196

CORRESPONDENCE July 1 - 20, 1954

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National Geographic Society

WASHINGTON 6, D. C.

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THOMAS W. McKNEW, SECRETARY

SCHOOL SERVICE DIVISION
Geographic School Bulletins
RALPH GRAY, CHIEF

July 1, 1954

Professor Norbert Wiener
Bear Camp Pond Road
South Tamworth, New Hamsphire

Dear Mr. Wiener:

It was a great pleasure seeing you and Mrs. Wiener again at Bob and Dolly Gifford's several weeks ago. I enjoyed hearing you tell of that marvelous trip to India and the way the red carpet was rolled out for you everywhere you went. It was exciting, too, to learn of all the writing activity you are presently engaged in. Quite an amazing volume and variety of work!

While on the subject of your books, I noticed in this morning's New York Times an announcement of the Anchor Book publication of THE HUMAN USE OF HUMAN BEINGS, of which you told me in the course of our conversation. Of course this same announcement appears in other newspapers all over the country. Congratulations again, not only for the appearance of this book in new format, but for being selected by Anchor Books as one of their lead-off authors on the forthcoming series of important original publications. Incidentally, if my former Doubleday colleague Epstein hasn't yet come and gone, please give him my regards. You mentioned he was coming to New Hamsphire especially to go over your new manuscript with you in person.

The National Geographic Society, I can reliably report after exactly one month's service, is a marvelous organization to be associated with. My colleagues are most pleasant and the work greatly to my liking.

You'll be interested to know that Samuel W. Matthews, whose office is next to mine, is currently preparing a feature article for the National Geographic Magazine on the subject of "Electronic Brains." While we were discussing the subject one day I mentioned to Sam that I knew you personally, having been a Bear Camp Pond neighbor of yours for some years. Sam was delighted to know that because he has long been convinced that his article would be incomplete without information that could only come from the top man in the field. I volunteered to write a note of introduction for him.

Sam is planning to spend some time in Massachusetts this month, and if it is convenient with you and Mrs. Wiener, he could drive up to East Sandwich for a brief visit with you around the middle of July. He is especially eager to meet you because he feels that quoting your words on this important subject would be of great interest to the Society's two million members.

He is planning to contact you through M.I.T., so you may already have heard from him. If not, and if you would care to drop me a note here at the Society, I would be most happy to forward any message to him. You'll enjoy meeting Sam.

Again let me state how pleased Mrs. Severy and I were to see you and Mrs. Wiener on our recent jaunt to New Hampshire.

With all best wishes to you and your family,

Sincerely,

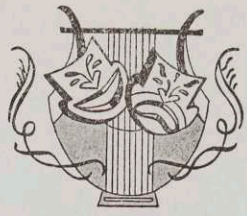
Merle Severy

Merle Severy
Editorial Staff

kd

[ans 7/9/54]

UNIVERSITY THEATRE



THE UNIVERSITY OF TOLEDO

TOLEDO 6, OHIO

1618 Campus Drive
Toledo 6, Ohio.

July 2, 1956.

Dear Prof. Weiner:

Our son, who is interested in science, math and philosophy, introduced us to your autobiography, which he borrowed from the library. Despite the fact I'm neither a mathematician nor scientist, I enjoyed reading your book with great interest and sympathy, as the problems of a sensitive human being growing up and finding himself are universal.

My husband hasn't had a chance yet to read your book, as we had to leave for Toledo, where he is now teaching at the summer session - a course in scene design, as well as directing the play "Born Yesterday" which is being produced by the university the end of next week.

Since you mention in your book that you and your wife like the theatre, maybe you would consider making an exchange of books. If you will send us your two volumes of your biography (I am looking forward to reading the second volume), we will send you a copy of my husband's book "New Theatres For Old". Enclosed is a circular giving some information on his book. I don't know the price of your books, but hope you'll find it a fair exchange. Although the book is used as text book or required reading in many of the university and drama schools, theatre lovers as well as theatre people still find it stimulating reading.

During the coming year my husband has been invited to direct a play and teach, for a month at Boston University. Perhaps we may have an opportunity to meet.

Our mailing address till July 14th is the above at Campus Drive. After that, our home address will be: 130 West 88th St., New York 24, N.Y.

Sincerely,

Mrs. Mordecai Gorelik

HOGAN LABORATORIES, INC.
155 PERRY STREET
NEW YORK
14

JOHN V. L. HOGAN
PRESIDENT

TELEPHONE
CHELSEA 2-7855

2 July 1954

Professor Norbert Wiener
Massachusetts Institute of Technology
Cabridge 39, Massachusetts

Dear Dr. Wiener:

In reading the current issue of "The Baker Street Journal" last night, I was happy to learn that you are associated with the Speckled Band of Boston. It is a pleasure to find that we have common interest not only in communication problems, but also in Sherlock Holmes.

Sincerely yours,

John V. L. Hogan

John V. L. Hogan

[ans 7/9/54]

The Call Association, Inc.

a non-profit foundation dedicated to the creation of a cooperative commonwealth

303 FOURTH AVENUE, NEW YORK 10, GRamercy 3-4286

July 2, 1954

Dear Sir:

As most of us are aware, the McCarthy phenomenon has had an unprecedented impact on America's political, legislative, social, cultural and academic life.

The results of such influence have been apparent, but the reasons for the success achieved thus far by Senator McCarthy have not been fully analyzed.

In its issues of August and September, the Socialist Call will publish the opinions of specialists in the various social-sciences, law, politics, journalism, radio, public relations, etc., as to why Senator McCarthy has been so effective in achieving his aims at this time. We would like to invite you to be a contributor to this symposium.

We wonder, therefore, if you would be good enough to present a brief summary of your views concerning the sources of Senator McCarthy's success, based on the available analytical tools in your field of specialisation.

We do hope you will find it possible to contribute to this symposium. We are hopeful that, out of it, may come some new insights into the roots of Senator McCarthy's achievements.

Thank you for your cooperation.

Cordially,

Herman Singer

Herman Singer, Editor
Socialist Call

oeiu-153

[ans 7/9/54]

South Tamworth
New Hampshire
July 2, 1954

Stavid Engineering
312 Park Avenue
Plainfield, New Jersey

Gentlemen:

On maturer consideration, I do not intend to sign the contract sent to me for consultation services nor do I intend to give such services. There are matters which are in the small print of the contract which are unacceptable to me, and I am afraid that if I should accept the contract I would commit myself to a course of conduct for the future which I do not intend. I regret having caused you any inconvenience, but I must reiterate what I said at the beginning to Mr. Paul that I am not in the business of consulting engineering, and have no intention of exposing myself to its trials and tribulations.

Sincerely yours,

Norbert Wiener

P. S. I enclose contract forms unsigned.

N. W.

NW:jc

Enc.

Philadelphia
July 4th

Prof. Norbert Wiener
Mass. Institute of Tech.
Boston, Mass.

Dear Prof. Wiener:—

I just finished reading your Cybernetics and Society. While reading I started dreaming à la Jules Verne of a machine which would be capable of recording on a televized film the fleeting thoughts and imagery of the human conscious and subconscious — regardless of individual control. As a fantasy fiction writer I'd like to do a story about a young scientist who has just perfected such a machine and sets out to consult with important members of the State in view to its possible purchase. A sequence of descriptions of what goes on in the minds of those consulted, the resulting conflict and fear of being "uncovered" may be very interesting. Through the case of a President, &c. of State or Defense or even a Russian Ambassador, many of the contemporary

conflicts might be adroitly presented in all their absurdity. For some false pretext each one refuses to use the machine, the real motive being self-ocare. The story might end when the young lad, returning to his laboratory begins to wonder about how his machine, put into operation in his own home, would complicate life between himself and his wife, possibly even destroy their marriage. As a climax he blows up the machine.

Have you any plausible technical ideas on how such a machine could work, at least scientific enough so as not to antagonize the intelligent reader? I'd say much appreciate hearing from you.

In anticipation of your coöperation, I am,

Sincerely and respectfully,

Adam F. Leesgood

Address:
Adam F. Leesgood
Central Y. M. C. A.
Philadelphia

[ans 7/22/54]

South Tamworth
New Hampshire
July 4, 1954

Mr. Dennis O'Harrow
American Society of Planning Officials
1313 East Sixtieth Street
Chicago 37, Illinois

Dear Mr. O'Harrow:

Before I ratify my acceptance of the invitation to give the keynote speech at your National Planning Conference at Philadelphia on September 27, and before I forward my manuscript, I should like clarification of the term honorarium used by you.

Sincerely yours,

Norbert Wiener

NW:jc

[ans 7/7/54]

7/21
MC

JOHN WILEY & SONS, INC.

ESTABLISHED 1807

PUBLISHERS OF BOOKS

440 FOURTH AVENUE

NEW YORK 16, N. Y.

July 6, 1954

Mr. M. Z. vKrzywoblocki
Code 501
Room, 1065, Michelson Laboratory
U. S. Naval Ordnance Test Station, Inyokern
China Lake, California

Dear Mr. Krzywoblocki:

We are quite willing to grant you permission to reprint the material listed below, provided:

1. The illustrations or quotations to be used have appeared in our books without credit or acknowledgment to another source.

2. Suitable acknowledgment to the source be given, preferably in the following form: "Reprinted with permission from (author) (Title) (Copyright Date), John Wiley & Sons, Inc."

In respect to this method of giving credit, however, we are willing to accept the standard editorial practices of other publishers as long as the essential items above are included.

This borrowed material will be used in your personal research work.

Sincerely yours,

J. S. Barnes
Vice President

Wiener: CYBERNETICS
Chapter II

INSTITUTE FOR CHILD STUDY
University of Maryland
College Park, Maryland

JUL 6 1954

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

Dear Dr. Wiener:

Would you please send me a reprint of your article Problems of organization which appeared in Bull. Menninger Quart, 1953, 17, 130-138. This will be used in working with graduate students in human development.

Very truly yours,

Ira J. Gordon

Sent 7-30
PG

South Tamworth
New Hampshire
July 6, 1954

Mr. Henry A. Kissinger, Executive Director
Harvard University International Seminar
10 Weld Hall
Cambridge 38, Massachusetts

My dear Mr. Kissinger:

I am very much interested in talking to the International Seminar at Harvard University. I am up in the White Mountains for the summer but shall be down in Boston for the week of July 12. This will be the only week I will be in Boston during the entire summer. Therefore, the only date which you suggest to me which will be open will be Thursday, July 15. I haven't quite finished the exact talk that I shall give, but if the date meets your approval, I shall try to think it out during the near future.

Sincerely yours,

Norbert Wiener

NW:jc

[ans 7/30/54]

DOUBLEDAY & COMPANY, INC., *Publishers* 575 MADISON AVENUE, NEW YORK 22 ~ MURRAY HILL 8-5300

July 7, 1954

Dear Professor Wiener:

Here is the outline of Chapter One that I promised you. I am not sure that this will be the best way to proceed, but I hope that you will give it a try and see just how far it takes you.

I think that we should consider Chapter One a sort of preface in which you look backward as well as forward at your career, and give the reader a clear picture of what kind of person you had been and what kind you are to become.

It is extremely important in this connection that you establish the substance of your mathematical work in the clearest possible language. I suggest that in cases where there are no simple equivalents to mathematical terminology, you resort to imagery, and I have suggested in one place in the outline where you might do this.

You should also establish in this first chapter some of the other important characters who will appear now and then in the text. I have mentioned a few in the outline ~~here~~, but, of course, you will add some others that you think are necessary. Be sure, however, always to introduce them by their whole names. The scientific shorthand, which gives only the last name, is awkward in a book directed toward a general audience, and try to establish them as personalities as you introduce them, remembering as you do it the way you did it in the case of the Chinese ice-skater. Remember to be very clear about the state of mathematics when you entered the field with the Lesbegue theory. In order to make your discovery really dramatic, you will have to say how it revised, reformed and had to combat the status quo.

There is no point in this chapter in talking about your visits to Strassburg or Cambridge. This will come in later chapters that will amplify the points that you establish in this prefatory first chapter.

I hope that this works out. Good luck.

Best to Mrs. Wiener,

Sincerely,

Jason Epstein

Professor Norbert Wiener
Sandwich
New Hampshire

JE:nr
Enclosure

P.S. I am not returning the original chapter I, since I think it better that you start from scratch. If, however, you feel that you must have it, won't you let me know.

jle

I. What this book is.

A. Where it begins.

1. Year and author's age.
2. His geographical location.
3. His career as of that time.

} 2 paragraphs

B. Ex-Prodigy

1. What it dealt with
2. Father - Son
3. Early education
4. Mal-adjustments
5. Ambitions
6. Aggressiveness

} 4 - 8 paragraphs

II. The argument of this book.

A. Conflict with outer-world.

B. Making a career.

1. M.I.T. - what it was like - 2 paragraphs
2. The author's disadvantages
   a. Having been a prodigy
   b. Incomplete social development
   c. Father's intransigent attitude toward his colleagues
   d. Author's European rather than American training - thus no nearby benefactors.
   e. Anti-Semitism - Birkhoff - analysis

C. Author's own scientific qualifications.

1. Virtues of independence
2. Value of hard intellectual work

✓

3. Specific training

(Russell
Hardy
Hadamard, etc.)

D. Author's scientific attitude

1. To find a problem deriving from physics that would have the texture of good mathematics.

2. This problem turned out to be the Lesbeque theory.

a. How the Author encountered it.

3. What it was.

a. The best attempt as of that time to ascertain the combinations of events needed to make a sound probability theory.

b. What this means in layman's language.

c. The Borel connection. → one, clear paragraph.

E. From Lesbeque to the Brownian motion.

1. The Lesbeque theory concerned the distribution of an irregular path rather than a set of points - use an image here: the path of a leaf floating on the wind or what have you.

2. It seemed ~~to me~~ more relevant to the actual physical world than more purely mathematical problems.

3. The search for a physical problem to which to apply this mathematical insight.

J P a. How you found the Brownian Motion. - 1 paragraph

b. What it is.

(1) The movement of molecules traced by larger substances.

(2) The introduction of Lesbeque theory into the study of the Brownian motion.

F. Reception of this work.

1. Reaction to its publication — 4 paragraphs

a. Author's reaction. ↕

b. Colleague's reaction. — 6 paragraphs

2. Keystone of Author's career.

   a. Detail consequences

      1-2-3-4-etc. > 6 paragraphs

   b. Little effect at time of publication.
      (but it forced author into studies
      he might not otherwise have undertaken.)

   c. How important it is for a young scientist to have a really new insight and how his subsequent career generates from this insight.

G. The effects on author's social life after publication.

   1. Father's reaction - 2 paragraphs

   2. Was he more secure socially?

   3. Standing at M.I.T.

      a. Where he lived at the time.

      b. Working schedule

      c. Amusements

      d. Friends

H. Author's interest in the randomness of nature as a general philosophical proposition.

   1. As it is foreshadowed in the Brownian motion

   2. As it has led to Cybernetics - 3 paragraphs.

AMERICAN SOCIETY OF PLANNING OFFICIALS

Planning Advisory Service - News Letter - Zoning Digest

1313 EAST SIXTIETH STREET • CHICAGO 37, ILLINOIS • TELEPHONE FAIRFAX 4-3400

AIR MAIL

July 7, 1954

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Dr. Wiener:

We can offer you $150 as an honorarium for a talk before the annual planning conference in Philadelphia this fall. This is, of course, in addition to paying for your actual travel and living expenses.

I do hope that this arrangement will be satisfactory and that you will be able to accept the invitation.

Sincerely yours,

Dennis O'Harrow

Executive Director

DOH:gs

[ans 7/9/54]

7/21
HC

NOEL MORSS

HAncock 6-3470

24 MILK STREET
BOSTON 9, MASS.

July 7, 1954

Professor Robert Wiener
53 Cedar Road
Belmont, Massachusetts

Dear Professor Wiener:

In case you are wondering why you have received a copy of my "Clay Figurines of the American Southwest", you will find that I have quoted you on p. 54, in a connection which I trust will not be considered taking a liberty and hope may be of some slight interest to you.

Sincerely yours,

Noel Morss

NM/h

South Tamworth
New Hampshire
July 8, 1954

Professor and Mrs. William A. Caudill
50 Fresh Pond Parkway
Cambridge, Massachusetts

Dear Caudills:

This is just to let you know that I have written to Ikehara at the Tokyo Institute of Technology to pave the way for a visit from you. Ikehara furnishes one of the examples of exceptionally good relationships between a Japanese and an American soldier. When my student Georges Dubé was drafted and went to Tokyo, he looked up the Ikeharas and in that extremely difficult period immediately after the War when nothing was coming in in the way of income and everything was in disorder, it was out of his pay that the Ikeharas were kept going. Dube had never seen Ikehara before, but had met him due to the fact that they had both been my students.

Wishing you both a pleasant trip, I remain,

Sincerely yours,

Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 8, 1954

Professor Shikao Ikehara
Tokyo Institute of Technology
Tokyo, Japan

Dear Ikehara:

I am up on my farm in New Hampshire and Margaret and I are enjoying absolutely heavenly weather. I have been busy on various forms of literary work and on some physical work on quantum theory which has been very stubborn, but now seems to be paying off. We are all well and happy. Both of my daughters are married to young men working at the Bell Telephone Laboratory at Murray Hill, New Jersey and Barbara has two fine children.

I am writing you in behalf of two of Peggy's friends who are going to be in Japan in the very near future and who would like to meet you and have contacts among Japanese intellectuals. Professor William A. Caudill of Harvard is a social anthropologist trying to study the difficult problems concerning the American troops and the Japanese population. I do not disguise from myself that that is a problem with its dark sides, but I am particularly proud of the relations which have existed and continue to exist between yourself and Georges Dubé. Mrs. Caudill is a particular chum of Peggy's. Their address at present is 50 Fresh Pond Parkway, Cambridge, Massachusetts. I hope they will look you up.

Sincerely yours,

Norbert Wiener

NW:jc

[ms 7/15/54]

South Tamworth
New Hampshire
July 8, 1954

Professor Shikao Ikehara
Tokyo Institute of Technology
Tokyo, Japan

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

South Tamworth
New Hampshire
July 8, 1954

Dr. Armand Siegel
Department of Physics
Boston University
Boston, Massachusetts

Dear Armand:

I am afraid you will feel that I have been very negligent in pushing the problems of our quantum theory. The fact is that for weeks I have been butting my head against a stone wall and that it is only just now that I have come to see the real nature of the solution of our problem. The difficulty is that I need some way to average out the linear term which occurred in the transition probabilities of the individual characteristic function. In other words, I need to replace the individual characteristic function by some sort of set of characteristic functions which might gradually drift out of phase with one another.

I now see that not only was this something that I had to do to carry my theory further, but that it was even something which I could not avoid doing from the very nature of our theory itself. You see, the one body theory of quanta is highly artificial. Let us suppose that I consider a single electron in a field. As a matter of fact, this electron is merely one among the large set of other electrons and the theory of the single electron is nothing but the theory of many electrons with vanishingly weak coupling between the individual particles.

The theory of many electrons, however, involves certain difficulties because of the Pauli exclusion principle. Let us then take the simplest case of plurality of systems in which there is no such exclusion principle but in which the characteristic functions for the entire uncoupled system are merely the products of the characteristic functions for each part of the system. Then if we hold all the rest of the system constant and consider one particle alone, we shall see that we obtain not merely one set of characteristics but each characteristic function for

the given particle is multiplied by all combinations of characteristic functions for the other particles. this means that we have a great number of characteristic functions replacing what we have previously considered as one characteristic function and that even the slightest vanishing coupling of our particles will sooner or later drive these characteristic functions out of phase with one another. The ensemble of equivalent characteristic functions need not be discrete but may well be continuous and in most cases will be continuous.

Now a single state of the universe involves the assignment to each characteristic function of a complex coefficient. Let us reconsider a little bit what our measurement process is equivalent to.

Your method of determining which characteristic function will be represented in a particular case is essentially only applicable in the discrete case and in the case when we have something like a measuring apparatus. In this measuring apparatus one characteristic function of the measure apparatus alone is multiplied into an entire set of characteristic functions by the coupling with the rest of the universe. In determining which particular characteristic function of the apparatus alone is to be selected, you do it and I have done it so far by the determining of the magnitude of the square of the coefficient so that characteristic function in Hilbert space divided by the square of the magnitude of the coefficient of the same characteristic function in connection with the solution of a particular Schrodinger equation. It now appears, however, that for one point in differential space and for one characteristic function belonging to the instrument alone we have an infinity of characteristic functions belonging to the entire universe. I think this is are out and that the magnitudes which we should compare should have as their numerators the integral over all remaining degrees of freedom of the squares of the absolute values of the coefficients of all the co-ordinates of true universal characteristic functions belonging to the one instrumental characteristic function. If we do that the beastly linear term which has so far confused our work will average out and the earlier work that we did in which we only had a quadratic term will be justified.

As I write this it is not too clear, but I shall be down Saturday, and Sunday I hope to look you up. I think from now on it is all plane sailing. The thing to remember is that the functional roulette game of the universe is never played with a point in differential space belonging to an individual particle only with a point in differential space belonging to the universe as a whole. Thus the Einsteinian causality which we re-introduce becomes a much more random matter with an individual component of our system and can only be re-introduced on a universal level. I think this is the clue to a final reconfirmation of the Einsteinian point of view with the point of view of Niels Bohn. I am writing to you because I want you to have time to think this over before we have a few precious hours of working the whole matter out together.

At any rate, we must always remember that the universe is the true reality and that the isolated system is nothing but a contraction of the complete universe. Unimportant as this may seem to be from the classical quantum point of view, it becomes all important when we introduce our differential space. Because the differential space of a single particle is simply not a part of the differential space of the universe and they have really distinct properties.

I hope everything is going well with all of you. I myself am very much encouraged to see light after weeks of confusion.

Sincerely yours,

Norbert Wiener

Norbert Wiener

NW:jc

COPY

South Tamworth
New Hampshire
July 8, 1954

Dr. Armand Siegel
Department of Physics
Boston University
Boston, Massachusetts

Dear Armand:

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

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Sincerely yours,

Norbert Wiener

NW:jc

DEPARTMENT OF MATHEMATICS

CAMBRIDGE 39, MASS.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

South Tamworth
New Hampshire
July 8, 1954

Dr. Armand Siegel
Department of Physics
Boston University
Boston, Massachusetts

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I now see that not only was this something that I had to do to carry my theory further, but that it was even something which I could not avoid doing from the very nature of our theory itself. You see, the one body theory of quanta is highly artificial. Let us suppose that I consider a single electron in a field. As a matter of fact, this electron is merely one among the large set of other electrons and the theory of the single electron is nothing but the theory of many electrons with vanishingly weak coupling between the individual particles.

The theory of many electrons, however, involves certain difficulties because of the Pauli exclusion principle. Let us then take the simplest case of plurality of systems in which there is no such exclusion principle but in which the characteristic functions for the entire uncoupled system are merely the products of the characteristic functions for each part of the system. Then if we hold all the rest of the system constant and consider one particle alone, we shall see that we obtain not merely one set of characteristics but each characteristic function for

the given particle is multiplied by all combinations of characteristic functions for the other particles, this means that we have a great number of characteristic functions replacing what we have previously considered as one characteristic function and that even the slightest vanishing coupling of our particles will sooner or later drive these characteristic functions out of phase with one another. The ensemble of equivalent characteristic functions need not be discrete but may well be continuous and in most cases will be continuous.

Now a single state of the universe involves the assignment to each characteristic function of a complex coefficient. Let us reconsider a little bit what our measurement process is equivalent to.

Your method of determining which characteristic function will be represented in a particular case is essentially only applicable in the discrete case and in the case when we have something like a measuring apparatus. In this measuring apparatus one characteristic function of the measure apparatus alone is multiplied into an entire set of characteristic functions by the coupling with the rest of the universe. In determining which particular characteristic function of the apparatus alone is to be selected, you do it and I have done it so far by the determining of the magnitude of the square of the coefficient so that characteristic function in Hilbert space divided by the square of the magnitude of the coefficient of the same characteristic function in connection with the solution of a particular Schrodinger equation. It now appears, however, that for one point in differential space and for one characteristic function belonging to the instrument alone we have an infinity of characteristic functions belonging to the entire universe. I think this is are out and that the magnitudes which we should compare should have as their numerators the integral over all remaining degrees of freedom of the squares of the absolute values of the coefficients of all the co-ordinates of true universal characteristic functions belonging to the one instrumental characteristic function. If we do that the beastly linear term which has so far confused our work will average out and the earlier work that we did in which we only had a quadratic term will be justified.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS
CAMBRIDGE 39, MASS.

As I write this it is not too clear, but I shall be down Saturday and Sunday, I hope to look you up. I think from now on it is all plane sailing. The thing to remember is that the functional roulette game of the universe is never played with a point in differential space belonging to an individual particle only with a point in differential space belonging to the universe as a whole. Thus the Einsteinian causality which we re-introduce becomes a much more random matter with an individual component of our system and can only be re-introduced on a universal leve. I think this is the clue to a final reconfirmation of the Einsteiniam point of view with the point of view of Niels Bohn. I am writing to you because I want you to have time to think this over before we have a few precious hours of working the whole matter out together.

At any rate, we must always remember that the universe is the true reality and that the isolated system is nothing but a contraction of the complete universe. Unimportant as this may seem to be from the classical quantum point of view, it becomes allsimportant when we introduce our differential space. Because the differential space of a single particle is simply not a part of the differential space of the universe and they have really distinct properties.

I hope everything is going well with all of you. I myself am very much encouraged to see light after weeks of confusion.

Sincerely yours,

Norbert Wiener

NW:jc

DEPARTMENT OF MATHEMATICS

CAMBRIDGE 39, MASS.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

Dr Wiener
Mass Inst of Tech
Boston Mass

June 9-'54

Dear Sir

The recent invention by Mr Clyde [illegible] of the I.B.M. Corp of Endicott N.Y. as stated in N.Y. Times of the [illegible] 25th which by photo electric scanning device scans a printed or written page + automatically records the printed or written matter + with the assistance of [illegible] inventions of Western Union Telegraph Co., I.B.M. Corp, Mergenthaler Type Corp. + perhaps the Swiss physicist who has made great advances in phonetically recorded speech + its automatic response I would think the assembling of an automatic apparatus as your M.I.T. machine, which would recite from a printed page for use of [illegible] + recording education also advanced studies including basic + fundamentals of all logic, law, medicine, physics, chemistry, philosophy + related subjects also including the translating from all languages. + to all of same would only be the job of men skilled in the [illegible] + its manufacture for the benefit of all mankind + its manufacture at a reasonable price + made those interested [illegible] available to all peoples throughout the world.

The possibility of education [illegible] perhaps future Hitlers w/ Lenins + Trotskys will have to be taken. If these gentlemen had the use of an apparatus as the above mentioned they may have been a possibility they would regard their [illegible] in a lesser light, saving millions of lives.

I think history shows that most of the bad fortune of the world has come from fools who [illegible] too much. This apparatus should have [illegible] the cause for additional study + the effect of [illegible] enlightenment for their own benefit + those who had reason to wish they were men of greater understanding + knowledge.

Sincerely yours
F.F.G.

C O P Y

July 9-'54

Dr. Wiener
Mass. Inst. of Tech.
Boston, Mass.

Dear Sir

The recent invention by Mr. Clyde of the I. B. M. Comp. of Endicott, N. Y. as stated in N. Y. Times of the June 25th which by photo electric scanning device scans a printed or written page and automatically records the printed or written matter & with the assistance of parent inventions of Western Union, Telephone Co., I. B. M. Corp. Type Corp, & perhaps the Swiss physicist who has made great advance in phonetically recorded speech & its automatic response I would think that assembling of an automatic apparatus as your M. I. T. machine, which would recite from a printed page for use of primary and secondary educators also advanced studies including basic & fundamental tasks of all logic, law, medicine, physics, chemistry, philosophy & related subjects also including the translating from all languages to all of same would only take the job of men skilled in the running maintaining & its manufacturing for the benefit of all those interested at a reasonable price & made available to all peoples throughout the world.

The possibility of education some perhaps future of Lenins & Trotskys will have to be taken. If these gentlemen had the use of an apparatus as the above mentioned, there may have been a possibility they would regard themselves in a lesser light, save millions of lives.

I think history shows that most of the bad portion of the world has come from fools who presumed to much. This apparatus should have the effect of giving the cause for additional study & enlightenment for their own benefit & those who had to wish they were men of greater understanding & knowledge.

Sincerely yours,

F. Fly

South Tamworth
New Hampshire
July 9, 1954

Mr. John V. L. Hogan
Hogan Laboratories, Inc.
155 Perry Street
New York 14, New York

Dear Mr. Hogan:

Thanks for your note of the second of July. I am a member of the Speckled Band of Boston and moreover I am a detective story fan. I have written a couple of stories already. One of them, The Brain has appeared in a recent anthology of science fiction, while the other came out a few months ago in Anthony Boucher's MAGAZINE OF FANTASY AND SCIENCE FICTION. It was entitled The Miracle of the Broom Closet. It had a Mexican setting. Both my stories appeared under the pseudonym W. Norbert, which is as you see, completely transparent. My notion of the purpose of pseudonyms is not to conceal my identity but to make a sharp separation between my serious and my light work. Even this separation is not absolute, for it is not my intention to write anything which does not express albeit obliquely my real opinions.

I have under way a joint job with Dr. Morris Chafetz. We were together in Mexico and the story has a Mexican setting. It is called the Day of the Dead. It will be a novelette which will fall a little bit between the two classes of the mystery-horror story on the one side and the serious novel of character on the other. I am not yet certain where or how it is to be published or whether I shall use my pseudonym.

Sincerely yours,

Norbert Wiener

NW:jc

[ans 7/29/54]

South Tamworth
New Hampshire
July 9, 1954

Mr. Dennis O'Harrow, Executive Director
American Society of Planning Officials
1313 East Sixtieth Street
Chicago 37
Illinois

My dear Mr. O'Harrow:

I hereby accept definitely the invitation to give the key-note address at the Philadelphia meeting of the American Society of Planning Officials. I am sending under separate cover a tentative copy of the manuscript. In general it is my custom to write out my lectures as I have done here for a sort of trial run, but to hold a lecture freely for two reasons. Reason No. 1 is that my eyesight, which is good for most purposes, does not permit me easily to glance at the manuscript, look the audience in the face, find my position again on the manuscript, and so on. Reason No. 2, which is far more important is that I like a talk to have spontaneity and I do not know how to give a talk spontaneity if I must divide my attention between the audience and a manuscript.

Sincerely yours,

Norbert Wiener

NW:jc

[ans 7/13/54]

South Tamworth
New Hampshire
July 9, 1954

Professor Albert Pfluger
Buchnerstr. 7
Zurich 6, Switzerland

Dear Professor Pfluger:

I am now busy writing my paper for the anniversay volume for Professor Plancherel. I have chosen as my topic a new approach to quantum mechanics and the paper will probably be a joint one with my colleague Armand Siegel of Boston University. I have made a good deal of progress in writing the paper, but I don't believe I will have it in shape to send for another ten days. It will go immediately by air mail and you can count on receiving it by the first of August.

Sincerely yours,

Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 9, 1954

Mr. Merle Severy
Editorial Staff
National Geographic
Washington 6, D. C.

Dear Merle:

It was good to see you at Dolly's the other day and to find out how well you are doing. We enjoyed so much meeting your wife.

Epstein has come and gone. He is doing a lot of editorial work on the second volume of my autobiography and I am writing a large part of it to meet his requirements. I think it will be a good book. He has also taken the manuscript on the PHILOSOPHY OF INVENTION, but that will need working over as well and shouldn't appear for a year or two, in order not to divert sales from THE HUMAN USE OF HUMAN BEINGS. I suppose you know that Epstein is married and that you have met his wife at Doubleday. She was one of the readers there, but is going over to another firm in order to avoid the difficulties which come when both husband and wife have the same employment. She is a charming girl, anRadcliffe graduate and Margaret took to her at once. She was born with her left forearm missing, but is so skillful and competent that one really doesn't notice it.

As to Mr. Matthews, let him know that I will be in Boston for the better part of a week beginning the twelfth and can be contacted through M. I. T. After that I shall be up here again in New Hampshire, but shall be glad to see him if he wants to look me up. I don't know whether my trip to India a year from now was decided when I saw you last, but it is certainly decided now. Margaret is going with me and we shall spend as much time as possible in the relative coolness of an Indian hill resort.

Sincerely yours,

Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 9, 1954

Mr. Herman Singer, Editor
Socialist Call
303 Fourth Avenue
New York 10, New York

Dear Mr. Singer:

I am in great sympathy in your resistance to McCarthy and McCarthyism. I have in fact some literary work under way in the form of a book on the somewhat different subject of invention in which I give what I believe to be an unmistakable account of my opinion of the source of some of the moral diseases of the present time, including McCarthyism, even though the book is more philosophical than personal. On the other hand, the amount of writing that I can do in a year is limited and I have so many things under way that I feel written out for the summer and need my rest.

To be perfectly frank as well, since there is only a limited amount of writing that I can do, I think that I personally can be more effective when I state my opinion absolutely in books that are wholly my own instead of subjecting it to the under evaluation on the part of the public consequent on writing for propagandist journals. I do not mean to belittle you, your journal, or your effort in saying this, nor to deny that there are those whose work will appear to a better advantage through such media. However, as I have an independent access to the attention of the public, I do not wish to sacrifice its effectiveness by appearing with too much of a personal label on myself. This is not a matter of my being unwilling to stand before the public on my principles and to assume the risk of heracy. I think my record is clear in that matter. It is simply that I am by nature a free lance and not an organization man.

Sincerely yours,

Norbert Wiener

NW:jc

1062 East 21st Avenue
Eugene, Oregon

11th July 1954

Dear Wiener:

Iwish to thank you for your positive reply to my letter concerning Black Mountain College. As far as your very understandable reservations are concerned, I am quite sure that membership in the proposed advisory board will not imply any financial obligation whatsoever. This advisory board ~~xxxx~~ is meant to restore the prestige of Black Mountain College and to establish contact with other academic communities.

I have sent your letter to the rector of BMC, Charles Olsen, and I think you will hear from him soon directly.

We are planning to go to the Congress in Amsterdam. Are we going to see you there too?

With all good wishes,

cordially yours,

Hans Rademacher

Hans Rademacher

[ans 7/29/54]

7/21
MC

ROGER W. BABSON

BABSON PARK, MASS.

THIS IS A PERSONAL LETTER.

Please address reply to
370 Washington Street
Wellesley Hills, Mass.

July 12, 1954.

Professor Norbert Wiener,
South Tamworth, N. H.

Dear Professor Wiener:

Your letter of June 23rd is acknowledged.

The name INVENTION, INC. was the name of a company in which I bought an interest some years ago; - in fact, the name was determined by the predecessors before I acquired an interest. It performs a very dignified service and is probably the leading one of the field. For years it has had three persons exclusively on its own payroll reading all patents issued and assigned. I am personally hurt by your unfair interpretation of the situation.

I have given away only two or three copies of your book, but will give away no more. I think that I have not mentioned your name in any correspondence.

I am very sorry that you have misinterpreted the entire situation, and, of course, accept your cancellation of lectures at the Babson Institute.

Very truly yours,

Roger W. Babson

RWB/IML

7/21
NC

official publication of INSTRUMENT SOCIETY OF AMERICA
TELEPHONE: CEDAR 1-4694
1319 ALLEGHENY AVENUE · PITTSBURGH 33, PA.
919 Wick Court
East Lansing, Michigan

July 12, 1954

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Professor Wiener:

This will acknowledge your letter of June 18th, in which you indicate that your present work load will not permit you time to prepare a message for the readers of the Journal of the Instrument Society of America.

I can well appreciate the factors which force your declination at this time, however, I hope that there may be an opportunity in the future, when you would prepare a manuscript for our membership. I have asked our Circulation Department to send you a copy of our September issue.

I hope you will have an opportunity to glance through it and to see first-hand what it is, we, in this Society, are attempting to do.

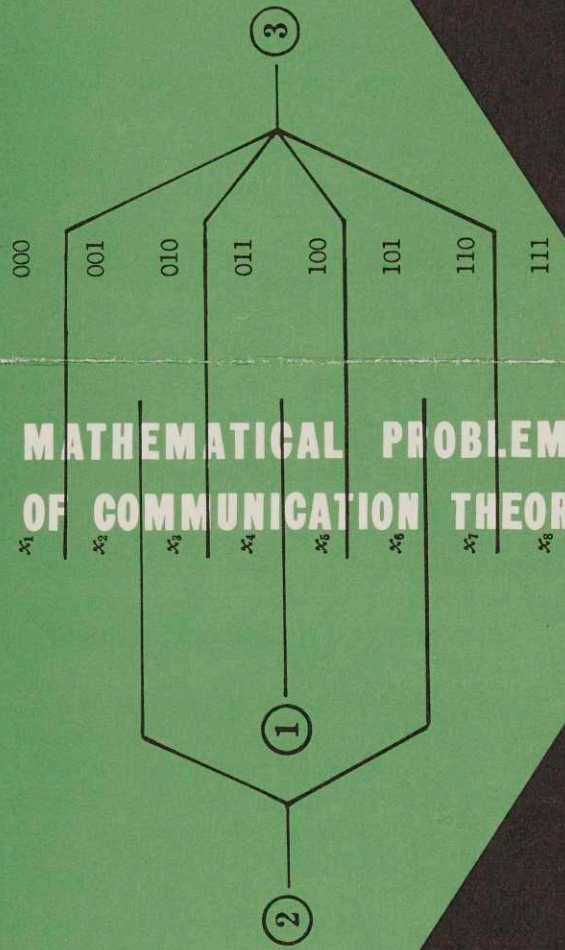
Thank you for your very kind reply to our request.

Very truly yours,

Robert J. Jeffries

Robert J. Jeffries,
Editor, ISA Journal

RJJ/h



MATHEMATICAL PROBLEMS OF COMMUNICATION THEORY

Summer Session, 1954

Massachusetts Institute of Technology

July 12 through July 16

Within the last few years the subject of Cybernetics — the measure of information, the transmission and use of information, and the theory of controls — has begun to achieve a certain status as a science of its own. To promote consideration and development of this important new field, the Massachusetts Institute of Technology will present a one-week Special Summer Program in

MATHEMATICAL PROBLEMS OF COMMUNICATION THEORY

during the 1954 Summer Session from Monday, July 12, to Friday, July 16, inclusive.

This Special Summer Program will be devoted to the mathematical tools needed for Communication Theory and to the elementary development of the theory itself. It will be of interest primarily to mathematicians, physicists, communication engineers, and control engineers, as well as to those physiologists and psychologists who wish to consider the mathematical background of their own work in the subject.

In general, admission to this Special Summer Program requires a knowledge of mathematics up to and including the elements of Fourier analysis. A thorough advanced course in laboratory work on communication theory will be construed to cover this requirement. Inasmuch as some of the ideas will appeal to sociologists, physiologists, and psychologists, a limited number of persons in these fields may be admitted who do not fully meet this

requirement but who have done a substantial amount of work in instrumentation or statistical theory. In considering applications, attention will be paid not only to formal academic records but to actual experience and to all work in subjects such as radar and radio which involve a certain familiarity with the Fourier analysis range of ideas.

OUTLINE OF PROGRAM

The main topics to be covered in the lectures are Time Series, Brownian Motion, Spectra, Filtering and Prediction Theory, Statistical Nature of Communication, Message and Entropy, and Coding.

In view of the limited time available for the course and the complexity of the subject, the course is one in foundation and cannot be expected to lead immediately to new technical developments. It is an introductory course in the best and fullest sense of the word. However, a certain amount of time will be devoted each day to both formal and informal discussions, and the class will have an opportunity to raise points of interest.

The lectures will be given daily from 9:30 to 11:00 a.m. and from 2:00 to 3:30 p.m. with discussion periods following each lecture from 11:00 to 11:30 a.m. and from 3:30 to 4:00 p.m. In addition, the Mathematics Common Room will be available throughout the Program for informal discussions.

Tuition is $100, due and payable upon Notification of Admission. Academic credit is not offered.

STAFF

This Special Summer Program will be under the supervision of the Department of Mathematics. The lectures will be given primarily by Professor Norbert Wiener of the Department of Mathematics, together with Professors R. M. Fano and Y. W. Lee of the Department of Electrical Engineering. Additional lectures will be given by Dr. Claude E. Shannon of the Bell Telephone Laboratories.

This folder is accompanied by a sheet of general information regarding admission, payments, registration, housing and recreational facilities, etc., and application blank.

Summer Session, 1954

Massachusetts Institute of Technology

July 12 through July 16

The Program announced in this folder is one of 34 Special Summer Programs which will be given during the 1954 Summer Session at the Massachusetts Institute of Technology. The complete series includes:

JUNE

1.39	SOIL TECHNOLOGY
2.264	LUBRICATION ENGINEERING
2.739	CREATIVE ENGINEERING AND PRODUCT DESIGN
2.81	INTERNAL COMBUSTION ENGINES
2.869	MACHINE TOOL TECHNOLOGY
3.431	CORROSION
8.002	SCIENCE TEACHERS PROGRAM
8.799	OPERATIONS RESEARCH
14.739	ORGANIZATIONAL COMMUNICATION
15.599	CONTROL PROBLEMS OF THE EXECUTIVE
19.99	WEATHER FORECASTING

JULY

2.122	INDUSTRIAL PHOTOELASTICITY
2.529	MODERN DEVELOPMENTS IN HEAT TRANSFER
2.929	APPLIED MECHANICS OF TEXTILE STRUCTURES
3.799	HIGH-TEMPERATURE CERAMICS
4.299	DESIGN FUNDAMENTALS IN ARCHITECTURE
5.163	INFRARED SPECTROSCOPY: TECHNIQUE
5.164	INFRARED SPECTROSCOPY: APPLICATIONS
6.639	TRANSISTORS AND THEIR APPLICATIONS
16.059	TRANSONIC AERODYNAMICS
20.82	FOOD TECHNOLOGY
M 689	MATHEMATICAL PROBLEMS OF COMMUNICATION THEORY

AUGUST

2.138	STRAIN GAGES: FUNDAMENTALS
2.139	STRAIN GAGES: APPLICATIONS
2.759	ANALOGUE COMPUTATION
3.139	CASTING OF LIGHT METALS
3.539	METALLURGICAL APPLICATIONS OF X-RAY DIFFRACTION
4.689	CITY AND REGIONAL PLANNING
5.161	INSTRUMENTAL CHEMICAL ANALYSIS: ELECTRICAL
5.162	INSTRUMENTAL CHEMICAL ANALYSIS: OPTICAL
6.531	DIGITAL COMPUTERS: BUSINESS APPLICATIONS
6.532	DIGITAL COMPUTERS: AUTOMATIC CODING TECHNIQUE
6.601	NUMERICAL CONTROL OF MACHINE TOOLS
6.638	BIOELECTRIC SIGNALS
8.239	PHYSICS OF GASEOUS ELECTRONIC DEVICES

Further information about all 1954 Summer Session activities at M.I.T. may be obtained from: Professor Ernest H. Huntress, DIRECTOR OF THE SUMMER SESSION, *Room 7-103, Massachusetts Institute of Technology, Cambridge 39.*

Design and Editorial Service by the M.I.T. Office of Publications Production by M.I.T. Printing Service, Cambridge, Massachusetts

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
FOREIGN STUDENT SUMMER PROJECT
N. S. A. COMMITTEE
CAMBRIDGE 39, MASSACHUSETTS, U. S. A.

CABLE ADDRESS: MITFSSP

TEL. TROWBRIDGE 6-3326

July 13, 1954

Dear Professor Weiner,

We have not received as yet part of the application of Robert Vallee which was sent to you. If you do not need it we would appreciate your sending it to us in the very near future.

Sincerely yours,

Edward A. Bryan

Edward A. Bryan

[ans 7/28/54]

(June, 1954?)

AFTER I OBTAINED MY "BACCALAUREAT" (MATHEMATICS), I PREPARED, IN "MATHEMATIQUES SPÉCIALES", THE COMPETITIVE EXAM OF THE "ECOLE POLYTECHNIQUE" OF PARIS. I WAS ACCEPTED IN AUGUST 1943 AND ENTERED THIS SCHOOL IN OCTOBER 1944 (INTERRUPTION OF ONE YEAR DUE TO WAR). I LEFT IT IN AUGUST 1946 WITH THE DEGREE OF "INGENIEUR DIPLOMÉ DE L'ECOLE POLYTECHNIQUE". I ENTERED IN OCTOBER 1946 THE "ECOLE NATIONALE SUPERIEURE DE L'ARMEMENT" AND LEFT IT IN AUGUST 1948 WITH THE DEGREE OF "INGENIEUR DE L'ARMEMENT". THEN, I WORKED, FROM OCTOBER 1948 TO NOVEMBER 1950 IN THE ELECTRONIC DEPARTMENT (SERVOMECHANISMS, COMMUNICATIONS) OF THE "LABORATOIRE DE RECHERCHES BALISTIQUES ET AERODYNAMIQUES" (VERNON, EURE). FROM NOVEMBER 1950 TO SEPTEMBER 1953 I WORKED IN PARIS AT THE "SERVICE TECHNIQUE DE L'ARMEMENT". I OBTAINED THE DEGREE OF "LICENCIÉ ES SCIENCES" AT THE UNIVERSITY OF PARIS (MATHEMATICS, MECHANICS, PROBABILITIES) AND DID SOME THEORETICAL RESEARCH IN THE FIELD OF COMMUNICATION THEORY (NOTES TO THE "COMPTES-RENDUS DE L'ACADEMIE DES SCIENCES", ARTICLES, LECTURES). I [redacted] SOME PROFESSIONAL ASSOCIATIONS SUCH AS: [redacted] "SOCIETE FRANÇAISE DES RADIO ELECTRICIENS", [redacted] "SOCIETE MATHEMATIQUE DE FRANCE" AND [redacted] "ASSOCIATION DES INGENIEURS ELECTRONICIENS" (VICE-PRESIDENT). SINCE OCTOBER 1953 I WORK AT THE "LABORATOIRE DE RECHERCHES DE SAINT-LOUIS" (SAINT-LOUIS, HAUT-RHIN) WHERE I AM EMPLOYED IN THE FIELD OF THEORETICAL RESEARCH.

Robert Vallée

ROBERT VALLÉE

1) FIRST RESEARCH PROJECT.

THIS FIRST PROJECT CONCERNS THE MATHEMATICAL THEORY OF CONTROL (SERVOMECHANISMS AND RELATED FIELDS) — MORE PRECISELY IT CONCERNS THE SYSTEMATIC USE OF LINEAR OPERATORS AND FUNCTIONAL SPACES IN THAT FIELD OF APPLIED MATHEMATICS. THIS WAY OF SEEING THINGS MAY PROVE TO BE USEFULL, FIRSTLY TO STATE IN A MORE GEOMETRICAL WAY THE CLASSICAL RESULTS, SECONDLY TO MAKE EASIER THE APPROACH TO NEW RESULTS.

THE THEORETICAL BACKGROUND CONCERNS THE THEORY OF LINEAR OPERATORS IN A FUNCTIONAL SPACE SUCH AS THE HILBERT SPACE. IT INVOLVES THE PROBLEMS OF DIAGONALISATION, EIGENFUNCTIONS AND EIGENVALUES OF LINEAR OPERATORS, IT INVOLVES SETS OF ORTHOGONAL FUNCTIONS AND SPECIAL FUNCTIONS. THE INTRODUCTION OF THE STATISTICAL POINT OF VIEW MAKES NECESSARY THE USE OF PROBABILITIES, ESPECIALLY THE THEORY OF TIME SERIES (STATIONARITY, CORRELATION FUNCTIONS, SPECTRA..) — GENERALISED HARMONIC ANALYSIS IS USEFULL TOO..

THIS KIND OF RESEARCH BEING THEORETICAL, MATERIAL IS NOT DIRECTLY NECESSARY BUT IT IS INDUBITABLY VERY USEFULL. IN FACT IT IS NOT POSSIBLE TO BUILD UP GOOD APPLIED MATHEMATICS IN SUCH A FIELD WITHOUT BEING IN CLOSE CONTACT WITH MATERIAL REALISATIONS AND WITHOUT TALKS WITH SPECIALISTS.

AS FAR AS REFERENCES ARE CONCERNED I MAY INDICATE THE FOLLOWING ONES:

JAMES, NICHOL, PHILIPS — THEORY OF SERVOMECHANISMS — MC GRAW HILL —
WIENER — EXTRAPOLATION, INTERPOLATION AND SMOOTHING OF STATIONARY TIME SERIES — WILEY AND SONS —
SHANNON — COMMUNICATION IN PRESENCE OF NOISE — PIRE, JANUARY 1949 —
VOLTERRA, PERÈS — THEORIE DES FONCTIONWELLES — GAUTHIER VILLARS —
VALLÉE — COMPTES RENDUS DE L'ACADEMIE DES SCIENCES — T. 232, P. 1288 —

→

2) SECOND RESEARCH PROJECT

THIS SECOND RESEARCH PROJECT CONCERNS THE GENERAL THEORY OF COMMUNICATION - MORE PRECISELY IT CONCERNS THE USE OF FUNCTIONS OF ONE OR MORE VARIABLES (TIME AND SPACE COORDINATES) THE FOURIER TRANSFORMS OF WHICH ARE ZERO OUT OF A BOUNDED DOMAIN - THESE FUNCTIONS, INTRODUCED BY CHARLES DE LA VALLÉE POUSSIN IN PROBLEMS OF INTERPOLATION HAVE BEEN USED IN THE THEORY OF COMMUNICATION, FOR EXAMPLE BY CLAUDE E. SHANNON OR WESTON - THEY ARE USED IN OPTICS TOO BY DUFFIEUX AND OTHERS - THESE FUNCTIONS ARE QUITE WELL SUITED TO THE GENERAL THEORY OF COMMUNICATIONS BOTH IN ITS ELECTRICAL ASPECT (TELEPHONY FOR EXAMPLE) AND IN ITS OPTICAL ASPECT (DIFFRACTION FOR EXAMPLE) - THE TRANSFORMATIONS OF THESE FUNCTIONS THROUGH LINEAR OPERATOR ARE INTERESTING TO STUDY, HERE THE INTRODUCTION OF FUNCTIONAL SPACES IS IMPORTANT TOO, BECAUSE IT MAKES KNOWN THINGS MORE CLEAR AND ALLOWS TO INVESTIGATE IN A MORE EASY WAY IN THE NEW -

THE THEORETICAL BACKGROUND CONCERNS FOURIER TRANSFORMS, CONVOLUTION, SETS OF ORTHOGONAL FUNCTIONS AND ABSTRACT SPACES. THE PHYSICAL BACKGROUND INVOLVES ELECTRONICS, OPTICS AND THE GENERAL THEORY OF MACROSCOPICAL OBSERVATION.
LIKE THE FIRST ONE THIS RESEARCH PROJECT IS THEORETICAL, SO IT DOES NOT NEED, DIRECTLY, MATERIALS - BUT THE ABSENCE OF ELECTRONICAL OR, MORE GENERALLY, PHYSICAL LABORATORIES WOULD MAKE IT IMPOSSIBLE TO PERFORM EFFICIENTLY.

I CAN INDICATE THE FOLLOWING REFERENCES

WESTON — NOTE ON THE THEORY OF COMMUNICATIONS — PHIL. MAG, JULY 1949.

SHANNON — MATHEMATICAL THEORY OF COMMUNICATIONS — B.S.T.J, AUGUST, OCTOBER 1948.

→

MACKAY – QUANTAL ASPECTS OF SCIENTIFIC INFORMATION – PHIL. MAG., MARCH 1950 –

BOSEMANN, BACCHI – BEGRUENDUNG EINER ALGEBRA PHYSIKALISCH BEOBACHTBARER FUNKTIONEN MITTELS FALTUNGSOPERATIONEN. ZEITSCHRIFT FÜR PHYSIK –, 135 BAND, 1 HEFT, 1953 –

DUFFIEUX – L'INTEGRALE DE FOURIER ET SES APPLICATIONS A L'OPTIQUE. BESANÇON 1946.

VALLEE – COMPTES RENDUS DE L'ACADEMIE DES SCIENCES – T. 233, P. 1350 AND T. 233, P. 1428 –

Robert Vallee

7/21
NC

1415 32nd Street, North
Birmingham, Alabama

July 13, 1954

Dr. Norbert Wiener
53 Cedar Road
Belmont
Cambridge, Mass.

Dear Sir:

I enclose a theory which may appeal to your imagination.

A few remarks about the theory appear on Enclosure 2.

No disproof of this theory seems to occur to scientists, yet they don't confirm it. Its confirmation would help solve several mysteries---photosynthesis---cancer---the WHY of electricity.

Sincerely,

Dorothy S. Helm.

Enclosures

7/21
NC

Enclosure 1

The Sun and the Unseen

About half the particles composing Earth respond to the attraction of the sun. The other half respond to an attraction outside our solar system.

Particles which respond to the sun constantly seek to approach it, and as Earth turns on its axis they are drawn toward the surface of Earth, leaving at the center of Earth a dense core of particles that feel no surge sunward and equatorward but move rather toward the poles.

At times the planets interpose their bodies as they follow their own courses, and thus they modify one or the other of the two great influences; other modifiers are the asteroids and planets' moons. Our moon intercepts in turn the sun's attraction and the much farther distant one.

All life, all matter here, comes into being through the adaptation of our Earth's particles to these continual tugs--through the struggle of each particle to join allies in sufficient strength to vanquish adversaries and approach its goal.

7/21
AC

Enclosure 2

In considering the mechanics of this thesis, one thinks of Earth as a ball composed approximately half-and-half of particles that respond to opposing magnetizations. Would it not revolve around an object from which it was once presumably torn, yet keep its orbit because of the other, farther distant but more potent magnet?

Gradually, as time has gone by, particles in Earth which respond to the sun have been drawn to Earth's surface in a general surge equatorward. Thus elements which are "light" (sun-attracted) are common in Earth's soil and air. I believe that hydrogen is being constantly drawn sunward.

My theory conceives of every particle as either fighting enemies or joining allies; the sun-attracted seek to join "light" ones going sunward, while those particles which are attracted to the opposing force seek "heaviness"---seek to join the core of Earth with the ultimate aim of approaching the poles in sufficient strength to escape from Earth in their only possible way.

It is the surge outward and equatorward that keeps our ball revolving on its axis.

When an apple falls to the ground, half a law is proven. The other half of the law is manifested by the rise of the tree's sap toward the sun and by the gradual growth of the apple.

As long as mysteries in nature remain, we should be alert for new basic principles. One major mystery is the WHY of electricity. Why do molecules arrange themselves just so and so?

According to my theory, our EARTH, after centuries of spinning and coursing around the sun, may be crudely sketched thus:

The dark core, representing the "heavier" elements, is elongated toward the poles. This may explain why a magnet takes a similar position.

Sometimes certain elements remain together undisturbed for centuries until they become an entity of isometric shape and a special constitutional pattern. This entity is found to be magnetized---a loadstone. Is it a miniature Earth?

7/21
MC

Rnclosure 2 (continued)

Applying my theory to a human being in perfect health, we would say that he represents a pitched battle of the atoms composing him. Too many sun-attracted atoms would cause illness, and too many of the other sort would also cause illness. Prescribing medicines will be a hit-or-miss business always until matter and life are understood.

Why are atomic nuclei always in motion, unless there is some such reason as I suggest?

Can this theory be disproven from the mechanical standpoint?

.....

Science Digest, May 1952, contained an article, "Our Amazing Sun", by Eugene Ayres and Charles A Scarlott. Mr. Ayres is director of the chemistry division of Gulf Research and Development Company, and Mr. Scarlott is editor of the Westinghouse Engineer. The article in question advanced the theory that the sun "scoops up hydrogen from outer space." (The quotation may not be exact in wording, as the Birmingham library is being redecorated and I couldn't get to the Science Digest files last night.)

Ever since February 1950 when the theory I've outlined first occurred to me and I wrote it down, entitled "Earth's Energy", no reading has disproved it. And I read regularly the science periodicals.

Dictionaries and encyclopedias mention the high percentage of hydrogen in nature. Oceans comprise the larger part of Earth's surface and water is H_2O. Since hydrogen is distinguished by being a single-proton element, perhaps one might estimate that hydrogen makes up about half of Earth.

AMERICAN SOCIETY OF PLANNING OFFICIALS

Planning Advisory Service - News Letter - Zoning Digest

1313 EAST SIXTIETH STREET • CHICAGO 37, ILLINOIS • TELEPHONE FAIRFAX 4-3400

July 13, 1954

Dr. Norbert Wiener
South Tamworth, New Hampshire

Dear Dr. Wiener:

I have read your proposed talk "Short Time and Long Time Planning" and I think that it is excellent. I agree with you on the method of delivery and I believe that spontaneity is very important.

The copy of the speech that I have received carries your little note beginning "A copy of the manuscript has been misplaced . . ." This is the only copy that we have received as yet, but if a second copy does turn up I will return one to you.

I am still not quite clear about the publication of the talk. You spoke about using some of the ideas that will appear in your forthcoming Doubleday book and I was not sure about this point.

I am very happy that you are going to be able to make the talk and I look forward to meeting you.

Sincerely,

Executive Director

DOH:ds

[ans 7/21/54]

NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

July 14, 1954

Dr. N. Wiener
Massachusetts Institute
of Technology
Cambridge, Massachusetts

Dear Doctor Wiener:

We are enclosing proposal P-1305, entitled "An Investigation of the Application of a New Approach to the Theory of Many Interacting Particles," submitted by Dr. George J. Yevick, Stevens Institute of Technology, for your evaluation.

Also enclosed are a guide sheet, a rating sheet, and a return franked envelope.

Thank you for your cooperation.

Sincerely,

J. Howard McMillen
Program Director
for Physics (Acting)

Enclosures (4)

[ans 7/22/54]

HOGAN LABORATORIES, INC.
155 PERRY STREET
NEW YORK
14

JOHN V. L. HOGAN
PRESIDENT

TELEPHONE
CHELSEA 2-7855

14 July 1954

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Dr. Wiener:

Thanks for yours of the ninth. I would like to read your two stories, so will you please send me the title and publisher of the anthology in which "The Brain" was included, and the date of Boucher's magazine that contains the "Broom Closet"? I thought I might have the anthology, but on checking at home last night I could find only "My Best Science Fiction Story" edited by Margulies and Friend and published by Merlin Press in 1949. This contains twenty-five stories by as many authors, but not yours. Each is introduced by a note from its writer, and I was amused to find that the very first tale (by Isaac Asimov) starts off with "Why I Selected 'Robert AL 76 Goes Astray': I am very pleased with the current furore over what Professor Norbert Wiener of M.I.T. calls 'cybernetics'. It is the science of 'thinking' machines and is, undoubtedly, the theoretical basis for the eventual positronic robot. I have written nine robot stories, and I wrote all nine before I heard of the science, so anything about my robotic conceptions that doesn't fit the rigorous math of Professor Wiener must be forgiven me. (Another reason for forgiveness -- but one I am not anxious to publicize -- is that I don't understand the mathematics even after having looked at his book.)"

TEN 1952

I copied out the foregoing on the chance that you had not seen it and that it might interest you. I read the Asimov story, but cannot

praise it, although it is imaginative enough.

We seem to have a third point of tangency, viz., writing. Did you see my little "An Unsolved Problem" at page 173 of B.S.J. for July, 1953? Edgar Smith seemed to think it was amusing. But in all these years I have been most gratified by having had a verse published in "The Electrician".

I like your ideas about the proper use of pen-names. I have used equally transparent ones, e. g., "John Vincent", which are quite different from "S. S. Van Dine" for Willard Huntington Wright.

Do you get down to the January dinners of the Irregulars? Maybe you could do so next year? If you think you could, I will be glad to see that an invitation goes out, well in advance. Or perhaps you get to this mad city on other occasions. If you have a bit of free time here, you might like to have luncheon with me and to see some of the things that we are doing at our shop.

Sincerely yours,

John V. L. Hogan

John V. L. Hogan

[ans 8/26/54]

July 15,1954

Dear Professor Wiener:

The heavenly weather of New Hampshire has carried a good news to me that you and Mrs. Wiener are enjoying South Tamworth with its fresh air and sunshine. In spite of your efforts and the tremendous progress of the communications art I am still too far away from the sphere of your activities. And yet I am glad to know that your quantum theory is crystallizing to brighten its substance. Belatedly I must thank you for the reprint of your paper on the new formulation of quantum mechanics.

The coming visit of Professor and Mrs. William A. Caudill of Harvard will give me a chance to learn more of your family with its two branches at Murray Hill. Barbara and Peggy came here too early in their life to acquire lasting impressions, but Peggy's friends will discover a great deal of meterials for research. The problem which Professor Caudill will tackle is an absorbingly interesting one, for the Japanese were not prepared to face the new problems in its long history of apparently unified race. I shall be more than pleased to be of any help to your young friends from Cambridge. I shall send him a note of welcome.

Coming to the Japanese version of your book, The human use of human beings the last printing was on March 30,1954, totaling to 6,500 copies in all. I am hoping that the publisher will pay me in due time (which is a rather rare instance here.) I must apologize again belatedly for the reduced size of your book , which is partly due to the cost and partly the customs.

A vague idea of a "statistical theory" of epistemology is tickling my imagination in which the basic unit shall be "wiener".

My family is all well and boisterous even though destined to stay in Tokyo throughout the summer. May New Hampshire beam upon you both as ever.

With best wishes to you both from us,

Sincerely yours,

Shikao

Shikao Ikehara

[ans 7/21/54]

こゝにも通信文を記載することができます　This space is also for correspondence.

Shikao Ikehara
22-1 Shimizucho, Meguroku
Tokyo, Japan

日本郵便
45
AEROGRAMME

Professor Norbert Wiener
South Tamworth
New Hampshire

U. S. A.

PAR AVION
航空

この郵便物には何物も封入又は添附できません

Nothing may be contained in or attached to this letter.

折込線

折込線

こゝにも通信文を記載することができます　This space is also for correspondence.

UNIVERSITY OF MARYLAND
COLLEGE OF EDUCATION
COLLEGE PARK

INSTITUTE FOR CHILD STUDY

July 15, 1954

Dear Dr. Wiener:

Please send me a reprint or copy of your article, "Problems of Organization," which appeared in Bull. Menninger Clinic., 1953, 17, 130-138

It is an important source of information in your field and will be used by our staff and graduate students in human development. Thank you.

Sincerely yours,

Hugh V. Perkins

Hugh V. Perkins
Associate Professor of Education

sent 8-3-
RG

pb THE POCKET BOOK MAGAZINE

a periodical of ideas, inspiration, information and issues · 699 madison avenue, new york 21, n. y. · TEmpleton 8-8806

FRANKLIN WATTS · *Editor*

July 16, 1954

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Professor Wiener:

Many thanks for your letter of June 21 and for sending me your article on EIGHT YEARS OF CYBERNETICS AND THE ELECTRONIC BRAIN. I have read it with great interest, and I shall be happy to publish it in PB. I am putting through a letter of agreement, and as soon as your signed copy is received, a check will go forward to you.

It seems to me that it would enhance the appeal of your article to the readers of the magazine if you would add a little more material to clarify and expand several points. For this reason the article is returned herewith.

You will see check marks at various places in the text, and marginal queries to be answered. In addition to explaining certain terms that might not be easily understood by the layman, I wonder if you would be willing to add a few passages to expand the scope of the article.

On page 3, you might add a sentence stating that there is to be a monthly periodical on the subject of the automatization of factories. On page 4, please write a paragraph or two on the present and potential use of "the electronic brain" in business offices. (I should like to say parenthetically that I was expecially interested in what you had to say about the social implications of the automatic factory in your book CYBERNETICS.) Lastly, I should like you to revise your ending to be a little less abrupt.

Please don't bother to have the manuscript retyped to include this additional material. If you will send it back to me with the manuscript, typed on separate sheets of paper, I will take care of having it inserted in place.

I look forward to hearing from you.

Sincerely yours,

Franklin Watts

Franklin Watts
Editor

FW:c
Enc.

[ans 7/23/54]

21 E. Bergen Place
Red Bank, N. J.
July 18, 1954

Dear Prof. Wiener -

I have been reinstated with full back pay. There is still a good solid few months of work left to do on my thesis, & a big hurdle in the form of Ph. D. final exams. I consider these the first order of business now, & intend to take extended leave if it is impracticable to finish up the work on government time. The possibility of continuing a government career has, of course, undergone an "agonizing reappraisal", but it seems unwise to move before getting the Ph. D.

There will be a symposium on information theory at M-I-T. this fall, at which I will present a paper on "Information, Organization, & Systems. I hope to see you then.

I think the worm in Wisconsin's apple has his weak spot in that he is far less likely to be believed now, after the hearings. One should hammer at the points that he is a liar, a bully, a saboteur, & of aid & comfort to Moscow. Waltman's series in the World Telegram, while saying little that is new, reaches the rightish audience that needs to know those facts. My reinstatement doesn't end my activity, by any means. After the Ph.D. I hope to move on & get in a few licks somehow myself. Now that he is romping through your bailiwick, maybe you will be inspired to make some appropriate utterances. If Flanders would pass thru Boston, & blast him out of some headlines in the process, & hold him up to ridicule, this would help. Maybe ridicule would be the best weapon - provided it's not too subtle.

Sincerely yours,

Jerome Rothstein

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

19 July 1954

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

Dear Dr. Wiener:

As you can see from the attached letter from Mr. Bavelas, my efforts to obtain advice have reached an impasse.

I can well understand the reluctance of anyone to undertake a task which would be time consuming and with considerable question as to the possibility of producing definitive results. I can particularly appreciate your feeling if you have been writing another book. Although I am sorry this precludes the chance of our discussing the problems I outlined, I am looking forward to reading it when it is published.

Perhaps future developments and events will create an opportunity for us to get together.

1 Incl

Sincerely yours,

WELDON T. ELLIS, JR

COPY

July 1, 1954

Mr. Weldon T. Ellis, Jr.
Deputy Director
Manpower and Organization
Department of the Air Force
Headquarters United States Air Force
Washington 25, D. C.

Dear Mr. Ellis:

Your letter to Dr. Wiener got to me by way of Professor Rosenblith. In sending the letter to me Professor Rosenblith remarked that he didn't "feel that the problem fell within his area of competence."

I am embarrassed on two counts. First because his estimate of my area of competence in forwarding this letter to me was incorrect, although flattering; second because I find that I am not able to help you in the slightest.

It is very clear to me that the person who can, is Norbert Wiener, and I would suggest another attempt to interest him in the problem.

Very sincerely yours,

Alex Bavelas

AB:t

HOUGHTON MIFFLIN COMPANY
2 PARK STREET BOSTON 7

July 19, 1954

Dear Dr. Weinter:

It occured to us that we might very well get some fresh comment about THE HUMAN USE OF HUMAN BEINGS in the press, as well as some fresh sales in the stores, if you could make some statement about th new edition.

An interview might be possible if you had something to say about why the new edition came into being. Practically, a real interview does not seem feasible right now with your being in the country, but if you like the idea and could interview yourself, we might be able to make very good use of it.

Sincerely yours,

John Leggett cs

John Leggett
Publicity Director

Dr. Norbert Weiner
South Tamworth
New Hampshire

JL:cdr

[ans 7/21/54]

PLEASE ADDRESS REPLY TO
"COMMANDING OFFICER
AND DIRECTOR"
AND REFER TO FILE NUMBER

U. S. NAVY ELECTRONICS LABORATORY
SAN DIEGO 52, CALIFORNIA

(Private)

July 20, 1954

Professor Norbert Wiener
Department of Mathematics
Massachusets Institute of Technology
Cambridge, Mass.

Dear Professor Wiener:

In our personal talk in 1952, you encouraged me to apply information analysis to Psychoacoustics. You saw some of my publications relating to the econometric interpretation of entropy and were helpful as a reference at the time of my transfer to NEL here.

May I enclose the short abstract of a digital computer model of hearing. I feel more and more convinced that your generalized harmonic analysis constitutes the underlying calculus. Besides the threshold errors to which you alluded in our talk, a relativistic error source also exists and is manifest in the relativistic way of hearing. (May I mention that I do have absolute pitch.) It would be of extremely great value for me to know whether you approve my attempt of introducing the Relativity of Time. Harmonic analysis could be perhaps further generalized and I would appreciate your suggestions.

Thanking you for your continued interest, I am

Sincerely yours,

Andrew G. Pikler

(Andrew G. Pikler)
Code 2920/f