybe as high as \$40,000. This leaves the problem of the building, permanent equipment and the question as to whether an animal house would be in conjunction with the present erection of the building.

The next problem is the security of the people. If you take people out of college, they will not want too much security. If you get older men which you will need as they are the teachers and give them too much security they will not produce and we will not derive the benefits of their knowledge. A little wisdom exercised both ways is a better part of valor it seems to me. With the young men you could make an agreement with them for several years. You

You can work out a scheme whereby if a man moved into the community and found things not to his liking and couldn't get a job in a certain time that the salary will continue for x time. If you freeze the brains that get into this, your Institute will become sterile. It is only by fresh thinking that you can keep it alive. Your problem here, in my opinion, is that you need wisdom and experience and you need youth and courage.

I won't go into the following proposition unless we all agree on it. I would like the entire staff, including the janitor to share in the proper percentage of the patent rights. I don't care what the percentage of the take on the patent rights is but the scientists, technicians, janitor, etc. - everyone on that team will share. I have done it with the Roswell Foundation through Mr. Dewey and Dr. Moore. As to how it is divided, I would like to sit in on that. The balance of the money is to go back into the Foundation for use in the very project which was developed.

I don't go along on your thinking as to the Nobel Prize. The Nobel Prize certainly doesn't buy anything; certainly nothing in Saks. It is a one-time shot. What I am talking about is a continuous royalty on something to be realized tomorrow.

My judgment would be as follows:  $1/3$  of the money is to go to the Institute,  $1/3$  to the workers of the Institute, and  $1/3$  to the Rosenstiel Foundation which in turn will turn the money over to the Institute to be used for the study re. lymph glands, which is our interest in putting up this Institute.

One-half of the money will be spent on the disease of the lymph glands and the other half we don't care.

Dr. Szilard suggests a Board of Directors as follows:

Linus Pawling, Nobel Prize Winner, California School of Technology

H. J. Mueller, Geneticist, Bloomington, Indiana

S. C. Urey, Nobel Prize Winner,

Harrison Brown, California Institute of Technology

Fritz Lippman, Nobel Prize Winner 2 years ago, Biochemist, Harvard

I would like to suggest:

Dr. Haddow of the Beatty Institute

Dr. Florie (?)

Dr. Chaim

An appointee of Lord Beatty, Winston Churchill or Brendan Bracken

Karl Meyer who has had great administrative and semi-scientific

experience and headed the Infantile Paralysis Foundation in Georgia.

Probably a man like Dr. Salk

Dr. Erik Skold (?) or Dr. Elis Sandberg (?) from Sweden

Dr. from the University of Heidelberg who did work on

trauma and all of its aspects.

In other words I have in mind an International Association  
Trusteeship with one or two men picked from each country so we  
can get an interchange of information.

Lewis S. Rosenstiel

cc: Cong. Thomas Dodd  
Mrs. Sidney Frank  
Judge Robt. Marx  
Dr. Leo Szilard