

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 18, 1956

Dr. George Beadle
Division of Biology
California Institute of Technology
Pasadena, California

Dear Dr. Beadle:

When I last talked to you over the telephone in August I raised with you the question of changing the original draft of my memorandum which refers to a "Senior Research Scientist-At-Large" rather than to a "Research Grant" to conform to the rest of the application. You thought that the memorandum had been changed but when I looked again at the mimeographed copy which you sent me, I saw that it had not been changed. I thereupon telephoned Mr. Fling and asked him to make the required change.

Today I received a copy of the material sent to Washington and find the memorandum still unchanged -- in the form of the original draft.

Enclosed I am sending you the revised version of this memorandum. Nothing has been changed except for the appropriate references to a "research grant" throughout. I cannot reach Consolazio until Friday, the 21st, so I am going to send him twenty copies of the revised memorandum and leave it up to him to decide whether the revised version may be substituted for the original draft, or what else he thinks should be done about it.

The documents sent from Pasadena to the National Science Foundation include also a letter from you to Mr. Consolazio dated August 13, 1956 which refers to my appointment as a "Roving Professor". I won-

der whether you can look at this letter and decide whether this is how you want to leave it.

Among the documents sent from Pasadena to the National Science Foundation is a letter by Hotchkiss addressed to the National Science Foundation which starts out and ends with a reference to "Senior Research Scientist." I suppose this does not matter one way or another but I wanted to draw it to your attention.

Sorry if this slight mix-up is causing you any trouble.

Enclosed you will find a copy of a letter which I wrote to Sewell Wright which might perhaps interest you. If you have any comments, please let me know when an occasion arises.

I hope you have enjoyed your visit to Japan.

With kind regards,

Sincerely yours,

Leo Szilard

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Encl.

The Quadrangle Club
The University of Chicago
Chicago 37, Illinois
September 21, 1956

Dr. George W. Beadle
Division of Biology
California Institute of Technology
Pasadena, California

Dear Dr. Beadle:

I talked this morning to Consolazio over the telephone. Everything is under control and there is no need for you to take any action on the basis of my last letter to you. Mr. Consolazio will substitute the twenty copies of my corrected memorandum for the original version. Hotchkiss is going to write today a new letter of support and Consolazio will have twenty copies of it made in Washington. Your own letter of August 13th is acceptable as it is and there is no need for you to write a new one.

Many thanks for all the trouble you have taken in this matter.

With kind regards,

Sincerely yours,

Leo Szilard

March 14, 1961

Dr. George Beadle
Office of the Chancellor
Administration Building
The University of Chicago
Chicago 37, Illinois


Dear Dr. Beadle:

I expect to be staying in Washington at the Hotel Dupont Plaza for the next few weeks, and if you come to Washington and happen to have time, perhaps we could have a chat about things.

Enclosed I am sending you a memo which might perhaps interest you. I am in the process of discussing the project with the Atomic Energy Commission. Enclosed also is a book, in page proof, which I have written and which will be on sale on April 28th. Some of the stories might perhaps interest you. The book will also be published in England and Italy, and I have just learned that 50,000 copies will be printed in Germany.

With kind regards,

Sincerely,


Leo Szilard

Geneva, 12 July 1963

Chancellor George Beadle
Administration Building
The University of Chicago
Chicago 37, Ill.
USA

Dear Dr Beadle,

... Enclosed is a manuscript which I am at present privately circulating and which might perhaps interest you. The straw that broke the camel's back in this case was the case of two patients described in the May issue of the Proceedings of the National Academy of Sciences by Grumbach, Morishima and J. Herbert Taylor. I was wondering whether I ought to submit this manuscript to Perspectives of Biology. Any comments which you might care to make would be appreciated.

My address during the summer is: c/o Dr Martin Kaplan,
World Health Organization, Palais des Nations, Geneva, Switzerland.

Sincerely yours,

Leo Szilard

... ENCL: Manuscript

THE UNIVERSITY OF CHICAGO
CHICAGO 37 • ILLINOIS

OFFICE OF THE ~~CHANCELLOR~~ PRESIDENT

August 2, 1963

Dear Leo:

That's an interesting paper you sent me a copy of.

I must confess I do not see that the basic assumption is justified - i.e., that the father-son + mother-daughter resemblances are not readily accounted for in terms of classical genetics.

But granted it is justified, your hypothesis to explain it seems to me pretty gratuitous. The evidence for inactivation or loss of autosomes in mammals (mouse and man) is pretty tenuous. Hume Russell of Oak Ridge has a ^{recent} paper on X-autosome translocations that bears on this. I believe it is in Science but I do not

PRESIDENT
OFFICE OF THE ~~CHICAGO~~
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Professeur Leo Szilard
c/o Dr Martin Kaplan
World Health Organization
Palais des Nations
GENEVA
Switzerland

AIR LETTER • AÉROGRAMME • PAR AVION

FIRST FOLD

SECOND FOLD

Have the reference handy.
Jim wants to wait the
more encouraging.
Hope we can meet with
you. Best wishes,
Dorothy Borden

Dr. George Beadle, Chancellor
Office of the Chancellor
Administration Building
The University of Chicago
Chicago 37
Illinois.

Geneva, 2nd August, 1963

Dear Dr. Beadle,

Enclosed is a preprint which might perhaps interest you.

I do not know why I have ^{not} ~~thought~~ of this before, but somehow I confused in my mind the concept of the "viability" of the spermatozoon with the concept of its "competitive strength" and this prevented me from seeing what the right experiments would be.

Michael Fischberg, whom you presumably know from Oxford, but who is now Professor of Zoology in Geneva, offered to get me together, in September, at the International Congress of Genetics in Holland, with several English geneticists with whom I could discuss experiments of the type I am proposing. Unless I learn something from these discussions, which makes the publication of this manuscript appear to be inadvisable, I intend to have it printed at an early date.

With best wishes.

Sincerely yours,

Leo Szilard.

Dr. George Beadle, President
Office of the President
Administration Building
The University of Chicago
Chicago 37, Illinois
United States of America.

Geneva, 8th August, 1963

Dear Dr. Beadle,

Many thanks for your note of August 2nd, which refers to the first of the two manuscripts that I sent you.

A few years ago, I told Tracy Sonneborn that I was puzzled by the apparent high frequency of the resemblance of children to one of their parents and found that he was puzzled about this also and inclined to think, as I was, that there must be some mechanism - as yet unknown - which is responsible. It is, of course, possible that both of us were wrong. In order to resolve this issue, one ought to make an objective determination of the frequency of such resemblances and this would not be too difficult to accomplish.

There is no evidence, either for or against, inactivation of a particular autosome in mammals. If the paper of Mrs. Russell, to which you refer, is the same one which I have read, then all that is established, in this regard, is one case where a segment of an autosome which is carried by an X-chromosome, remains functional, even if the rest of the X-chromosome may not be functional.

Incidentally, the inactivation of an autosome by ^{the} homologous chromosome is not the only explanation that one might consider. It has the advantage over other explanations, that it is independent of what one may assume concerning the mechanism of morphogenesis, which determines the perceptible phenotype.

If one were to assume that ~~this~~ morphogenesis is controlled by the ratio of the products of certain genes, then one might postulate

that these genes are part of the same operon, and that a strong resemblance to the father, or to the mother, arises because the operon inherited by the child, from the father, or from the mother, is much less strongly repressed than the operon inherited from the other parent.

I refrained from discussing this explanation in my manuscript for two reasons:

- (a) because I do not like to make a specific assumption about the mechanism of morphogenesis, at a time when we know nothing about this mechanism, but have good hopes of finding out something about it in the next few years; and
- (b) because while writing the paper, I remembered having once read the minutes of a meeting of the German Physical Society which recorded that in the discussion of the paper read, "Dr. Muller presented two explanations, but expressed doubt as to the existence of the phenomenon".

With best wishes,

Sincerely,

Leo Szilard

c/o Dr. Martin Kaplan, World Health
Organization, Palais des Nations,
Geneva, Switzerland.

Post
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Prof Leo Szilard
c/o Dr Martin Kaplan
World Health Org.
Palais des Nations
Geneva
Switzerland

AIR LETTER • AÉROGRAMME • PAR AVION

FIRST FOLD

SECOND FOLD

PE OR STICKERS TO SEAL
IF PERMITTED

I would guess cytoplasmic factors
are more important in somata
functioning as the control as a
quite an specific aging or
developmental physiological aspect.
Rogovin, George

P.S. You may realize the
proposed experiments would be very
difficult technically arranging no
A viable system.
A certain volume of research seems
to be necessary to experimentally measure
the survival time.

Aug 19

Dear Leo:

I've read the preprint on competitive strength of Spermatozoa. I make the following comments:

It is well known in *Drosophila* that sperm cells lacking whole chromosomes function perfectly well. I believe Mulla early showed that even a sperm with no chromosomes at all could function. Double non-disjunction is also known in mice (Russell), showing that eggs & sperm with an extra chromosome or a deficiency for one can function. ~~In such cases if one can tell in this case which~~ In the case reported the egg must have had an extra and the sperm a ^{whole} chromosome deficiency. In plants the situation is quite different with spores which must undergo mitotic divisions in haploid stage to produce egg or sperm nuclei.

Dr. George Beadle
President
Office of the President
Administration Building
The University of Chicago
Chicago 37, Illinois
United States of America

Geneva, 26th August, 1963

Dear Dr. Beadle

I am writing to thank you for your note of August 19th and the comments which you made in it. May I make the following comments on your comments?

The experiments which are proposed are technically not easy, but the difficulty of assaying the semen for viable sperm does not seem to be serious, because for the purposes of comparison of the samples involved, it would be sufficient to assay for the number of visible sperm, or, if you wish, for the number of motile sperm.

Concerning your remark that a certain concentration and volume of semen may be necessary, this is a point which I did not mention in the preprint, but which I have considered. The answer might be that in performing the experiment, one must not dilute the semen into saline, but rather one must dilute it into undiluted seminal fluid, from which the spermatozoa have been removed. This is, incidentally, a point which I need to discuss with "experts".

Concerning your other remarks: I am inclined to believe that the properties of the spermatozoon are determined not by the genetic material which it carries, but by its cytoplasm. I also believe, however, that the properties of the cytoplasm of the spermatozoon are determined by the genetic material which is contained in the (diploid) spermatogonium, from which the spermatozoon is derived. I might be proved wrong of course.

With best wishes,

Sincerely,

Leo Szilard

c/o Dr. Martin Kaplan, World Health
Organization, Palais des Nations, Geneva,
Switzerland.

May 6, 1964

Dr. George Beadle ✓
Office of the President
The University of Chicago
Chicago, Illinois

Dear Dr. Beadle:

The enclosed preprint might perhaps interest you. Any comments which you might care to make would be appreciated.

With kind regards,

Sincerely,

Leo Szilard

LS: jm

Enclosure

Physical facilities

To take care of the housing of the Institute and its personnel, a laboratory and living accommodations should be constructed. For the initial needs it is believed that a suitable laboratory building containing the following would be adequate:

Library	650 sq. feet, floor area
Office	250
Service room	250
Storage room	250
Auditorium for 100	1000
10 laboratory units at 250	2500
3 laboratory units at 500	1500
Corridors	<u>1600</u>
Approximate total, floor area	8000

Total estimated initial cost

Laboratory building	120,000
Laboratory equipment	20,000
Director's house	15,000
12 efficiency dwelling units	48,000
Library	<u>25,000</u>
Total	\$228,000

Annual operating budget

Salaries, Director	15,000
Assistant director	8,000
Administrative Assistant	5,000
Secretary	3,000
4 Scientists	24,000
6 Graduate fellows	14,400
Consultants	<u>3,000</u>
	81,400
Farm operations	50,000
Library	1,000
Supplies and expense	15,000
Travel (including travel funds for one symposium)	<u>8,000</u>
Total	\$155,400