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CORRESPONDENCE March 16-31, 1954

N. WIENER · MC 22

Box 13

March 16, 1954

Mr. Nobert Weiner
Massachusetts Inst. of Technology
Cambridge, Massachusetts

Dear Mr. Weiner:

This letter to you is a frank but friendly letter which this writer has contemplated for many months. In it is an invitation to participate in the correspondence section of a society for pure order.

Your ability has come to our attention from a review of your book "Ex-Prodigy" and in a newspaper article which as we understand it is a study of relationships between thought and electrical impulse as evident in the electronic developments of our day.

In contrast to yours we are interested in the relationships between human and material value, and the creation of working expositions of pure findings. In other words, we are a parent movement to promote specific things of any description which will contribute to order for the sake of all order. It can be seen that for all practical purposes our field cannot be measured but if we can impress on the minds of generations to come the idea that the works of people must be measured by their purity we shall have neither lived nor worked in vain.

One of our many immediate concerns is the impact of nuclear weapons on the worlds systems of order, which appears to have produced the ultimate in military process, and on which stands the possible destruction of the human race. We are much disturbed that the sciences have no antidote, nor do we see any evidence of effort in that direction, or have we seen an admission of possibility. From one to another who are spending our lives in the study of causation and production of effect, it appears to me we have somehow lost our sense of direction in the light of the purpose for which we are gifted and are.

March 16, 1954

As one contribution among others that this writer proposes for this society is the police approach to the problem of mass disorder as is military aggression. It seems reasonable to me that if machines could be built which could arrest the motion of military machines and men, aerial, water and land military process would become obsolete and the transport of nuclear weapons could be controlled. After many years of exploration it appears to me this possibility hinges on the development of an old idea and possible incorporation in existing design of military cannon. As you know there are two axes of movement in the direction of artillery fire in present equipment. There have been several at least, perhaps many efforts to develop 3-axis equipment, which have failed, despite the fact that such equipment had some advantages that the 2-axis types did not. Among the reasons for such failure is that primary developments indicated that manual sighting and operation would be required, and that high speed motion and the unseen target presented problems that the 3-axis proponents had not then solved.

It is my contention that these two principles will work together in a dual-axis system of fire control, to combine the advantages of both methods and will give shell projection toward and from objects in motion greater speed, flexibility, and accuracy than will be needed in the foreseeable future. Ordnance experts already admit the possibility of 3-axis mounting of multiple mounts of recoilless rifles on aircraft but not 3-axis direction of fire. If the back and muzzle blasts from simultaneous fire from batteries of rifles away from the structure of aircraft doesn't do anything to the craft and its flight as has been also admitted, then what is there to prevent the mounting of one big one on the recoilless principle? For some years ordnance has had in the field 105mm recoilless. Now 105mm is approximately 4 inches, and the rifles for the "Atomic Gun" are 11 plus. How far within reasonable possibility are we from mounting the atomic gun on aircraft of our present day? In as much as weight in recoilless design is a resolvable factor how can we be more than seven bore inches (approx.) away? And if that is true how safe is any naval vessel, surface or subsurface from such attack? Or any land fortification now known? Or how can any army of men endure the sustained firepower of a million rounds of artillery fire between the suns from a small number of aircraft?

Mr. Nobert Weiner

-3-

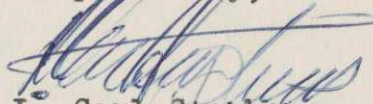
March 16, 1954

Now we come to the basic reason for possible military disinterest. Given the possession of equal armament, the enemy would have the same advantage on his own terrain that we would have on ours, which puts it out of military classification. It comes now to me that when the day comes that we are ready to yield the right of propriety to our enemies and to expect the same for ourselves, we will find that we will need no longer to think of mass disturbances as military problems, but for the police as in our own communities; that we shall ask nor expect nothing more than that our neighbors behave themselves.

Because you are a genius, qualified in a highly technical sense to be of possible value to us, understanding in part the compulsions and capacities of genius, and in the hope that you might understand the context of this letter I am sharing these thoughts with you. If it so happens that you would like to correspond with us and perhaps sharing sometime some technical information that we may need together with your concerns for a better world we would be very happy to receive your communication.

May I now thank you for taking the time to read this letter.

Respectfully,



L. Carl Stephens
2736 West 27th. St. South
Wichita 12, Kansas

COPY

March 16, 1954

Lost and Found Department
Idlewild Airport
New York, N. Y.

Gentlemen:

I am writing you to inquire again about the overcoat that Professor Wiener lost on the twelfth of February.

He would like to know whether or not it has turned up, so that he may report, if necessary, its loss to the insurance company.

Sincerely yours,

Mrs. James Cole
Secretary to Professor Wiener

COPY

March 16, 1954

Miss Ellen Einhorn, Chairman
Political Science Club
Mount Holyoke College
South Hadley, Massachusetts

Dear Miss Einhorn:

Professor Wiener would like very much to accept your invitation to speak to the Political Science and Psychology Clubs on Thursday, April 22.

As plans now stand, Mrs. Wiener will drive Professor Wiener over to South Hadley on the afternoon of the 22nd, arriving in time for dinner, and returning after his talk. I should like to point out to you that Professor Wiener is a vegetarian (Mrs. Wiener is not).

Please let us know if these tentative arrangements meet with your agreement.

Sincerely yours,

Mrs. James Cole
Secretary to Professor Wiener

COPY

March 16, 1954

Mr. Jason Epstein
Doubleday and Company
575 Madison Avenue
New York 22, New York

Dear Epstein:

Here is a copy of a letter I've just sent off to Orson Welles. What do you think of the idea? If Welles won't do it, someone should.

I think it would be entirely appropriate for the ~~piece~~ to be reprinted in Anchor Books. The whole thing could be enormously valuable in alerting public opinion to the dangers of the present age.

Sincerely yours,

Norbert Wiener

NW:bbc

March 16, 1954

Dr. Roland Hammond
41 Boylston Street
Providence R. I.

Dear Dr. Hammond:

I shall plan to attend the Seventh
Annual Cotillion of The Dancing Men of
Providence on Friday, March 19, 1954,
at 6 o'clock.

Sincerely yours,

Norbert Wiener

NW:bbc

COPY

COPY

March 16, 1954

Mr. Donald W. Tappa
410 West 51st Street
New York 19, N. Y.

Dear Mr. Tappa:

In addition to Professor Wiener's own books (and you should be sure to read The Human Use of Human Beings) I recommend that you consult the card catalogue of your library, the Readers' Guide, and other up-to-date source books.

Professor Wiener receives literally dozens of requests like yours every week, and if he took time to answer them all in detail, he would have no time left for his own research.

Sincerely yours,

Mrs. James Cole
Secretary to Professor Wiener

NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

March 17, 1954

Professor N. Wiener
Massachusetts Institute of Technology
Cambridge, Mass.

Dear Professor Wiener:

The enclosed proposal contemplates, in part, continuation of research carried on by Dr. Ehrenpreis under a Foundation grant to Columbia University in 1952-53, for which Professor C. Chevalley was principal investigator.

It is essentially the same proposal you review^{ed}/previously. The principal difference is that, under this proposal, Dr. Ehrenpreis is the principal investigator and will spend two years at the Institute for Advanced Study on the problems. A copy of your review of the earlier proposal is enclosed.

It would be very helpful if you would review the new form of Dr. Ehrenpreis's proposal.

Sincerely yours,

Leon W. Cohen

Leon W. Cohen
Program Director for
Mathematical Sciences

Enclosures

PLEASE RETURN PROPOSAL RATING TO L. W. Cohen BY _____, IF POSSIBLE.

NATIONAL SCIENCE FOUNDATION
DIVISION OF MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES

RATING SHEET

THE EVALUATION OF NSF RESEARCH PROPOSALS SHOULD BE BASED PRIMARILY ON:
(1) THE SCIENTIFIC COMPETENCE AND/OR POTENTIAL GROWTH OF THE INVESTIGATOR,
(2) THE SCIENTIFIC MERIT OF THE PROBLEM,
(3) THE SCIENTIFIC RESOURCES AND/OR CONTRIBUTING INTEREST OF THE INSTITUTION.

No. INSTITUTION INVESTIGATOR TITLE OF PROPOSAL

R-1127 I.A.S.

OTHER REVIEWERS SUGGESTED:

RATING: EXCELLENT; GOOD; AVERAGE; POOR

SIGNATURE

TITLE

DATE

PROPOSAL FOR NATIONAL SCIENCE FOUNDATION CONTRACT

This proposal is submitted by the Institute for Advanced Study, Princeton, New Jersey, on behalf of Dr. Leon Ehrenpreis for the period of September 15, 1954 to September 15, 1956.

The proposal plans, in part, to continue the work done under contract NSF 5-G205 which was awarded to Columbia University for the academic year 1952-53 and for which Professor C. Chevalley served as principal investigator. The actual research work of that contract was done by Dr. Leon Ehrenpreis who is now an Instructor of Mathematics at The Johns Hopkins University. A proposal for the continuation of the work of that contract for the summer of 1954 has been submitted by The Johns Hopkins University with Dr. Ehrenpreis as principal investigator. It is now desired to obtain a new contract at the Institute for Advanced Study with Dr. Ehrenpreis as principal investigator.

Title: The method of Laurent Schwartz in the Theory of Distributions.

Duration: September 15, 1954 - September 15, 1956.

Financial Statement:

Salary for two years (Dr. Ehrenpreis)	\$10,000
Incidentals	500
Overhead (15 percent of above)	<u>1,575</u>
Total	\$12,075

FACULTY SPONSOR:

Hassler Whitney, Professor of Mathematics

APPROVED FOR
THE INSTITUTE FOR ADVANCED STUDY:

Director

Dated: March 12, 1954

PROPOSAL FOR GRANT FOR SCIENTIFIC RESEARCH UNDER THE
NATIONAL SCIENCE FOUNDATION

The first part of the proposal deals with the study of the relationship of the theory of distributions of L. Schwartz to the theory of analytic functions. Let R denote the real axis, and let $a = \{a_i\}$ be a sequence of complex numbers. We say that the indefinitely differentiable function f on R is in the domain of $(\frac{d}{dx})^a$ if the series

$$\sum |a_i (\frac{d^i f}{dx^i})(x)|$$

converges uniformly for x in any compact set of R . We say that the continuous function g on R is in the domain of X^a if the series

$$\sum |a_i x^i g(x)|$$

converges uniformly on R . The Fourier transform (formally) maps the set of functions in the domain of $(\frac{d}{dx})^a$ onto the set of functions in the domain of X^a . By proving a precise form of the above statement and by choosing sequences a properly, we have been able to prove a theorem of Paley and Wiener concerning the characterization of the Fourier transform of functions of compact carrier. We have also been able to prove, similarly, the Paley-Wiener characterization of the Fourier transform of functions analytic in a strip around R . The following more refined result has been obtained: Let f be a function on R in L_2 , and call F its Fourier transform. A necessary and sufficient condition that F be analytic on R is that, for any entire function g of exponential type zero, $gf \in L_1$. It is our plan to extend our work by characterizing the Fourier transform of other classes of analytic functions, e.g. entire functions of finite order. We believe

that, in order to do this, we need only choose the sequences a properly and then use some rigorous form of the above formal argument. (All the above work extends to several variables.)

By use of the analogues of the operators $(\frac{d}{dx})^a$, X^a for several variables, we have been able to give a natural topology to the set $\tilde{\mathcal{D}}$ of Fourier transforms of the functions of the space \mathcal{D} of Schwartz. The Fourier transform gives a topological isomorphism of \mathcal{D} onto $\tilde{\mathcal{D}}$. Thus, by means of Parseval's formula, we define the Fourier transform of any distribution as an element of $\tilde{\mathcal{D}}'$ (dual of $\tilde{\mathcal{D}}$). By means of this, we have been able to prove that division (in the sense of convolution multiplication) by a polynomial of derivation is always possible; the question of such a division had been considered one of the principal problems in the theory of distributions. A particular case of our theorem is that every linear partial differential equation with constant coefficients possesses an elementary solution. We have also extended this result to systems of constant-coefficient partial differential equations. We wish to study more completely the structure of this elementary solution, that is: What is the smallest sub-space of \mathcal{D}' which contains the elementary solutions of all linear constant-coefficient partial differential equations? Further, we believe that our method for the solution of the above division problem will enable us to solve other division problems. For example, a result of the following nature seems to be within the grasp of our method: Let T be a distribution whose Fourier transform is an entire function of finite order (of several complex variables). Then there exists a distribution S which is an elementary solution to the convolution equation with kernel T. (S is not necessarily a distribution in the sense of Schwartz; rather, it is more closely related to the elements of the space \mathcal{D}' described above, in that it is a continuous linear function on a space of analytic functions.)

Our methods of using linear functions on spaces of analytic functions give us an attack on the problem of determining elementary solutions for linear partial differential equations with analytic coefficients. We wish to study this problem further; it seems fairly certain that our methods will lead to some results in this direction.

Our methods give us a method of defining the Fourier transform of the space \mathcal{E} of Schwartz, and of studying the problem of mean periodic functions of several variables. The fundamental theorem for mean periodic functions translates into the study of the relation of "punctual ideals" to "global ideals" in rings of analytic functions. By means of a theorem of H. Cartan (An. de la Soc. Mat. de France, 1950) we have been able to prove the fundamental theorem for mean periodic functions for a space of entire functions of exponential type in several variables. We plan to continue our study of mean periodic functions in other spaces, e.g. the space \mathcal{E} of Schwartz. It is believed that a more refined study of the theory of analytic functions of several complex variables will lead us to a solution of this problem, for which we have already obtained a partial solution.

The second part of our proposal is concerned with the Fourier transform and the theory of distributions on semi-simple Lie groups. Some work in this direction has been done by Dr. Ehrenpreis (the proposed principal investigator) and Professor F. I. Mautner. The following interesting results have been obtained: Let G be the group of real 2×2 unimodular matrices. Then the Fourier transform of $L_1(G)$ (summable functions on G) leads us to functions which are analytic in the strip $0 < R(s) < 1$ in the complex s -plane, and which satisfy the functional equation $F(s) = F(1-s)$. We have also proven for G an analog of the Paley-Wiener characterization of the Fourier transform of functions of compact carrier.

We have shown that the natural analogue of Wiener's tauberian theorem for G is false. We plan to attempt to formulate a correct analog of Wiener's tauberian theorem,

and the corresponding summation properties which it entails.

We have recently developed for G an analogue of L. Schwartz's (Ann. of Math., 1947) theory of mean periodic functions. Let Γ be any one of the classical discrete subgroups of G . We have recently established important relationships between the Fourier analysis on G (especially that of mean periodic functions on G) and automorphic functions under Γ . It is proposed to study these relationships in more detail. This is closely related to the Riemann hypothesis of A. Selberg's zeta functions. Finally, we want to examine in what measure our results extend to higher dimensional semi-simple Lie Groups.

Part III of this proposal deals with the extension of the theory of distributions of L. Schwartz to locally compact spaces. We have been able to do for an arbitrary linear operator on a locally compact space what the theory of distributions of Schwartz does for differential operators. For certain operators D , which we may describe by saying that, in some sense, they have a spectral resolution, we have defined a generalized convolution with the property that the generalized Fourier transform associated with the spectral resolution of D transform this generalized convolution into multiplication. In a natural manner, we can associate with the generalized convolution a generalized translation operation by means of which we can write the generalized convolution product in a form analogous to the usual formula

$$(f * g)(x) = \int f(y) g(x - y) dy .$$

For operators on Euclidean spaces, we have obtained generalizations of Poisson's sum formula and Bochner's theorem on functions of positive type. We have also obtained a measure which is invariant under generalized translation. It is our plan to extend these theorems to arbitrary locally compact spaces. For a very small class of operators, the generalized Bochner theorem has been obtained by some mathematicians of the Russian school (e.g. articles by Povsner and Levitan in the Amer. Mat. Soc. Translation Projects). However, their results are obtained by merely transforming the problem into the classical problem, and then using the classical result; whereas our proofs lie intrinsically in the structure of each operator, without the necessity of transforming to the classical proofs.

The generalized Poisson sum formula is the only case in which the comparison of two operators enters our theory. We define a map of one operator D_1 into another D_2 as a map of a space \mathfrak{D}_{D_1} (associated with D_1 as the space \mathfrak{D} of Schwartz is associated to $\frac{d}{dx}$) into \mathfrak{D}_{D_2} . We plan to study the relationships obtained through such maps. We have been able to define a direct product as a bilinear map on $\mathfrak{D}_{D_1} \times \mathfrak{D}_{D_2}$ which behaves like a tensor product. By means of this, we hope to be able to define a homology theory for operators. Since the spaces \mathfrak{D}_{D_1} are topological vector spaces, we propose to see what light this homology theory will shed on how to define homology theory for topological rings and modules in general.

Leon Ehrenpreis



THE WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY

Shrewsbury, Massachusetts

March 17, 1954

Prof. Norbert Wiener
Massachusetts Institute of Technology
Department of Mathematics
Cambridge 39, Mass.

Dear Prof. Wiener:

Thank you for your response of March 4th regarding the subject of your talk before our section of the American Chemical Society. After mulling it over for some time, I have reached a state of misgiving about the suitability of this topic for the type of audience to be expected. It would be an excellent one for a group consisting entirely of physical chemists but there will be only a few such chemists in attendance.

Most of the members of our section are organic, inorganic and biological chemists. A discussion of statistical mechanics is an important subject for all chemists but I'm afraid that most of us would be unable to comprehend the ideas advanced. More than that, many would be so frightened by the title that they may not even attend.

I know that I impose upon you when I ask this but is it possible for you to choose another topic? Dr. Hoagland had suggested to me that you might wish to talk about science and society; that is why I had mentioned that subject in my first letter. If you do not wish that one, then perhaps another general subject, such as some aspects of information, may be appropriate. However, if you feel that "Gibbs' Ideas on Statistical Mechanics" can be made to appeal to a heterogeneous group of chemists and you have a strong wish to present that material, then we shall be happy to cooperate with you.

Sincerely yours,

Harold Levy
Harold Levy

HL/r

[ans 3/22/54]

UNIVERSITY OF OREGON
MEDICAL SCHOOL
PORTLAND 1, OREGON

DEPARTMENT OF ANATOMY

March 17, 1954

Dr. Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Wiener:

In reply to your letter of March 4, 1954 I wish to thank you for your willingness to act as my sponsor for a U. S. Public Health Service special fellowship. Please extend my gratitude to Professor Martin for permission to attend mathematics classes in the department.

I plan to submit the application to the U. S. Public Health Service for the May 1st dead line and I expect to visit MIT some time during May to make arrangements for the course of study and to locate lodgings for my wife and myself. With many thanks I remain.

Sincerely yours,

Archie R. Tunturi

Archie R. Tunturi

ART:dmw

..
March 17, 1954

..
Mr. Adlai Stevenson
c/o School of Public Administration
Harvard University
Cambridge, Massachusetts

My dear Mr. Stevenson:

I greatly admire your courage in stepping
on the head of a political snake. ..

Please look at my letter to Orson Welles
and see--if possible by reading Ben Jonson's
The Tragedy of Sejanus--whether I am not
suggesting something that, if properly used,
could be enormously valuable in alerting
public opinion to the corruption about us and
the dangers of the present age. ..

Sincerely yours,

.. ..
Norbert Wiener

NW:bbe

THE VIRGINIA QUARTERLY REVIEW

A National Journal of Literature & Discussion

ONE WEST RANGE • CHARLOTTESVILLE • VIRGINIA

March 18, 1954

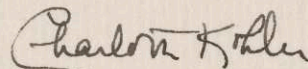
Dear Mr. Wiener:

The Virginia Quarterly Review is anxious to present in the forthcoming issue a thoughtful essay review of Harrison Brown's *The Challenge of Man's Future*, and we wonder if we can persuade you to undertake the task for us. The review needn't be a long one, say about one thousand words, and the deadline for the Summer issue is not until May 1st.

Perhaps I should mention here that although the Quarterly pays for its articles, it is able to reward its reviewers only with copies of the books and our thanks.

The book is already here and we can send it to you at once. I know that we are asking a great deal of you in both time and energy, but we all hope that you will want to comment on this volume. We shall all look forward to hearing from you and perhaps you will wire us your answer collect.

Very sincerely yours,



Charlotte Kohler
Editor

Mr. Norbert Wiener
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

W

[ms 3/22/54]

March 20th. 1954.

My dear Mrs Wiener,

We were so happy to hear of Peggys marriage and would like to take this opportunity of offering our congratulations and best wishes to the couple.

It was most kind of you to keep us in touch. We constantly meet mutual acquaintances and hear of your travels from time to time. I trust that you and your husband both flourish. Bruno is working terribly hard at the moment but we hope that by Easter it will ease off a little.

I do hope that our paths will cross again before too long
My husband joins me

in sending kind regards to
you both. Do remember us to
our M.I.T. friends too.

Yours sincerely

Rita Bronowski

ADLAI E. STEVENSON
11 SO. LA SALLE STREET
CHICAGO

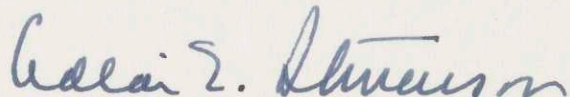
Dictated in New York
March 21, 1954

Dear Mr. Wiener:

I was fascinated by your letter to Orson Welles. I must confess that I have not read Ben Jonson's "The Tragedy of Sejanus," but you tempt me mightily and I shall probably divert some time for something really worth while for a change. Certainly the parallelism is remarkable. Which proves again, I suppose, that there is little new.

I remember so well our meeting.

Sincerely yours,

A handwritten signature in blue ink that reads "Adlai E. Stevenson". The signature is written in a cursive, flowing style.

Mr. Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 39, Massachusetts



March 22, 1954

Dear Professor Wiener:

I have just returned to find your new, revised manuscript on my desk, which I hope to be able to read quickly so we can begin our consultations as soon as possible. In the meantime, I am enclosing a copy of our cover for THE HUMAN USE OF HUMAN BEINGS, which I hope you will like. I think it is rather good. Won't you give me your opinion?

I like your letter to Orson Welles and your suggestion that we include The Tragedy of Sejanus sometime in the Anchor series seems very reasonable. We have been thinking of a volume of Ben Jonson's plays for some time now, and certainly the times seem right for such a book.

I do hope we have a chance to meet again soon, and in the meantime, my best wishes to you and Mrs. Wiener.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Jason Epstein'. The signature is fluid and cursive, with a long horizontal stroke at the end.

Jason Epstein

Professor Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

JE:nr
Enclosure

CRANES & CREST

No. DB/608

22 March 1954.

Dear Professor Wiener,

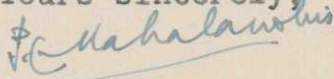
I am very glad to receive your letter of March 15th, and to know that you and Mrs. Wiener may be able to come to India in or about September 1955. I shall start making necessary arrangements accordingly.

First of all, I should like to know how long you would be able to stay in India. Secondly, financial arrangements. We know about transportation costs and expenses in India. The really important matter is whether any payments would have to be made in dollars; and if so, the likely amount. It is not necessary at this stage to go into the details some rough idea would be enough.

There is no difficulty about your programme. You now know roughly the different types of work in which you would be interested, and arrangements can be made to suit your own choice and convenience.

With best wishes for you and Mrs. Wiener from Rani and myself,

Yours sincerely,



Prof. Norbert Wiener,
Massachusetts Institute of
Technology,
Department of Mathematics,
Cambridge 39, Mass.,
U.S.A.

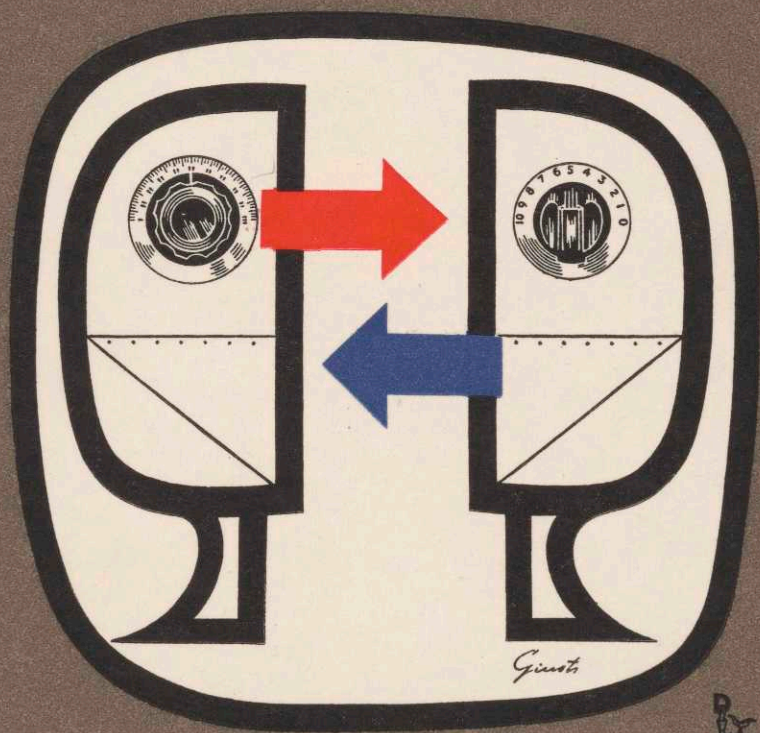
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1.00 in Canada

The human use of human beings

CYBERNETICS AND SOCIETY

Norbert Wiener



The human use of human beings

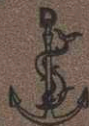
CYBERNETICS AND SOCIETY

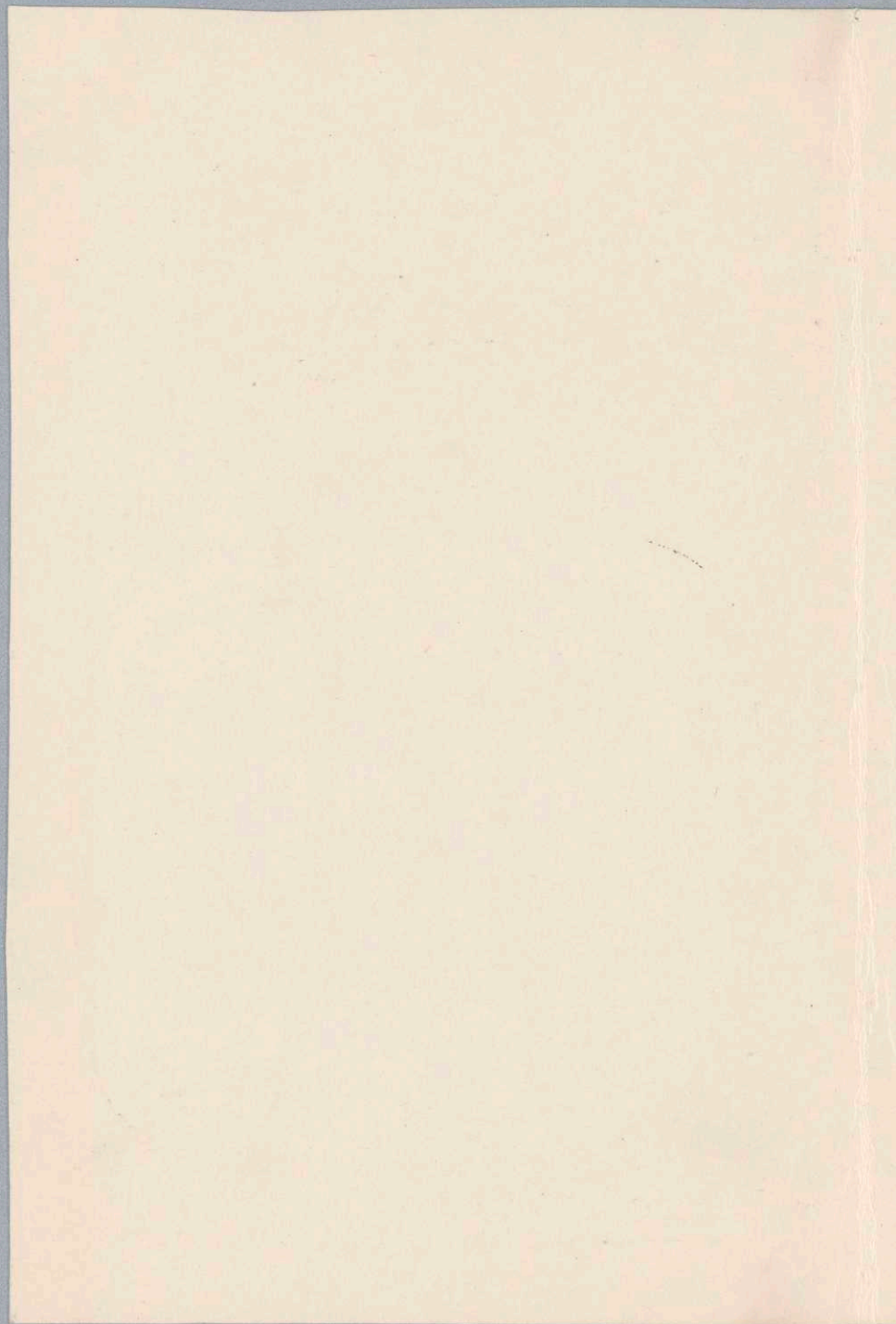
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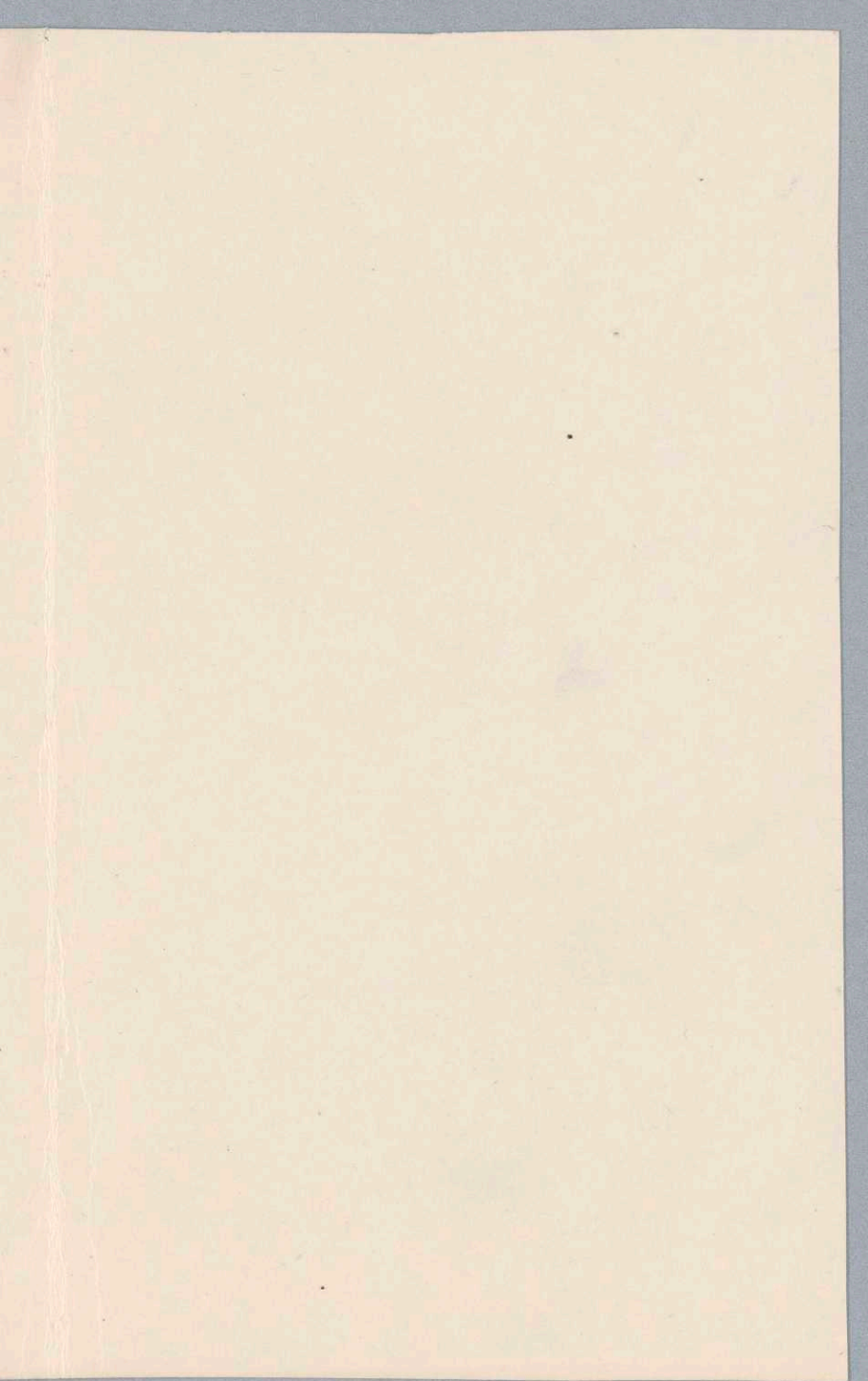
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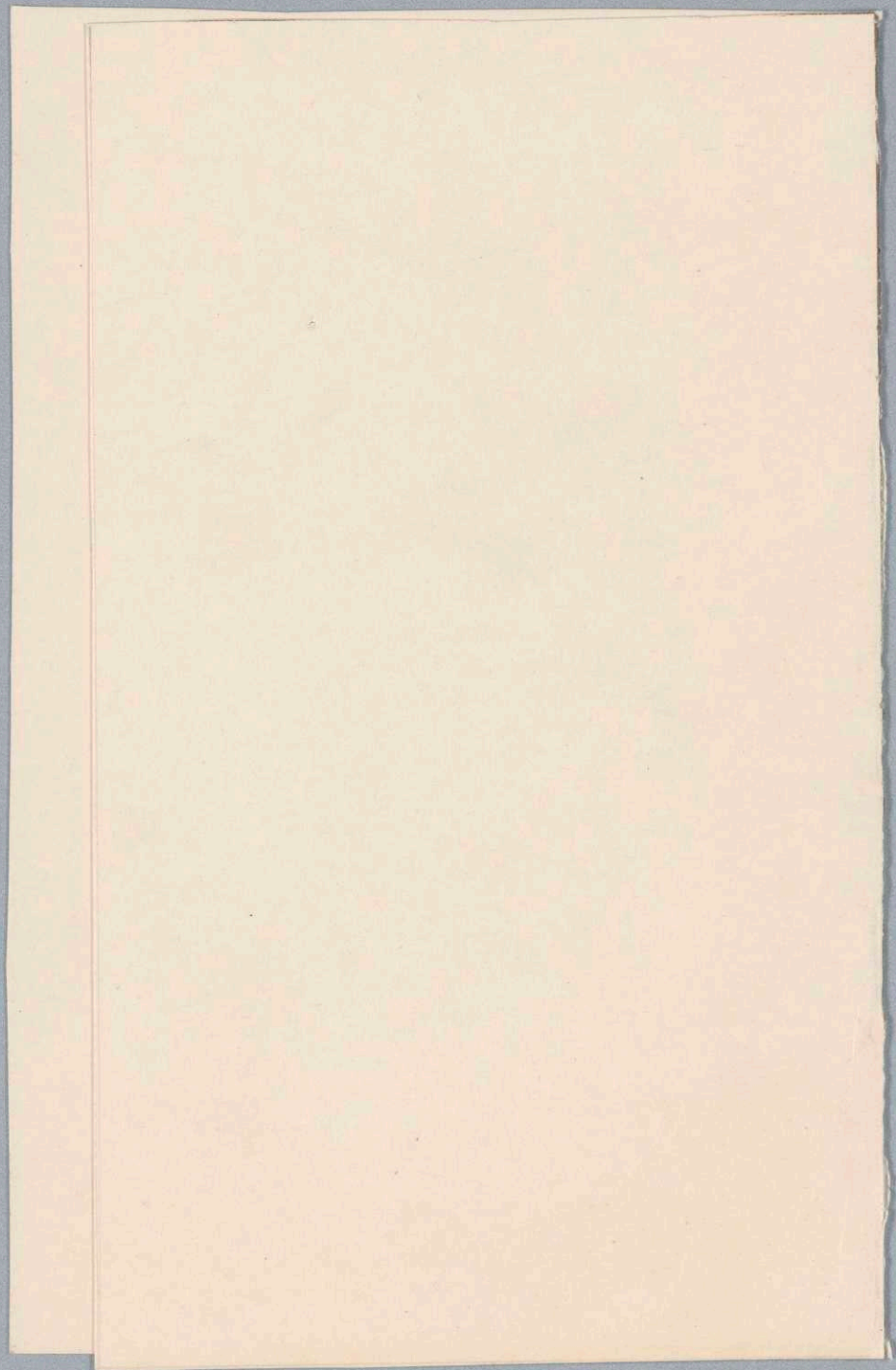
SECOND EDITION REVISED

A Doubleday Anchor Book









March 22, 1954

16

Dr. Norbert Wiener,
Massachusetts Institute of Technology
Boston, Mass.

Dear Dr. Wiener:

Several weeks ago I wrote for my newspapers, the Providence Journal-Bulletin, the story of an 8-year-old boy, Brian Van Dale, who has an IQ of 185 which is verified by the noted psychiatrist, Dr. Clemens E. Benda of Boston, and Frederick K. Hamilton, director of Hamilton Country Day School, which the boy attends.

As a result of my news story, which attracted wide attention, I have been invited to write a magazine article for a highly-respected family magazine. It has been suggested that Brian's problems of being unable to mix with other youngsters parallels somewhat your own childhood. The successful orientation of your life to society stands as an inspiration to others.

Brian's parents are old school friends of mine and I have taken more than a newspaperman's interest in their problem, which they are handling intelligently with a great deal of help from Dr. Benda and Mr. Hamilton. It is because of this feeling, primarily, that I am writing you.

You have perhaps read of this exceptional boy. At present he is doing 10th grade work and will be ready ~~ready~~ for college when he is 10 or 11. His favorite subjects are biology and physics; he has an aptitude for mathematics, being able to solve some difficult problems without knowing formula.

Brian is not interested in mixing with other youngsters. He likes older people, but his general attitude toward most strangers is of complete detachment. He'd rather study his college textbooks than play outside. He has amazing athletic abilities, shames most of the other kids, but is bored with sports in general. He just likes to show other boys that "I can do it, too."

With this situation in mind, would you please tell me what you would suggest as the best possible way of orienting Brian to society, perhaps recalling some of your own childhood, and how you solved that cursed loneliness that often attends ~~the~~ the gifted. I have suggested that the Van Dales read your book and have an order in for it as a gift to them, But I thought a direct word would also be invaluable in encouraging them.

2.

My selfish interest in this is that I would like to use whatever you recommend, or any recollections you have, in the story which I promise will be treated in the same discreet, tasteful manner of my original story which met with the favor of the boy's parents and their advisers. It will be a straight, factual account, without frills, of childhood development and other problems of young Brian, perhaps bring^{ing} in brief mention of you, Dr. Einstein and several others who have conquered the tremendous handicaps and contributed so much to society.

Just a few words would be appreciated.

I hope that this request does not seem presumptuous to you since it is made with the highest respect.

Very sincerely yours,

Paul G. Martasian

Paul G. Martasian

29 Mac Arthur Drive
Warwick, Rhode Island

[ans. 4-12-54]

Ljubljana, 22 March 1954.

Dear Prof. Wiener:

8

One month ago, I sent to Prof. William Locke my first conception of a PHONO-ACOUSTIC ELECTRONIC SYNTAGMATIC TRANSLATOR which would interest you, especially if I tell you that I have an idea of a 'thinking robot' also, conceived on similar theoretic basis as the translator, but from the standpoint of technical realisation quite fantastic, as it seems to me. Please, examine first with Prof. Locke and other collaborators of the Institute (Prof. Walter f.e.) my conception of the translator about which I am quite interested to know your own and your collaborators' opinion.

I write you in consequence of some articles I

red in the daily press about the cybernetics and its performances. For my syntagmatic structural theory of the human speech, I am in contact with the ~~american~~ Linguistic Society of America.

sincerely yours

F. Mikus, Riharjeva 3
Ljubljana, Yugoslavia.

F. Mikus

[ans 4-12-54]

March 22 nd 1954

Monsieur le Professeur,

Je vous remercie beaucoup de votre lettre du 17 avril et de votre aide. J'ai reçu peu de temps après la vôtre une lettre très aimable de Mr. Martin.

La dernière réunion du Cercle d'études cybernétiques a été très réussie.

Veuillez recevoir, Monsieur le Professeur, avec mes remerciements, l'assurance de mes sentiments les plus respectueux

Robert Vallée

Robert Vallée
2, rue Mabillon, Paris 6.

[ans 3-26-54]

March 22, 1954

Miss Charlotte Kohler, Editor
The Virginia Quarterly Review
One West Range
Charlottesville, Virginia

Dear Miss Kohler:

I have recently returned from a two months' trip to India, and I find such an accumulation of work on my desk that I simply cannot take on any additional tasks.

I hope you will understand my position; I cannot do any more outside work this semester.

Sincerely yours,

Norbert Wiener

NW:bbc

March 22, 1954

Mr. Harold Levy
The Worcester Foundation
for Experimental Biology
Shrewsbury, Massachusetts

Dear Mr. Levy:

I do want to talk about some of Gibbs' ideas outside of statistical mechanics in the narrow sense. I think the material will be comprehensible to a heterogeneous group of chemists, and I shall try to make it interesting and appealing as well.

Sincerely yours,

Norbert Wiener

NW:bbc

[ans 5/6/54]

Dr. K.P. Bhatnagar,
M.A., Ph.D.

772, Banarsi Bagh,
Lucknow, U.P.
India.

March 23, 1954.

6

Dear Professor *Wiener,*

Let me take the liberty of introducing myself to you and of stating the purpose of writing this letter.

I am keenly interested in the subject of mathematics and have been working as Lecturer in the University of Lucknow in this country. Ever since I took my M.A. (Master of Arts) degree in mathematics from Lucknow University, I have been enthusiastically carrying on research work in this subject. I have so far written 14 research papers containing the results of my investigations. Some of these papers have already been published in the important Mathematical Journals of India and Europe and others have been accepted for publication and are under print. The reviews of my published work have indeed been most encouraging.

In my thesis entitled "Self-reciprocal Functions and a New Transform" submitted in the Lucknow University for which I got the Ph.D. (Doctor of Philosophy) degree, I worked out and developed an entire theory on a new transform which was just conjectured by Prof. G.N. Watson some years ago. I have applied the results of this theory and obtained interesting theorems and generalisations. I am fully confident that further considerable work can be done in the development and application of this theory. For your perusal copies are herewith attached of the reports and appreciations of the work in my thesis by the two external examiners who are well reputed British Mathematicians and specialists in this branch of mathematics.

Prof. E.C. Titchmarsh, F.R.S.,
University of Oxford, England.

Prof. W.N. Bailey, D.Sc.,
University of London, England.

I may point out that I have not so far been out of India but I have always had a great desire to go abroad, particularly to the U.S.A. or the U.K., and to meet personally the Professors and

eminent mathematicians in foreign countries whose works I have been studying and appreciating. I am also extremely keen and would be highly pleased to do further research work under the able guidance and help of these eminent personalities in the subject of mathematics. So far I have not been able to get an opportunity of fulfilling my aim and ambition.

I have now come to know that the U.S.A. Government in general and the individual U.S.A. Universities in particular are offering financial assistance in the form of scholarships and instructorships to Indian students as a gesture of help and encouragement to us in our endeavour for the advancement of knowledge of learning in the modern sciences. I am confident that you also might be taking some such interest in your University for providing financial help to keen, qualified and deserving Indian students.

I would, therefore, mention that if financial assistance could be obtained for me in your University, I would deem it a great pleasure to come there and do research work under your able guidance. I would, in fact, be highly grateful to you if you could secure this financial help for me.

With very good wishes and greeting to you from India,

Yours Sincerely,
K.P. Bhatnagar

Prof. Norbert Wiener
Ph.D., D.Sc.,
Professor of Mathematics,
Massachusetts Institute,
of Technology,
CAMBRIDGE
MASSACHUSETTS.

[ans 4/17/54]

Enclosure

Copy of the report of Prof. E.C. Titchmarsh, F.R.S.,
Professor of Mathematics, the University of Oxford on my
thesis "Self-Reciprocal Functions and a New Transform."

In this thesis an account is given of the transformation of Fourier-integral type arising from the Kernel

$$\omega_{\mu, \nu}(x) = \sqrt{x} \int_0^{\infty} J_{\nu}(t) J_{\mu}\left(\frac{x}{t}\right) \frac{dt}{t}$$

and from more complicated kernels involving any number of parameters μ, ν, ζ, \dots . The simplest of these transformations was suggested by G.N. Watson, but without any detailed discussion. The thesis begins with a general introduction to the subject. This is well written and shows a good knowledge of the relevant literature. The formulae connected with these transformations are then discussed in a very exhaustive manner. A large number of theorems about the cases in which they hold are proved, and many interesting examples are given. The whole thesis is set out in a competent manner, and I understand that some parts of it have been accepted for publication in mathematical periodicals. I therefore recommend that the degree of Doctor of Philosophy should be conferred on Mr. Bhatnagar.

Sd/- E.C. Titchmarsh.

Copy of the report of Prof. W.N. Bailey, D.Sc.,
Professor of Mathematics, Bedford College, University
of London, on my thesis "Self-Reciprocal Functions and
a New Transform."

The main part of this thesis is concerned with a transform conjectured by Prof. G.N. Watson. The author works out the theory of the transform and gives many theorems on functions self-reciprocal under this transform. He then generalises this transform and gives a new method of obtaining self-reciprocal functions. The final chapter of the main part of the thesis deals with self-reciprocal functions involving two complex variables.

The thesis is well written and an impressive bibliography is given. In the text there are a large number of new theorems and a great many illustrative examples. Most of the work has already been published or accepted for publication. In my opinion it is a very good piece of work, and there is no doubt that the candidate should be awarded the degree of Ph.D without any further examination.

Sd/- W.N. Bailey.

CLOSURE

Copy of the report of Prof. E.C. Titchmarsh, F.R.S.,
Professor of Mathematics, the University of Oxford on my
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or accepted for publication. In my opinion it is a very
good piece of work, and there is no doubt that the
candidate should be awarded the degree of Ph.D without
any further examination.

Sd/- W.N.Bailey.

C O P Y

6 Derby Street
Salem, Mass.
March 23, 1954

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Mass.

Dear Sir:

I am faced with a most difficult problem. I have read your book entitled "Cybernetics" hoping to find the answer. Also the book entitled "The Electrical Activity of the Nervous System" by Mary A. B. Brazier, a Neurophysiologist.

I have not quite hit the nail on the head, I believe I need your help. Of course, there is a good reason for writing to you because not only do I find you a leading mathematician and in my estimation equal to--Albert Einstein. (Possibly he received more publicity) but I also find you somewhat of a neurologist. Therefore I believe you can supply the answer to my problem.

But would you is an other problem I am faced with.

Financially at this time, I can not repay you for your knowledge, or the solution to this problem. Therefore I am relying on your good graces to reply.

With your vast resources of knowledge, I know it would not take you over an hour.

Now this problem involves a group of experimenters and As I explain this matter, you can see, it is very unethical I would also say inhuman.

It is true, all inventions have a place in this world but when they are used to harm the human being in anyway then I feel it has no place among the great of science.

I have been put under remote control by a group of experimenters against my Will. But the way it is done is why I am writting to you. First we have two forms of energy to confront with.

Radio frequency energy in the electro magnetic field and sound energy in the other field.

The first being radio and radar waves, the other, sound waves which can also be generated at radio frequencies.

Which type of energy waves are being used to keep me under remote control? this is the big problem.

Now great pain and torture can be inflicted to me by one type of these waves. Only the Creator nows how these operators practically crucified me.

Naturally to cause pain, the nerves of the body are involved. Now also without pain there canbe motion of muscles in the body.

For example--Ibeing seated in a chair and in a relaxed position the operator of a certain type generator in one of the catagories I mentioned can move one of my legs or both simultaneously.

This is accomplished over a considerable distance, several miles, as I found out by feeling its strange magnetic force. But as I stated, in order to do so one must be seated, either in a car, a train, a boat et-cetera. (I have not been in a plane.)

The place is immaterial at this time. However, the fact that one must be seated is important.

Now, I in this seated position and the operator being at a distance controlling the frequency generator. He the operator can send a form of code to me without any kind of receiving device at my end by the elements of my body.

Now the operator he or she whichever the one moves the controls can move my leg in slight arcs, once for the letter A, two times for the letter B, three times for the letter C, and up to Z which would equal 26 counts.

The Morse Code can also be used, first by moving the leg in slight arcs, once for the letter E, two times for the letter I, being two two dots. Three times for the letter S, which equals three dots et-cetera.

For the dashes that make up some of the letters a longer count is used or a pause, that is the leg is held in a slight gripping force by the wave impulses.

Now could you please tell me what type of wave is used to move the leg of a human being or simply a dog suspended in the air on straps and belt.

As you know all matter and life is vibration. Light, sound, wireless-telegraphy, in the electro-magnetic field, all are vibration and vibration is heat.

Possibly even the soul is vibration, but of such high frequencies, that man cannot reach. As you know the vibration that is man's will, can be controlled, I believe it was Pavlov who accomplished this.

But getting back to my problem at hand the remote control of myself by a group of experimenters against my will and without my consent. Where good and bad can be used by this same method and medium I personally cannot see its usefulness to humanity.

Professor Wiener, can you? But when weighing this situation in your mind, will you please also consider, the Moral Code, the Moral Standard.

I also wish to say I came to M. I. T. to see you and discuss this problem in person with you, but you were out of your office at that time.

But that beautiful young secretary of yours was most helpful.

Therefore if the question of what condition I was in at that time, please ask her, for these vibrations can play havoc with one's personality.

Taking my problem up with the Boston University, School of Theology they state it is a violation of my personality and Council. but they as Theologians cannot explain the technical or the material part of man. This is easily understood, as there teaching's are of God and Soul.

One could hardly ask them to detract there minds from that. Professor Wiener kindly do not get the impression that I am also trying to question your Faith, you perhaps know the Scriptures better than I. Shall we say, it is understood.

You are a Mathematician and a Scientist, who else could I write to, to solve a scientific problem?

The old axiom or perhaps its proverb "Each to his own" seems to apply here.

Very truly yours

Frederick Buivid

The Human Robot

McGraw-Hill Book Company, Inc.

McGraw-Hill Building
330 West 42nd Street
New York 36, N.Y.

March 23, 1954

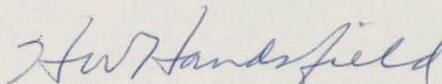
Professor Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Dear Professor Wiener:

It is a pleasure to send you herewith our check in the amount of \$150.00, the agreed compensation for your chapter based on your recent lecture at UCLA, and which will be a part of the book MATHEMATICS FOR MODERN ENGINEERING being edited by Dr. E. F. Beckenbach.

Everyone who knows about the course and the book seems to be very enthusiastic, and we are greatly pleased to contemplate publishing this excellent work.

Very sincerely yours,



Hugh W. Handsfield
Editor
College Department

HWH:dz
Enclosure

c.c. Dr. E. F. Beckenbach



HOUGHTON MIFFLIN COMPANY

2 PARK STREET BOSTON 7

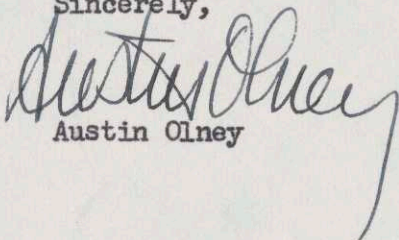
March 23, 1954

Dr. Norbert Wiener
c/o Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Wiener:

I thought you might be interested in seeing this jacket proof of the new edition of The Human Use of Human Beings, and I am also sending you the flap copy for your approval.

Sincerely,


Austin Olney

pm

LPM

Title: The Human Use of Human Beings (Revised Edition)

Author: Norbert Wiener

The publication of Norbert Wiener's The Human Use of Human Beings in 1950 provided a brilliant and revolutionary study of man's position in a world both blessed and damned by the presence of self-governing machines.

Since then the electronic calculator and the robot factory have come to play an ever increasing part in our industrial civilization. We can now begin to see the ways we are going to use these machines. And the machines themselves are being brought closer to perfection and adapted to a variety of new functions.

These developments have made Dr. Wiener's book of immediate importance to a much wider audience than his first book tried to reach. He has therefore prepared this new edition incorporating the latest scientific discoveries and evaluating their meaning for society.

Application of the theory of cybernetics (communication and control in the man and the machine) has produced a machine that can do routine mental jobs better than any man and makes an untrained mind a drug on the market. Unscrupulous or ignorant use of such equipment could turn man into a mere automaton. Its enlightened use can free the human mind for speculation and original thought.

In the few years since the first edition of The Human Use of Human Beings, Dr. Wiener finds that there are new bases for hope and new reasons for believing that cybernetics is developing in the right direction.

A new and revised edition

WIENER

**The
Human
Use
of
Human
Beings**

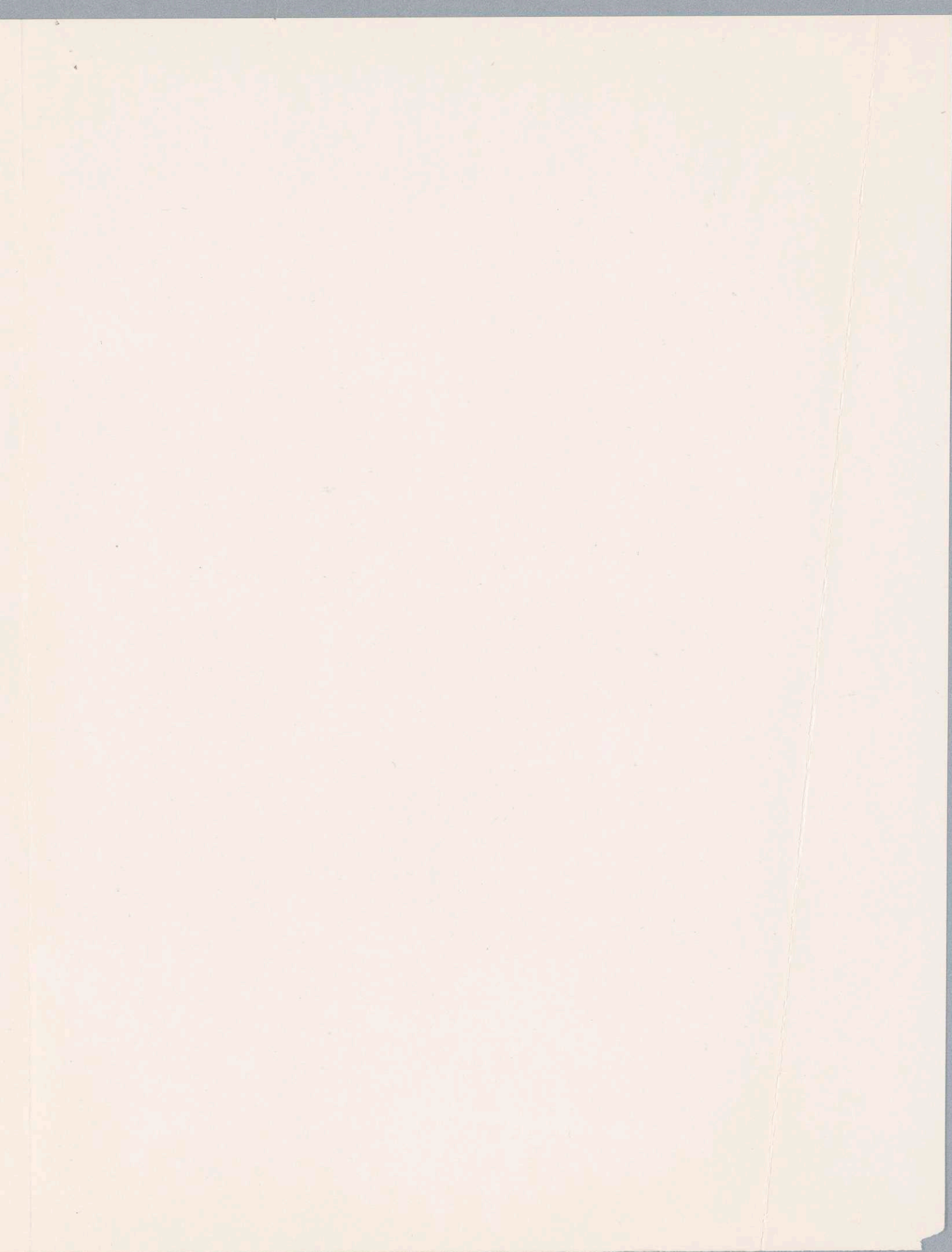
The Human Use of Human Beings

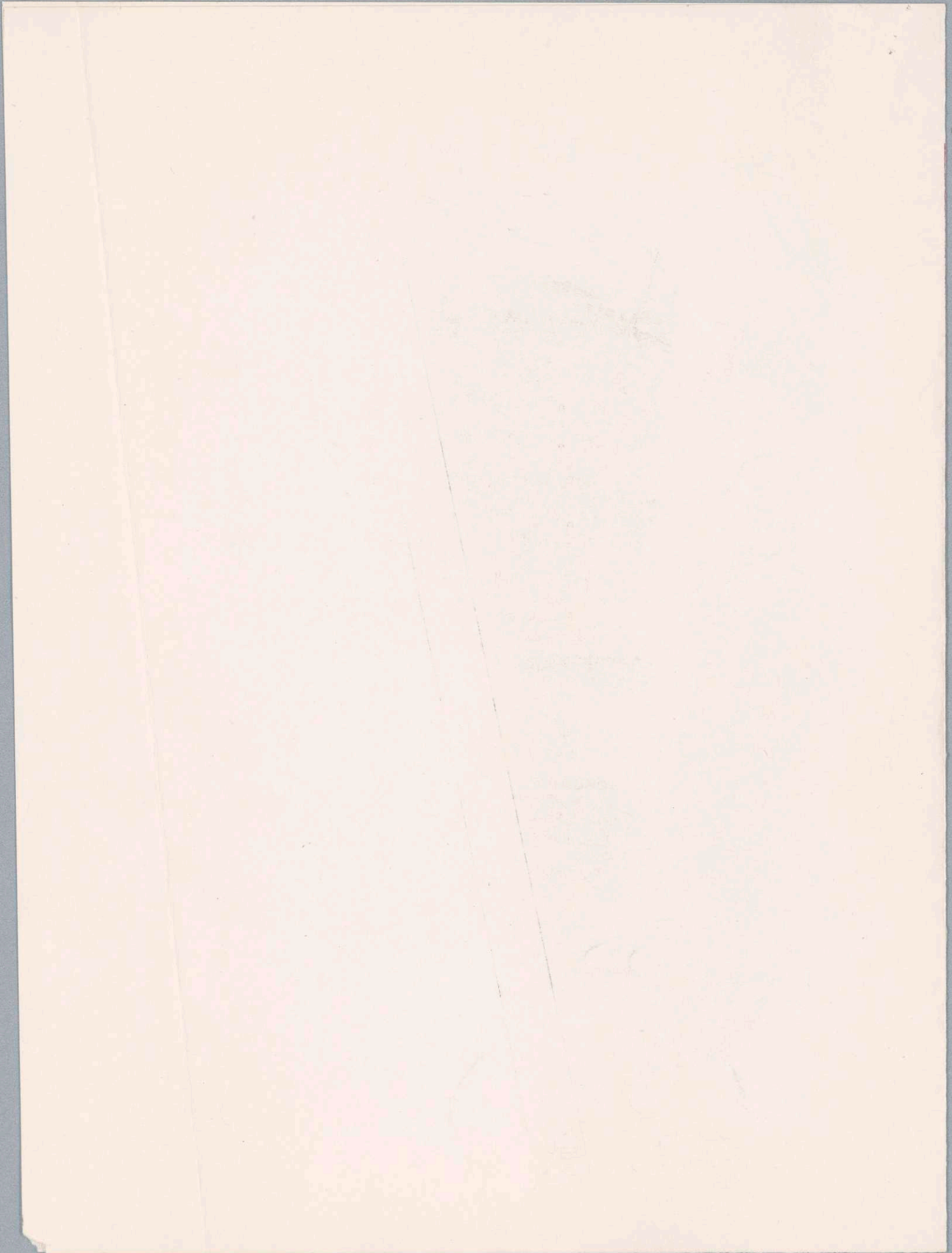
A great scientist discusses what man's
robot partner might mean to him in
the mechanized world of tomorrow

Houghton
Mifflin
Company

NORBERT WIENER









HOUGHTON MIFFLIN COMPANY
2 PARK STREET BOSTON 7

March 23, 1954

Dear Dr. Wiener:

In working on the re-issue of THE HUMAN USE OF HUMAN BEINGS, we find we need additional biographical information for the jacket.

Generally, we would like to know your activities since the end of World War II, and specifically, your activities since the book was first published. Also, we would like to know something of your connection with the work done on the computing machines at Harvard and elsewhere -- some sort of covering statement rather than anything detailed.

If possible, we would like to hear from you within the week. I hope all this won't be too much of an inconvenience for you.

Sincerely yours,

Constance Rogers

(Mrs.) Constance Rogers
Publicity Department

Dr. Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

[ans 3/26/54]

Wednesday March 24, 1954

Dear Norbert Wiener

"If one looks at the history of philosophy, one sees that its great and central questions (you know) are not answered; rather, it is gradually discovered that the question you have been asking is the wrong one. It is then forgotten (by all but teachers of philosophy)"

Do you recognize that voice? It is Alfred N. Whitehead speaking in 1931 to his Harvard class in Philosophy and Scientific Method.

Your talk last night (at the Waldorf Astoria) has been recorded, I believe, on the same "tape" of perpetual total recall, which is selectively reserved for those great generalizations that are effective in specific situations. You take the great and central controversy -

that between those who accept
the idea of the physical world
independent of knowledge of it
and those who accept the
notion that the awareness
is the only reality —
you take this controversy
in hand, in the grand
manner laid down by
Whitehead on that day
(as well as on other occasions
of course). You outline
the program by which this
controversy will come to be
forgotten (by all but the teachers
of philosophy).

Why do I feel compelled to write to you in this vein? Because the creative artist is entitled at the least to feedback from his audience; and this you were denied last night. Your talk, followed without comment, acknowledgement, or pause, by another quite irrelevant, struck me as would a proposal of marriage followed by an assent to a dinner invitation.

Cordially yours

Richard Proskauer
350 Lakeville Road
New Hyde Park
New York

(Research Engineer
Sperry Gyroscope Company)

Wednesday March 24th 1954

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
77 MASSACHUSETTS AVENUE
CAMBRIDGE 39, MASS.

March 24

Miss Einhorn phoned: Another event has been scheduled by the college for April 22, so that another date would mean a larger audience. She suggested preferably Wednesday, April 28, or Tuesday, April 20. Mrs. Wiener says that April 28 will be all right, and that, since the next day is Thursday, that they will accept the college's invitation to stay all night. Miss Einhorn will send a letter giving her vacation address and the address of her club's faculty adviser, so that the final decision as to dates and plans may be communicated to her.

March 24, 1954

Mr. Jason Epstein
Doubleday and Company
575 Madison Avenue
New York 22, New York

Dear Mr. Epstein:

Professor Wiener would like you to look at the enclosed photograph (and to take very good care of it, since it is the only copy available). It was taken in Madras, and shows Professor Vijayaraghavan, Director of the Ramunajan Institute of Mathematics, in conversation with Professor Wiener, in the lobby of the latter's hotel in Madras.

Professor Wiener suggests that this would make an ideal illustration for the chapter on India in I Am a Mathematician.

Sincerely yours,

Mrs. James Cole
Secretary to Professor Wiener

24 march 1954

Monsieur le Haut Comissaire a l'Enegie Atomique
69, rue de Varenne
Paris 7, France

Monsieur et cher colleague:

M. Georges Dube, mon viel eleve, m'ecrit qu'il cherche a travailler pour votre Commission, Pendant l'annee academique commencent dans September 1954 comme mathematicien avec le ranque de stagiaire. M. Dube est citoyen des Etats-Unis, mais il est d'origine canadien-francais. Il parle egalement l'anglais et le francais.

Comme mon eleve je ne l'ai trouve pas parmi les tous premiers, mais je le connais depuis longtemps comme mathematicien abile, instruit, et sincere. C'est un jeune homme tres sensible et tres sympathetique, et il est bon travailleur. Comme soldat en Japon il a fait la connaissance de mon autre viel eleve Shikao Ikehara, et il l'a aide a servirre le temps tres difficile suivantes la seconde guerre mondiale, lui donnant un support considerable de ses ressources tres minces.

Il a le sense de la vie scientifique internationale, et je suis sur qu'il remplira dans une maniere tres satisfactore chaque position scientifique qu'il cherche.

Viellez accepter, Monsieur, mes sentiments les plus devouees et distinguees,

Norbent Wiener, Professeur
des Mathematiques au Massachusetts
Institute of Technology

March 25, 1954

Mrs. James Cole
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, 39, Massachusetts

Dear Mrs. Cole:

It was a great pleasure to speak to you yesterday concerning the prospect of Professor Wiener's coming lecture at Mount Holyoke. I am writing now to confirm our conversation and to tell you again how much we are looking forward to having Professor and Mrs. Wiener with us

As I mentioned in our conversation, there has been some difficulty with the previously arranged date of Thursday, April 22nd. We are anxious to have Professor Wiener here when the larger part of the college community will be free, and therefore, I suggested the dates of Wednesday, April 28th, and as second preference, Tuesday April 20th, which are both reserved for him at this point. We very much hope that Professor Wiener will find one of these two dates convenient. I would suggest that you write the faculty advisor for our club, since she will be here at college during the time when I am on vacation: March 25~~th~~ - April 11th. She is Miss Victoria Schuck and can be reached at 15 Jewett Lane, South Hadley, Mass, or at Holyoke 2-5461 by phone. My vacation address is 7 Parker Ave. West Deal, N.J.

In addition to the date, it would be most helpful to know the topic of Professor Wiener's talk in early April so that Publicity can be attended to. We should also like to know when Professor and Mrs. Wiener will arrive and how long they plan to stay. If they should not be coming by car, I will be happy to forward information on trains. As you know, the college takes pleasure in offering hospitality: meals and overnite, to its guests.

I shall be glad to answer any questions which you might have, and will be able to conclude specific arrangements once I know of Professor Wiener's plans. We are looking forward to having both her and his wife with us, and shall await your reply concerning definite plans.

4/5/54 -
Mrs. Wiener
Sup!

Arrive about 5:00
return after lecture

"Communicatn + Sci Meth"

Sincerely yours,

Ellen Einhorn
Ellen Einhorn
Chairman-Political Science

[arr 5/5/54]

March 25, 1954

Mr. Alistair Cooke
The Manchester Guardian
53 East 51st Street
New York, New York

My dear Mr. Cooke:

Jason Epstein of Doubleday has suggested that I write to you about an idea that occurred to me recently. I have endeavored unsuccessfully to reach Orson Welles to discuss the matter with him. In my opinion, the present age cries out for satire, and if we find that the ages that have gone before us have among their masterpieces pieces of satirical works which prove to have a peculiar relevance to the times in which we live, they are nonetheless fit to call to the attention of today's public.

The work of which I am thinking is Ben Jonson's The Tragedy of Sejanus. Sejanus, a Roman senator of the most corrupt age of the empire, has tried by intrigue and the effective use of informers to displace the Emperor Tiberius and to arrive at the supreme power. In the course of this process he does not scorn to use as his tools perverses and degenerates. He persuades the Emperor, the commander-in-chief of the Roman army, to go into retirement and to devote himself to personal pleasures, leaving the actual work and rewards of government to Sejanus himself. Finally, Sejanus has become dangerous to all the elements which have flattered him and played the sycophant. He is denounced by the Emperor in the full Senate, and the latent hatred for him among a group of equally corrupt men expresses itself as universal condemnation. He is killed, thrown on the gibbet, and his body is torn to pieces by the mob. One of the most powerful scenes is laid on the floor of the Senate, when a letter from Tiberius plays with Sejanus, now seeming to absolve him, now to condemn him, but ultimately clearly and unequivocally condemning him to death--to quote from the summary of the play by Ben Jonson himself. The play is second only to the works of Shakespeare in its purely literary values, and does not give way to them in its power, energy, and dramatic significance.

I think that the presentation of this play, perhaps heavily cut, would be extremely timely. It should be even more powerful in modern costume. I beg you to consult the original play to see if appropriate use cannot be made of it. Please let me know as soon as possible if my suggestion meets any interest on your part.

Sincerely yours,

NW:bbc

Norbert Wiener

March 25, 1954

Mr. Edward R. Murrow
Columbia Broadcasting System
485 Madison Avenue
New York, New York

My dear Mr. Murrow:

Dr. Iago Galdston has suggested that I write you about an idea that occurred to me recently. I have tried unsuccessfully to reach Orson Welles to discuss the matter with him, for, in my opinion, the present age cries out for satire, and if we find that the ages that have gone before us have among their masterpieces of satirical works which prove to have a peculiar relevance to the times in which we live, they are nonetheless fit to call to the attention of today's public.

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I think that the presentation of this play on radio or television, perhaps heavily cut, would be extremely timely. It should be even more powerful in modern costume. I beg you to consult the original play and see if appropriate use cannot be made of it. Please let me know as soon as possible if my suggestion meets any interest on your part.

Sincerely yours,

Normbert Wiener

NW:bbe



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

26 March 1954

Dr. Norber Weiner
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Weiner:

Your works on Cybernetics, particularly as they apply to communication, have been of great interest to me both professionally and personally. As you can well realize, the internal communications problem within an organization of the size and complexity of the Air Force is immense. It is well recognized that failure to "get the word" is a great contributor to lowered effectiveness and efficiency.

The question I would like to ask is: can the application of the principles of cybernetics lead us to a fresh and perhaps greatly simplified approach to this problem? Do you know of any efforts to date along this line and, if not, do you feel that fruitful results could be obtained from efforts directed specifically to the question of how to obtain better internal communications within the Air Force. I am, of course, not referring to our telephone or radio net, but to what can be done to improve communications between this Headquarters and the subordinate organizational units, among or between organizational units and among individuals within each unit.

Your comments on the relationship between entropy and disorganization parallel very closely my thoughts as applied to endeavors to introduce new approaches or new ideas both into individuals within the Air Force and into the Air Force as a whole. I have developed the following formula to express my views as to the major factors involved:

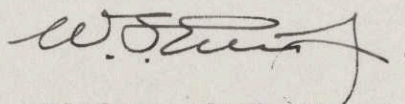
$$\frac{E}{T} \approx \frac{d^3}{r^3} \cdot c$$

Where: E is the effort or energy introduced or withdrawn.
T is the elapsed time involved.
d is the disturbance, turbulence, distortion, disorganization or entropy increase or decrease in the system or situation.
r is radius of the sphere of the system or situation.
c is a function of the state or condition of the system or situation. C approaches zero when the system is approaching total imbalance or complete stability and one when the system is approaching precise balance or total instability.
 \approx is used since a perfect balance between opposing forces is only theoretically possible and this formula is devised for application to actual situations where precise equality never exists for sufficient duration to be of any significance.

As you can readily see from the above, under certain conditions, a decrease in entropy or an increase in organization can be brought about by a withdrawal of energy. I have found this formula of value, in the abstract, when considering various courses of action that might be taken and the amount of time to be used in correcting situations that arise or exist. As you can also recognize time and energy are interchangeable within tolerable limits - the degree of distortion that can be afforded sets the limit.

Your reaction to the validity and potential uses of the formula would also be appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read "W. T. Ellis, Jr.", followed by a period.

WELDON T. ELLIS, JR
Deputy Director
Manpower & Organization, DCS/O

GENERAL  **ELECTRIC**
COMPANY

GENERAL ENGINEERING LABORATORY

ONE RIVER ROAD, SCHENECTADY 5, NEW YORK . . . TELEPHONE 4-2211

March 26, 1954

Dr. Norbert Wiener
Professor of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Wiener:

The Department of Commerce of the State of New York is planning to have a conference this summer concerning the general subject of "Automation". They have asked me to "clear the air" somewhat by briefly discussing some of the new concepts that are being studied and discussed today.

In this connection, it will certainly be necessary to talk about your concept of Cybernetics. It will be greatly appreciated if you will be kind enough to assist with the following three questions:

First, what is the correct pronunciation of Cybernetics? Is it Cybernētics or Cybernētics?

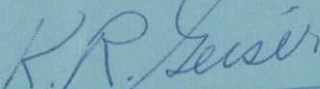
Secondly, in your book entitled "The Human Use of Human Beings", you defined the science of Cybernetics as "This study of messages, and in particular of the effective messages of control". My question is, is this still the best short form definition, or have you changed your concept as your thinking has been extended?

Thirdly, people are now talking of Cybernetic systems. In your opinion, is this a good definition of Cybernetic systems: "Feedback systems including at least one of the following - a.) input signals obtained from transducers capable of sensing physical phenomena or capable of making measurements or doing low-order discrimination. b.) more than one source of input signals resulting in signals which must be selectively considered c.) information and message handling problem sufficiently complex to require computer techniques and components to accomplish either logical or conditional operations".


If not, it would be appreciated if you would so alter the wording to make it consistent with your concept.

Thank you kindly for your cooperation. I hope I may be instrumental in conveying to this New York State group the importance and long range potentialities of your most important work.

Yours very truly,



K. R. Geiser, ENG. SUPERVISOR - COMPUTER UNIT
Bldg. 37 - Rm. 411



KRG:nb

[ans 4/15/54]

SUITE 1700
50 BROADWAY
NEW YORK 4, N. Y.

March 26, 1954

Professor Norbert Wiener,
Massachusetts Institute of Technology,
Cambridge, Mass.

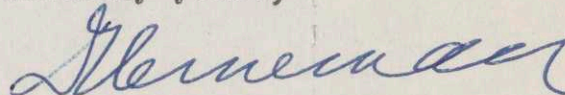
Dear Professor :

In connection with our active interest in the influence of electronics on the industrial and human progress, I have been trying to acquire your book "Human Use of Human Beings", but all bookstores tell me that the present edition is completely exhausted, and that a revised edition will not be published before May of this year.

In view of our urgent need for this book, I have been wondering whether you would not have a spare copy available which you could make available to us for the next few weeks.

Thanking you very kindly in advance I am,
Dear Professor,

Sincerely yours,



D.N. Heineman.

(14)

:ML:MB.

{ans 4/12/54}

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March 26, 1954

Professor Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Dear Professor Wiener:

Your share of the royalty on the reprint of your book, *FOURIER INTEGRAL AND CERTAIN OF ITS APPLICATIONS*, amounts to \$68.14. Our check for that sum is enclosed.

We are also sending along a copy of the accounting report received from Dover Publications showing sales for the period July 1, 1952 through June 30, 1953.

Sincerely yours,

Jack Schulman

JS/mz
Enc.

COPY

DOVER PUBLICATIONS, INC.

1780 Broadway at Fifty-Seventh Street New York 19, N. Y. Columbus 5-7988

December 29, 1953

2nd Royalty Accounting to CAMBRIDGE UNIVERSITY PRESS
For: FOURIER, INTEGRAL AND CERTAIN OF ITS APPLICATIONS by
Norbert Wiener

Covering period from 6/30/52 to 6/30/53

Number of copies on hand at <u>1st</u> accounting		<u>958</u>
Number of Damaged copies	<u>0</u>	
Number of Complimentary copies	<u>0</u>	Total <u>0</u>
Number of copies sold		<u>230</u>
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THE DANCING MEN OF PROVIDENCE

Correspondence: Roland Hammond, M. D., Dancing Master,
41 Boylston Avenue, Providence 6,
Rhode Island

The Seventh Annual Cotillion of The Dancing Men was held March 19, 1954, at the Providence Art Club. In addition to the six members of The Dancing Men, Philip Mather, Norbert Wiener, James Keddie, Jr., and Samuel R. Meaker were present from The Speckled Band. Claude R. Branch and L. W. Cornell, Jr., were present as dinner guests. Several physicians and the literary editor of the Providence Journal later joined the group to hear some of the papers. The sign "221B" was attached to the door knocker and the sundial with the cryptic message held down by a pebble was on the table. Toasts were quaffed at intervals during the dinner to the Master, The Woman, Mycroft and Dr. Watson's second wife. These toasts were drunk in Beaune kindly supplied by Douglas Lawson, who was prevented from attending by illness. After greeting the company, the Dancing Master presented some new evidence on The Dancing Men. Through the kindness of Nathan Bengis, a letter had been received from G. J. Cubitt, who, as a boy, had used the Dancing Men figures to compose messages in the cipher. These messages were seen in 1903 by the literary agent and were said to have inspired the writing of The Dancing Men, which was published that same year. He was a guest at the Hill House Hotel in Happsburg (pronounced Hazeboro) near Norwich, which was kept by the boy's mother. Mr. Cubitt, now grown to manhood, in his letter reproduced some of the alphabet of The Dancing Men and also a brief message which has not yet been translated. By unanimous request of The Dancing Men, Dr. Samuel R. Meaker was persuaded to come to Providence and read his paper, "Watson Medicus", which he originally presented four years ago at a meeting of The Speckled Band. It was received with as much pleasure as at the original presentation. Mr. Garrett D. Byrnes contributed a paper entitled "The Adventure of the Four Measuring Sticks". This was a scholarly analysis of the readability of four of the adventures. This measuring stick is now being used by several investigators as a method of determining the interest shown by readers in all forms of writing. Dancing Men toasts were given in the names of Hilton Cubitt, Abe Slaney and Elsie. The Musgrave Ritual was recited in English and in Latin. The entire company joined in a lusty rendering of "We Never Mention Aunt Clara". The meeting adjourned at 11 P. M., but a discussion by challenge and disputation was continued until a late hour.

March 26, 1954

Mrs. Constance Rogers
Publicity Department
Houghton Mifflin Company
2 Park Street
Boston 7, Massachusetts

Dear Mrs. Rogers:

The jacket design and flap copy for the new edition of The Human Use of Human Beings that Mr. Olney sent to Professor Wiener meet with his approval.

Briefly, Professor Wiener's major activities since the war have been as follows:

From 1947 on, he has collaborated in neurophysiological research with Dr. Arturo Rosenblueth of the Instituto Nacional de Cardiologia in Mexico.

In 1951, he was a Fulbright professor at the University of Paris.

Most recently, he has been engaged in research in the foundations of quantum theory, assisted by Dr. Armand Siegel of the physics department at Boston University. If you want more information about this work, no doubt Dr. Siegel could help you.

Professor Wiener will not be back in the office until April 5. Should you need any further information, you can reach him then.

Sincerely yours,

Mrs. James Cole
Secretary to Professor Wiener

26 mars 1954

M. Robert Vallee
2, rue Mabillon
Paris 6, France

Monsieur et cher collègue,

Il me semble que vous avez obtenu un bourse au côté de la Fondation Internationale des Etudiants ici à notre école. En attend que vous arriverez ici à Boston au commencement de juin.

A cet epoch je m'occuperai avec deux choses -- la préparation d'une suite des conférences sur la cybernetique pour un group soigneusement choisi d'electrotechniciens auxquelles M. Shannon, M. Lee, M. Fano et moi, nous donnerons un cours pendant la semaine troisième de juillet. A debord de cela, je devoue mes efforts a l'écriture dans trétis definitif de cybernetiques, dans laquelle je discuterai le point de vue generalize de Gibbs dans la théorie d'information, dans la technique operationelle, et dans la methodologie generale de science.

Je ferai le plus part de mon travail dans ma maison d'ete, a les montagnes de New Hampshire. Nous avons bien de space la-haut pour vous comme mon hôte et mon collaborateur. Nous pouvons passer la moitié de jour dans le recherche scientifique et dans le travail de composition scientifique. C'est un région très joli, ou il y a des promenades aussi beaux, et ou il y a un lac et un plage ou nous pouvons nager, chaque jour. Vous pouvez faire part à mes conférences et plus tard passer des semaines a Cambridge en plein contact avec les etudiants qui sont vraiment vos hôtes. Les details ne sont pas difficiles a arranger. Je vous assure que je suis convaincu que votre visite peut être très utile a moi et je pense également à vous. Vous recevrez les nouvelles de votre invitation directement des etudiants-mêmes, mais je veux aussitot que possible à vous souhaiter en demeure très agreable chez nous.

Veillez recevoir mes sentiments le plus distingues et devoues,

Norbert Wiener

NW:bbc

[ans 4-6-54]

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Ref. No. CD/6/1026/54.

27.3.54.

To
Prof. Norbert Wiener,
Massachusetts Institute of Technology,
CAMBRIDGE, MASS,
U.S.A.

Dear Sir,

Under instructions from our consti-
-tuent ~~XXI~~ Prof. P.C. Mahabhanobis, Secy. Indian
Statistical Institute, we beg to enclose
herewith a Demand Draft No. 072230 for
\$178.29 dated 24.3.54. on M/S, IRVING TRUST
COMPANY. NEW YORK.

Please acknowledge receipt. *R*

Yours faithfully,

[Signature]
Agent.

Encl: As Stated.

[ans 4/27/54]

Dr. H.C. Shepherd, M.D.,
The Colonial Hospital,
San Fernando,
Trinidad,
British West Indies,
27th. March 1954

Mr. Norbert Wiener,
Professor Of Mathematics,
Massachusetts Institute Of Technology,
Boston, Mass.

Dear Prof. Wiener,

I have noted in the book catalogue of Messrs John Wiley & Sons, Book Publishers, that you have written a book entitled "Cybernetics or Control and Communication In The Animal and The Machine" which was published in 1948.

I am very interested in obtaining information concerning the general theory of cybernetics with special reference to its applications to biology and medicine. In the case of such a new-born science as cybernetics, it is probable that advances may be very rapid and that a book published on the subject in 1948 may be somewhat incomplete by 1954.

I would very much appreciate if you would be so good as to let me know:-(1) whether your book has been revised since 1948 and whether it includes a presentation of the theory of cybernetics.
(2) the titles of any other publications on cybernetics which you consider as having a special bearing on biology and medicine.

Hoping that you will favour me with an air-mail reply to this inquiry,

I am,
Yours truly,

.....*H. C. Shepherd*.....
H.C. Shepherd,

(12)

[ans 4/13/54]

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March 29, 1954

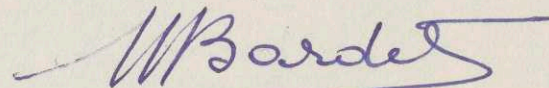
Professor Norbert Wiener
M.I.T.
77 Massachusetts Avenue
Cambridge 39
Mass.
U.S.A.

Dear Mr. Wiener :

In the absence of Professor Morot-Sir, at present in the United States, I wish to thank you for the various articles you were kind enough to send us.

We are very pleased to have these documents as a part of our library. They will be most useful to future grantees.

Yours sincerely,



Marguerite Bardet (Mrs).

The Florida State University
Tallahassee

SCHOOL OF HOME ECONOMICS
DEPARTMENT OF INSTITUTION ADMINISTRATION

March 29, 1954

Dr. Norbert Wiener
Professor of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Wiener:

For some time I have been aware of the possibility of applying Cybernetics to the administration of quantity food production techniques which occur in large hospital dietary departments.

The operation of such departments involves many calculating procedures such as the daily and constantly changing determination of production quantities of food to be prepared for hospital patients and personnel, the compiling of purchase orders including marketing conversion factors which transfer production units of weights and volume into merchandizing units by which food is packaged and sold and the wide variety of nutritional calculations which are involved in diet therapy services offered by the medical staff in such institutions.

Accordingly, I am writing to ask if you would be kind enough to refer me to a person, preferably in New York City or in Princeton, New Jersey, who might be interested in discussing this with me.

Please be assured that I shall very much appreciate any assistance or guidance which you care to offer.

Very truly yours,

Mary K. Bloetjes

Mary K. Bloetjes, Ph.D.
Professor and Department Head

*Send out
Alex Rathe*

r

(13)

[ms 4(13/54)]

INSTITUTO NACIONAL DE LA INVESTIGACION CIENTIFICA
PUENTE DE ALVARADO No. 71
MEXICO 3, D. F.

México, D. F., 30 March 1954.

Professor Norbert Wiener,
Department of Mathematics,
Massachusetts Institute of Technology,
Cambridge 39, Mass., E. U. A.

Dear Norbert:

I had purposely delayed a reply to your letter of 19 February while waiting for Rashevsky's letter, which unfortunately has not reached me. The matter would no doubt be referred in any case to the Instituto Nacional de la Investigación Científica which, as you know, is the scientific agency of our Government and has full jurisdiction in this case. In order that the former might be in a position to reach a decision further information would be helpful, even though, as I understand from your letter, no financial assistance would be required.

I am very happy to hear that you enjoyed so much your recent trip to India. We hope to see you again in Mexico before long.

Best regards to Margaret and to all our common friends,

Yours cordially,

Manuel Sandoval Vallarta
Dr. MANUEL SANDOVAL VALLARTA.

MSV/cab

3

[ms 4/12/54]

Copy sent to Rashevsky

COPY

INSTITUTO NACIONAL DE LA INVESTIGACION CIENTIFICA
Puente de Alvarado No. 71
Mexico 3, D. F.

Mexico, D. F., 30 March 1954.

Professsor Norbert Wiener,
Department of Mathematics,
Massachusetts Institute of Technology
Cambridge 39, Mass., E. U. A.

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Best regards to Margaret and to all our common friends,

Yours cordially,

Dr. Manuel Sandoval Vallarta

THE FELLOWSHIP OF RECONCILIATION

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JOHN M. SWOMLEY, JR., ACTING SECRETARY
A. J. MUSTE, SECRETARY EMERITUS

JOHN OLIVER NELSON, CHAIRMAN
S. F. BODEN, TREASURER

March 31, 1954

Dr. Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Dr. Wiener:

I am writing to ask if along with a few other well known citizens, you will sign the enclosed statement. We receive letters and telephone calls which indicate that many people are deeply troubled and feel that some such appeal as this for "time to reflect" should be made without further delay.

We plan: 1) to forward the statement to the President and to make some public announcement of the proposal and the persons signing it as soon as a number of signatures have been received. It will of course be made clear that signers are not committing themselves to F. O. R. program or policy, beyond association with this one specific effort.

2) To put out the opening paragraph in the form of a petition (with the rest of the statement printed on the back) so that other Americans may be able to associate themselves with this appeal and quickly inform the President and Congressmen of their concern.

Since, if such a step is taken, it should be carried out rapidly, will you send us a line immediately stating whether you will sign this statement and, if yes, will you telegraph us collect and then mail at once samples of your signature on a plain card?

Earnestly hoping to hear from you by return mail, I am,

Sincerely yours,

A. J. Muste
A. J. Muste

Enc.

AJM:gs

This letter is being sent to the following:

E. B. White
Norbert Wiener
Murray Lincoln
Douglas V. Steere
Harry Emerson Fosdick
Harold Bosley
Dorothy Thompson
John Haynes Holmes
Paul Scherer
Lewis Mumford
Albert Einstein
Robert J. McCracken
John Oliver Nelson
Norman Thomas
Robert M. Hutchins
Howard Thurman
Benjamin Mays
H. Furfey
Henry J. Cadbury
Pearl Buck
J. C. Bennett
James Patton

A. J. Muste
21 Audubon Avenue
New York 32, N. Y.
MONument 2-2981

H-BOMB STATEMENT

We call upon President Eisenhower to order immediate suspension of the H-bomb tests reportedly scheduled to take place in the Pacific in April and of all similar experiments in mass destruction weapons. We suggest that, at the least, the Administration should at once make it clear that in future such tests will not be conducted pursuant to a unilateral decision by the United States and subject to its sole supervision and control.

Conducted under conditions that supposedly furnished complete protection from injury to human beings, the March 1 explosion has already affected 379 known victims. Twenty-three of them are Japanese fishermen who were burned by radioactive ash that fell on their fishing ship 80 miles away in the Pacific. Representative Chet Holifield has stated that the explosion was "so far beyond what was predicted that you might say it was out of control." President Eisenhower has indicated that the scientists were taken unawares by the magnitude and effects of the explosion. It is sheer irresponsibility under such circumstances to proceed further along the same path and especially with the detonation of a bomb repeatedly stated to be much more powerful than the one exploded on March 1.

The danger of contaminating the marine food supply of multitudes of people appears to be real. In view of the admitted miscalculation in relation to the effects of the March 1 bomb and losses to Japanese fisheries running into millions, what guarantee can we give impoverished and anxious peoples largely dependent on a fish diet--what guarantee indeed can the world be given--that a greater, perhaps catastrophic, miscalculation will not be made? No nation has the right for purposes of military experimentation to inflict this horror upon innocent and defenseless multitudes who are not consulted as to whether they shall thus be exposed to the risk of starvation or poisoning. It should not be assumed that the Pacific Ocean is an American lake and a private proving ground for the Armed Forces of the U. S.

The effect of continuance of the present course will be the alienation of masses of people in Asia and throughout the world including, it is increasingly clear, the allies of the United States. People cannot be expected to look with hope to a government so obsessed with fear of an enemy that it is prepared to risk human extermination as the answer to the threatened expansion of its foe.

The American people and the rest of the people throughout the world need time to evaluate the meaning of the recent event in the Pacific and of the whole atomic arms race and to consider soberly whether an alternative course cannot be found. To this the best brains of our own and other countries should now be devoted. This is not possible if they are devoted to the further "perfection" of weapons of extermination and in such a psychological climate of dread and suspicion as the continuance of the H-bomb experiment program will inevitably perpetuate and heighten.