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CORRESPONDENCE Aug. 1952

N. WIENER · MC 22



THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, which was organized in 1848, is the oldest general national scientific society on this continent. For more than a century it has

kept faith with its founders and has fulfilled with steadily increasing success the high purposes for which it was established:

To further the work of scientists.

To facilitate cooperation among scientists.

To improve the effectiveness of science in the promotion of human welfare.

To increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

To carry out these objectives the Association, in cooperation with its affiliated and associated societies, organizes and conducts meetings and conferences for those interested in the various branches of science and education; edits and publishes two journals, *SCIENCE* and *THE SCIENTIFIC MONTHLY*; publishes and distributes technical symposium volumes; administers awards for scientific achievements and excellence in press and magazine reporting; and cooperates with other organizations for the advancement of science.

FOUNDED 1848

INCORPORATED 1874

Society for the Study of Education; National Society of College Teachers of Education.

Associated Societies: Canadian Teachers' Federation; Kappa Delta Pi; Phi Delta Kappa; Pi Lambda Theta.

General Science Societies (X)

Affiliated Societies: American Association of Scientific Workers; American Association of University Professors; American Geophysical Union; American Library Association; American Nature Study Society; Honor Society of Phi Kappa Phi; National Association of Science Writers; Sigma Delta Epsilon. Graduate Women's Scientific Fraternity; Society of the Sigma Xi; Special Libraries Association; United Chapters of Phi Beta Kappa.

Associated Societies: American College Personnel Association; American Society for Aesthetics; Bibliographical Society of America; Chi Beta Phi Scientific Fraternity; Gamma Alpha Graduate Scientific Fraternity; Wilderness Society; Wildlife Society.

Affiliated Academies of Science

There are thirty-eight State Academies of Science affiliated with the AAAS. These organizations are self-sustaining through the payment of membership dues. The Association contributes funds for special projects through Academy Grants which are apportioned according to the representation of each academy in the membership of the Association. In many cases other support, particularly for publications, is provided by state legislatures. Each year the Association sponsors an Academy Conference for the discussion of methods to improve the acquisition and dissemination of scientific knowledge through the cooperative efforts of the State Academies.

Tropical Medicine and Hygiene; American Veterinary Medical Association; Association of Military Surgeons of the United States; Federation of American Societies for Experimental Biology; Gerontological Society, Inc.; International Association for Dental Research, American Division; Society for Experimental Biology and Medicine; Society for Investigative Dermatology; Society of American Bacteriologists.

Associated Societies: American Academy of Optometry; American Association of Colleges of Pharmacy; American Association of Dental Schools; American Dental Association; American Society of Hospital Pharmacists; American Society of Medical Technologists; Mississippi Valley Medical Society.

Agriculture (O)

Affiliated Societies: American Society for Horticultural Science; American Society of Agronomy; American Society of Animal Production; Society of American Foresters.

Associated Societies: American Dairy Science Association; American Pomological Society; Association of Official Seed Analysts; Gamma Sigma Delta, the Honor Society of Agriculture; Potato Association of America; Soil Conservation Society of America; Xi Sigma Pi.

Industrial Science (P)

Affiliated Societies: American Industrial Hygiene Association; American Society of Safety Engineers; Society for Industrial Microbiology.

Education (Q)

Affiliated Societies: American Educational Research Association; National Education Association; National Science Teachers Association; National

MEMBERSHIP IN THE ASSOCIATION

Membership in the Association is open not only to professional scientists, but also to other persons who find in science pleasure, adventure, and opportunities for service to humanity. Professional scientists have joined the Association because of the broad scope of its scientific interests, because of its journals and other publications, and perhaps even more because of the opportunities it offers for coordinating and integrating the natural sciences with social progress. Other persons have joined the Association in order to maintain contact with the research that may modify human life or thought. Science has become such an important factor in industrial and social progress, and even in international relations, that large numbers of industrial scientists mingle with their academic friends as members of the Association, and many hundreds of high-ranking officials in the scientific and military departments of the Government are included in its membership. Members who have made a noteworthy contribution to science may be elected Fellows of the Association as prescribed in the Bylaws. At the time of the Philadelphia Meeting, December, 1951, there were 48,500 members.

Applications for membership should be sent to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

ANNUAL DUES

\$6.50

ORGANIZATION OF THE ASSOCIATION

The Association and its 232 affiliated and associated societies are by far the largest and most influential group of related scientific organizations in the world. Technical societies bring together scientists with similar interests but they also tend to isolate their members from scientists whose interests are in other fields. The organization of the Association is such that it tends to retain the advantages of the specialized meetings while it eliminates the isolation. At an annual meeting of the AAAS the 16 sections and some 30 to 50 participating societies and other organizations may convene and arrange joint sessions and symposia.

At present the Association includes three Divisions and sixteen Sections. It is governed by the Executive Committee under the authority and general direction of the Council, a large body of prominent scientists, about 260 in number, representing all of the natural sciences and the principal social fields. About one third of its members are elected by the Association and its sections; the remaining two thirds are elected by its affiliated societies. Thus, in a real sense, the AAAS Council may speak authoritatively for American science.

Engineering (M)

Affiliated Societies: American Ceramic Society; American Institute of Electrical Engineers; American Institute of Mining and Metallurgical Engineers; American Society for Engineering Education; American Society for Quality Control; American Society for Testing Materials; American Society of Civil Engineers; American Society of Mechanical Engineers; Illuminating Engineering Society; Institute of Radio Engineers; Institute of the Aeronautical Sciences, Inc.; Western Society of Engineers.

Associated Societies: American Institute of Chemical Engineers; American Society of Agricultural Engineers; American Society of Heating and Ventilating Engineers; American Society of Photogrammetry; American Society of Refrigerating Engineers.

Medical Sciences (N)

Affiliated Societies: Alpha Epsilon Delta Pre-medical Honor Society; American Academy of Forensic Sciences; American Academy of Ophthalmology and Otolaryngology; American Academy of Tropical Medicine; American Association of Anatomists; American College of Apothecaries; American College of Dentists; American Dietetic Association; American Medical Association; American Medical Writers' Association; American Pharmaceutical Association; American Physiological Society; American Psychiatric Association; American Psychoanalytic Association; American Public Health Association; American Rheumatism Association; American Roentgen Ray Society; American Society for Experimental Pathology; American Society for Pharmacology and Experimental Therapeutics; American Society of Biological Chemists; American Society of

American Phytopathological Society; American Society of Plant Physiologists; American Society of Plant Taxonomists, Botanical Society of America, Inc.; Mycological Society of America; Phycological Society of America; Torrey Botanical Club.

Associated Society: American Fern Society.

Anthropology (H)

Affiliated Societies: American Anthropological Association; Linguistic Society of America; Society for Applied Anthropology.

Associated Societies: American Folk-Lore Society; Archaeological Institute of America.

Psychology (I)

Affiliated Societies: American Psychological Association; Eastern Psychological Association; Midwestern Psychological Association; Psychometric Society; Society for Research in Child Development.

Associated Society: Southern Society for Philosophy and Psychology.

Social and Economic Sciences (K)

Affiliated Societies: American Political Science Association; American Sociological Society; American Statistical Association; Econometric Society; National Academy of Economics and Political Science; Pi Gamma Mu.

Associated Societies: American Economic Association; American Home Economics Association; American Planning and Civic Association; Metric Association; Population Association of America; Society for the Advancement of Criminology.

History and Philosophy of Science (L)

Affiliated Societies: American Philosophical Association; History of Science Society; Philosophy of Science Association.

OFFICERS FOR 1952

General Officers

Detlev W. Bronk..... President
E. U. Condon..... President-Elect
Kirtley F. Mather..... Retiring President

Vice Presidents of the sixteen Sections

Executive Committee

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E. U. Condon..... Howard A. Meyerhoff
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Warren Weaver

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Raymond L. Taylor..... Asst. Admin. Secretary
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Alaska Division

Laurence Irving..... President
Mrs. Robert P. Simmet..... Secretary

ADMINISTRATIVE OFFICERS APPOINTED FOR 4 YEARS

PUBLICATIONS OF THE ASSOCIATION

With his membership (dues are \$6.50), every member of the Association receives either SCIENCE or THE SCIENTIFIC MONTHLY—at his option. If both journals are desired, the member receives the second by paying an additional \$3.50 (a total of \$10.00). Other publications of the Association, such as the symposium volumes, the Proceedings and Directory of Members, and the Centennial Volume are also available to members at special rates.

Current Proceedings and Directory

The current Proceedings and Directory of the Association (1940-1948) contains the names, addresses, business connections, academic degrees, and fields of specialization of more than 40,000 scientists. A feature is the geographical index of members which also lists their sectional interests. A Supplement listing 13,000 new members who joined in 1948, appeared January, 1951. Both clothbound; 6x9 inches; 1,219 pages, and 392 pages, respectively; in cartons; postage prepaid—\$8.50 to members; \$10.50 to non-members.

The General Program

The General Program of the AAAS Annual Meeting—300-350 pages—is much more than an outline of the sessions, papers, and their authors. Its directory content is high: All Council representatives of the affiliated societies, all section committees, sketches of the participating organizations, etc., are included. The General Program, indispensable for those who attend the meeting, is helpful to those who cannot go.

THE GENERAL PROGRAM IS ALSO A DIRECTORY

Association of American Geographers; Geological Society of America; Mineralogical Society of America; Paleontological Society; Seismological Society of America; Society of Economic Geologists.

Associated Societies: American Alpine Club; National Council of Geography Teachers; National Speleological Society.

Zoological Sciences (F)

Affiliated Societies: American Association of Economic Entomologists; American Society of Mammalogists; American Society of Parasitologists; American Society of Zoologists; Entomological Society of America; Society of Protozoologists; Society of Systematic Zoology; Wilson Ornithological Club.

Associated Societies: American Malacological Union; Herpetologists League.

Zoological and Botanical Sciences (FG)

Affiliated Societies: American Genetic Association; American Microscopical Society; American Society of Human Genetics; American Society of Limnology and Oceanography; American Society of Naturalists; Association of Southeastern Biologists; Beta Beta Beta; Biometric Society, Eastern North American Region; Ecological Society of America; Genetics Society of America; National Association of Biology Teachers; Society for the Study of Evolution; The Nature Conservancy; Western Society of Naturalists.

Associated Societies: American Institute of Biological Sciences; Phi Sigma Society.

Botanical Sciences (G)

Affiliated Societies: American Bryological Society;

SCIENCE

No professional scientist can afford to be without SCIENCE, the scientific newsweekly established by Thomas A. Edison in 1880. An official journal of the American Association for the Advancement of Science since 1900, it is the foremost medium in the United States today for the prompt publication of reports of original research in all scientific fields, and is the most widely circulated journal of its kind in the world.

In addition to the technical papers announcing and describing important discoveries and developments, SCIENCE publishes news about science and scientists in every field and in every country, gives a comprehensive listing of national and international meetings (reporting many of them), reviews new technical books, provides a forum for the views of scientists, and discusses AAAS activities.

SCIENCE is published in two 800-page volumes per year, each completely indexed, and is now in its 115th volume.

A WEEKLY JOURNAL OF SCIENTIFIC PROGRESS

THE SCIENTIFIC MONTHLY

One of the two official journals of the American Association for the Advancement of Science, and one of the oldest of its kind, THE SCIENTIFIC MONTHLY is the only illustrated semitechnical magazine in the United States written entirely by professional scientists for scientists. Of special significance, also, to everyone interested in the history, progress, and philosophy of science, it brings an understanding of the advancing frontiers of science within the purview of every man.

Specialists will find their specialties intelligently discussed, and in addition will learn something about the broad fields surrounding their own. The Book Review section offers a preview of the newest semitechnical books besides reviews of books of a more general character; Letters to the Editor give the reader an opportunity to talk back; and Science and Technology presents a potpourri of late developments in research and in useful gadgets.

Beautifully illustrated and expertly edited, THE SCIENTIFIC MONTHLY follows in the tradition inherited from its distinguished progenitor, *The Popular Science Monthly* (est. 1872).

THE LITERARY MAGAZINE OF SCIENCE

AFFILIATED AND ASSOCIATED SOCIETIES

Mathematics (A)

Affiliated Societies: American Mathematical Society; Association for Symbolic Logic; Institute of Mathematical Statistics; Mathematical Association of America.

Physics (B)

Affiliated Societies: Acoustical Society of America; American Association of Physics Teachers; American Meteorological Society, American Physical Society; Optical Society of America; Society of Rheology.

Associated Societies: Electron Microscope Society of America; Oak Ridge Institute of Nuclear Studies; Sigma Pi Sigma.

Chemistry (C)

Affiliated Societies: American Association of Cereal Chemists; American Chemical Society; American Oil Chemists' Society; Associacao Quimica do Brasil; Association of Vitamin Chemists; Electrochemical Society, Inc.; Friends of the Kresge-Hooker Scientific Library; Institute of Food Technologists.

Associated Societies: Alpha Chi Sigma Fraternity; Pacific Southwest Association of Chemistry Teachers; Phi Lambda Upsilon.

Astronomy (D)

Affiliated Societies: American Astronomical Society; Astronomical Society of the Pacific; Meteorological Society.

Geology and Geography (E)

Affiliated Societies: American Association of Petroleum Geologists; American Geographical Society of New York; Arctic Institute of North America;

Symposium Volumes

Beginning with the volume "Protection by Patents of Scientific Discoveries" in 1934, the Association has published 30 technical symposium volumes which range broadly through the various fields of science, from surface chemistry to cancer and mental health. These volumes consist of, or are based on, symposia presented at meetings of the Association or on conferences sponsored by the Association. Most are 7½ by 10½ inches, double column; all are illustrated and clothbound. Those still available for sale are given below with the special membership prices. Nonmembers may secure copies at moderately higher rates.

Liebig and After Liebig (119 pp.)	— \$2.50
Relapsing Fever (136 pp.)	----- 2.50
Mammary Tumors in Mice (231 pp.)	3.00
Dental Caries and Fluorine (111 pp.)	3.00
Tumor Chemotherapy (452 pp.)	----- 6.50
Rickettsial Diseases of Man (255 pp.)	5.25
Pituitary-Adrenal Function (220 pp.)	3.50

Centennial Volume

A 320-page volume commemorative of the Centennial Year of the Association, evaluating a century in the unfolding of science, beautifully bound, and including 42 selected papers of the Centenary Meetings of September, 1948, was published in 1950; it is \$4.50 to members.

CENTENNIAL: 42 PAPERS IN 13 SCIENTIFIC FIELDS

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Application for membership in the American Association for the Advancement of Science is made by filling in the blanks on the reverse side of this card.

Check or money-order for the annual dues of \$6.50, to accompany this card, should be made payable to the AAAS, and mailed to the American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D. C. *Please do not send currency.*

Payment of annual dues entitles each member to receive the weekly publication *Science* or *The Scientific Monthly*. Indicate your choice. If *both* journals are desired, please add an additional payment of \$3.50 (a total of \$10.00).

Within three weeks after receipt of this card, with the blanks filled in and accompanied by the necessary remittance, a notification of election to membership will be sent.

Please use key letter to indicate your section interest. The sections of the Association are:

Mathematics (A)

Physics (B)

Chemistry (C)

Astronomy (D)

Geology and Geography (E)

Zoological Sciences (F)

Botanical Sciences (G)

Anthropology (H)

Psychology (I)

Social and Economic Sciences (K)

History and Philosophy of Science (L)

Engineering (M)

Medical Sciences:

Subsection on Medicine (Nm)

Subsection on Dentistry (Nd)

Subsection on Pharmacy (Np)

Agriculture (O)

Industrial Science (P)

Education (Q)

Not more than two sections should be listed; the major field first.

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APPLICATION FOR MEMBERSHIP, AAAS

(Please print or typewrite)

Date _____

Full name (Dr., Mrs., etc.) _____

(Place in parentheses parts of name omitted in correspondence)

Address for journal _____

_____ Section Interest _____ Birth year _____

Official position _____

Professional address _____

Principal field (*Ecology, genetics, etc.*) _____

Highest degree, year, institution _____

Choice of journal (*please check*) Science (\$6.50) Scientific Monthly (\$6.50) Both (\$10.00)

Mail this Card and Dues to AAAS, 1515 Massachusetts Ave., N.W., Washington 5, D. C.

(over)

*American Association
for the Advancement of Science*

[ca. Aug, 1952]

1515 MASSACHUSETTS AVENUE, N.W. WASHINGTON 5, D. C.

ADMINISTRATIVE OFFICES
EXecutive 6060

Dear Fellow Scientist:

Your name is appearing in the News and Notes section of SCIENCE, issue of AUG 8 '52, which has a circulation of 33,000 and will, of course, be seen by many others. We should like to convey our compliments upon the occasion for this item.

It occurs to us that you may wish to receive SCIENCE regularly. Instead of suggesting a subscription (\$7.50 per year), on behalf of the officers of the Association, I take pleasure in extending to you a cordial invitation to join the Association at this time. Membership dues of \$6.50 include a subscription to either SCIENCE or THE SCIENTIFIC MONTHLY (or both for \$10.00) and reduced rates for other AAAS publications.

Membership in the Association provides opportunities for enlarging one's professional interests---and, further, there is a personal satisfaction in lending support to the AAAS, the one organization, national in scope, that represents all science. Since 1848, the AAAS---now with 232 affiliated organizations and nearly 50,000 members---has worked to advance science and to promote human welfare. In these troubled times, the support of every scientist and science-minded person is needed more than ever.

I hope that you will find the enclosed leaflet of interest and will fill out and return the card of application, together with your remittance.

Cordially,

R. L. Taylor.

Raymond L. Taylor
Assistant Administrative Secretary

CHARLES SCRIBNER'S SONS



PUBLISHERS

597 FIFTH AVENUE NEW YORK 17, N. Y.

August 1, 1952

Dr. Norbert Wiener
South Tamworth
New Hampshire

Dear Dr. Wiener:

Thank you for going to the trouble of sending us your thoughts regarding *PLAYER PIANO* by Kurt Vonnegut, Jr. We have never considered the book in the class of science fiction, as it is more concerned with human relationships and human reactions, than with adventure or with pure fantasy. However, since its setting is the future, *PLAYER PIANO* will undoubtedly be placed in that category by many reviewers.

You say in your letter that you have not come to any definite conclusion about the book as yet, as you were reading it bit by bit. When you have had the opportunity to finish it, we would be very much interested in hearing your final opinion of *PLAYER PIANO*.

Very sincerely,

A handwritten signature in blue ink that reads "Hope English". The signature is written in a cursive, flowing style.

Hope English
Publicity Director

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THE UNIVERSITY OF CHICAGO
CHICAGO 37 • ILLINOIS
DEPARTMENT OF MATHEMATICS

August 1, 1952

Professor J.L. Doob
Department of Mathematics
University of Illinois
Urbana, Illinois

Professor J. von Neumann
School of Mathematics
Institute for Advanced Study
Princeton, New Jersey

Professor W. Feller
Department of Mathematics
Princeton University
Princeton, New Jersey

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

Dear Colleagues:

The International Union for Pure and Applied Physics has asked the International Mathematical Union to co-operate in the organization of a symposium on "Transport Phenomena Including Their Mathematical Treatment" to be held in 1954 under the auspices of the Committee on Thermodynamics and Statistical Mechanics of the I.U.P.A.P. I have been asked by the I.M.U. to collect information as to the ways in which mathematicians could participate effectively in such a symposium, and therefore turn to you gentlemen for advice. I believe that it would be very helpful to start by drawing up a list of individual mathematicians whose active interests would make them useful participants in the symposium. I would particularly welcome your suggestions along these lines. I would also be glad to receive suggestions as to others whom you think I should consult about this matter.

Sincerely yours,

Marshall

Marshall H. Stone
Acting Chairman

MHS:jlb

[ans 8/18/52]

August 1, 1952

Mr. Henry Simon
c/o Simon and Schuster, Inc.
Rockefeller Center
New York City, New York

Dear Mr. Simon:

Here are two other photographs, one of both my parents and one of my father. They belong to a later period than the period of my story.

I am afraid that it would share with earlier photographs I sent you in the difficulty of reproduction.

I am also enclosing a photograph of the office of the Encyclopedia Americana, going back to the date of my employment there, which, I am sure, will be of no use to you!

Sincerely yours,

Norbert Wiener

NW/ss
Enc.

[ans 8/4/52]

The Institute of Low Temperature Science
Hokkaido University, Sapporo, Japan.
August 2, 1952.

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

Dear Prof. N. Wiener:

Thank you very much for your kind letter of July 19. It encouraged me very much in continuing Prof. Imahori's line of work. I am sorry to say that the paper which follows my semi-group paper and concerning which I have noted in the "added in Proof" of the latter, is not still printed owing to the unexpected circumstances. I am now going to send you its typed copy and another paper in which I have discussed about the concept of the amount of information in some detail. I regret that the latter is written in Japanese, but I think you might understand the essential content by the abstract and figures and formulae.

The result of the former paper is, I believe, physically correct, although the mathematical rigorousness is lacking in the reasoning, owing to my much restricted mathematical ability. I should be very happy if the defect could be filled up by any mathematician.

Now I am engaged in the generalization of Imahori's prediction theory to the non-stationary case and to the multiple time series as well, the results of which will be published in the not distant future.

I also feel keen interest in your present work about the applications of the semi-group theory to the quantum theory. It would be a great pleasure for me if you would kindly send me the result of your investigation as soon as it is printed.

Yours sincerely

J. Iwari

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

29 WEST 39TH STREET, NEW YORK 18, N. Y.



MANAGEMENT DIVISION

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ERCOLE ROSA, JR., ASST. SECRETARY
DEPT. OF INDUSTRIAL ENGINEERING
COLUMBIA UNIVERSITY
NEW YORK 27, N. Y.

August 2nd, 1952

Dear Professor Weiner:

I am writing to you to express the appreciation of the EXECUTIVE COMMITTEE of the Management Division to you for your willingness to participate in the program devoted to Automatic Production at the Annual Meeting of the ASME to be held in New York on December 2nd, 1952. I am also enclosing a copy of the complete program for this series of sessions.

The program as it now stands is somewhat tentative, primarily because of the title we have suggested for your paper, and for the fact that we have not as yet inquired if you will be able to participate in the Evening Session devoted to the discussion of the broader problems of Automatic Production. Will you inform us at your earliest convenience if these both will meet with your approval.

In order to permit the fullest discussion of the basic formal concepts of Automatic Production, we are planning to have it preprinted for the meeting. To accomplish this we are requesting that you forward the original and three copies of your paper to us before August 31st. The copies are for the use of reviewers who will recommend the paper for publication in ASME periodicals. It will also be helpful if you will accompany the manuscript with a list of the names and addresses of people whom you would like to have invited to discuss it.

As a general rule ASME papers do not exceed 4,000 words (about 14 pages of double-spaced typescript). This makes for a minimum of editing when the papers are prepared for publication.

We are all looking forward with interest to receiving your paper and to the sessions at the Annual Meeting.

Professor Norbert Weiner
Department of Mathematics
M.I.T.
Cambridge 39, Mass.

Sincerely yours,

Ercole Rosa Jr.
Ercole Rosa Jr.

PLEASE REPLY TO WRITER AT HIS BUSINESS ADDRESS

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331 MADISON AVENUE
NEW YORK 17, NEW YORK
MURRAY HILL 7-0754

P. O. Box 1070

August 4, 1952

Mr. Norbert Weiner
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Mr. Weiner:

We would like to obtain a reprint of the following article
for our files:

Weiner, N. Time, communication, and the nervous system.
Ann. N. Y. Acad. Sci., 1948, 50, 197-220.

If you do not have copies of this article available for
distribution, could you inform us where we might obtain one?
Any assistance you can give us in this matter will be greatly
appreciated.

Sincerely,

Arlene Cleven

Arlene Cleven
Librarian

[ans 9/18/52]

1446 Tuckerman Street, N. W.
Washington 11, D. C.
August 4, 1952

Mr. Norbert Wiener
53 Cedar Rd.
Belmont, Mass.

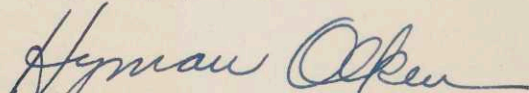
Dear Mr. Wiener:

The writer has, for the past several years, made a study of the human nervous system and has come to the conclusion that the entire physiological mechanism of thought can now be unravelled. I have projected a treatise in which this would be done. This treatise is outlined in the sheets enclosed.

My problem at present is to obtain support of a research foundation for the next two years to enable me to complete this project. In view of your past work in this field with Arturo Rosenbluth, I felt you would be best qualified to advise which agencies would be most likely to lend support to this project.

Any helpful advice or information you can extend in this matter would be cordially and highly appreciated.

Sincerely yours,


Hyman Olken

HO:mso

[ms 8/23/52]

PHYSIOLOGICAL BASIS OF HUMAN THOUGHT

- CH. I. THE HUMAN THINKING MECHANISM
- a) Component control systems
 - 1) Major systems; functions, composition
 - 2) System tie-ins
 - b) Basic control mechanisms
 - 1) Reflex arc
 - 2) Visceral control loop
 - c) Organization of basic control mechanisms
 - 1) Unselective organization -- spinal integration
 - 2) Selective organization -- thalmo-cortical selection mechanism
 - d) Proprioceptive control
 - 1) Basic types of control action and nervous system analogues
 - 2) Human proprioceptive control mechanism -- the cortex
 - e) Coarse and fine control
 - 1) Principles of coarse, fine, control; nervous system analogues
 - 2) Coarse-fine switch-over mechanism
- CH. II. THE MECHANISM OF STORAGE AND RECALL
- a) Phenomena of single-neuron conduction
 - b) Phenomena of neuron-mesh conduction
 - c) Cellular architecture of cortex
 - d) Functions of cyroarchitecture
 - 1) Amplification
 - 2) Delay
 - 3) Storage
 - e) The storage and recall mechanism -- selective effect
- CH. III THE ASSOCIATION MECHANISM
- a) Projection and association anatomy (pathways)
 - b) Association mechanisms
 - 1) Projection
 - 2) Intra-sense association
 - 3) Inter-sense association
 - 4) Semantic association
 - c) Higher animal faculties
 - 1) Erect walking
 - 2) Reading
 - 3) Writing
 - 4) Speech
 - 5) Math., etc.

CH. IV. THE PROCESSES OF CREATIVE THOUGHT

- a) Neuron-bed function as multivibrators
- b) Process of spontaneous generation of mental images
- c) Oscillation-- channel association mechanism
- d) Idea organization-- the thalamo-cortical selection mechanism
- e) The mechanism of idea evaluation
 - 1) Mechanism of idea suppression
 - 2) Mechanism of idea stimulation
 - 3) Stimulation-suppression selection mechanism



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ROCKEFELLER CENTER, 630 Fifth Avenue, New York 20 • CABLE ADDRESS *Essandess* • TELEPHONE Circle 5-6400

August 4, 1952

Dear Dr. Wiener:

Thank you for the added material. The extra paragraphs on your father will certainly add some color to his chapter, and the picture, when it comes, may add still more.

Meantime, I have one query about the last paragraph. The explanation of your own name is certainly interesting, but the conclusion, however sound historically, scarcely constitutes a valid complaint against the name of Constance. Plenty of girls have been called Constance without recourse to Victorian literature. The name is just not unusual enough.

I also have a query about the additional material on page 330. It has to do with the following sentence:

"I was not surprised nor particularly angry that he could get me no favored treatment, but I was not exactly pleased that he came the officer over me and did not invite me to his apartment or to a meal."

I do not understand what is meant by the clause "he came the officer over me." In any case, the incident, after all these years, sounds a little petty, and I think it would be as well to cut it.

Because of last minute pressure with late fall books, our stylist will not get to your manuscript until the middle of this month, and that, perhaps, is just as well; for it will give us time to clear up these very small points and to decide what, if anything, from your father's STRAY LEAVES might be included. Incidentally, it seems to me it would be a good idea to include his very interesting statement quoted in the American Magazine. This can be done either in the form of a footnote or of an appendix. However, let's decide that after I have seen the STRAY LEAVES.

Very sincerely,

Nanny Simon

Dr. Norbert Wiener
South Tamworth, N. H.

hws:lf

GLENN WILSON

5 August, 1952

DEAR MR. WIENER,

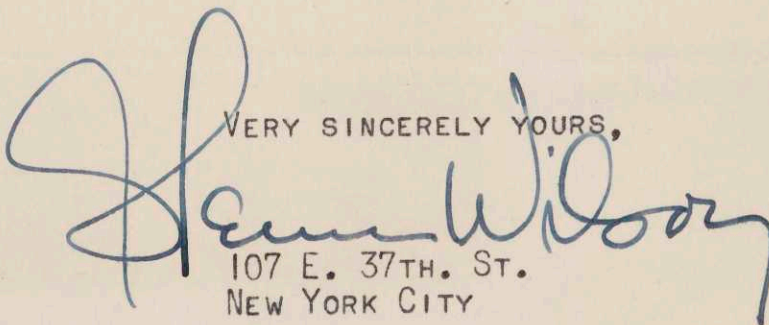
I AM IN THE PROCESS OF READING YOUR BOOK ON CYBERNETICS AND, AS A LAYMAN, AM FINDING IT EXTREMELY FASCINATING. IT SEEMS TO GO ALONG WITH MY STUDIES IN PSYCHOLOGY, PHILOSOPHY AND GENERAL SEMANTICS.

THE STUDY CERTAINLY INVOLVES ALL THE IMPORTANT FIELDS IN SCIENCE, IT SEEMS, WITH AN AIM TOWARD THE BETTERMENT OF HUMAN LIVING. YOU HAVE MADE ONE OF THE MOST IMPORTANT CONTRIBUTIONS TO HUMANITY IN THIS OR ANY OTHER ERA AND YOU SHOULD BE HEARTILY APPLAUDED.

I SHOWED THE BOOK TO A MATHEMATICIAN FRIEND OF MINE AND AM RATHER SELFISHLY SORRY THAT I DID AS HE IS SO ENGROSSED IN IT THAT HE FINDS IT DIFFICULT NOT TO RE-READ AND RE-READ AGAIN. HOWEVER I HAVE HOPES THAT ONE OF THESE DAYS HE WILL RETURN IT AND I WILL BE ABLE TO FINISH IT. IN THE MEANTIME THIS LETTER.

THE VERY BEST SUCCESS TO YOU IN YOUR WORK.

VERY SINCERELY YOURS,



107 E. 37TH. ST.
NEW YORK CITY

[ans 8/18/52]

The Acton Foundation
230 South 22nd Street
Philadelphia 3, Pa.

August 5, 1952

Dr. Norbert Wiener
53 Cedar Road
Belmont, Mass.

Dear Dr. Wiener,

Because of your studies in cybernetics and from what I know of your own work, I feel that you may be interested in the enclosed letter and pamphlet. I think I am not wrong in hoping that some of the ideas contained there may fit in with or stimulate some thoughts on your part, and that you might wish to pursue the subject further.

At present I am the only representative of the Foundation in this country, but I should be happy to forward any of your reactions to Mr. Ney, Mr. Sherry or Mr. Farr. I would also of course be delighted to hear from you or to discuss it with you in person if I manage to get to Boston this summer as I hope to do, or if you should come to New York.

In any case, I hope you will enjoy reading $E+X=P$ and An Hypothesis of X and that you will let us know your opinions on them.

Sincerely yours,

Joan Wright
Joan Wright

The Acton Foundation
230 South 22nd Street
Philadelphia 3, Pa.

Dear Dr. Wiener,

It was felt by the other members of our group that, as head of the Acton Foundation, it might be best if I were to write my own letter of introduction for our pamphlet, to supplement the notes mailed by Miss Joan Wright and Miss Elizabeth Rogers in America and England.

I welcomed the opportunity to do this as, while I expended every effort in the pamphlet to explain both the material and the Foundation itself, I did not think to make an explanation of what we are seeking from those to whom copies of this pamphlet will be sent.

My feeling from the first and still to the largest extent is that the response should take care of itself, indeed must do so if the work of the Foundation is to bear any results. However, I have, subsequent to the publication of the pamphlet, decided to temper my original judgement with this letter.

From the beginning we of the Foundation as well as the authors, Mr. John Ney and Mr. Earl Sherry, have agreed that what meaning $E+X=P$ and An Hypothesis of X have must be already instilled in the reader through his own knowledge and experience. That, in other words, the meaning of these essays is not of one piece with the essays but is rather in the contemplation which they may afford the reader.

Further, the authors and the Foundation have realized from the first that $E+X=P$ and An Hypothesis of X, no matter what scientific and philosophic merit may be accorded their means of communication, must more often than not in their ends - (a definition of man and the universe) - be classified as religious essays and, thereby, by many readers denied any potentiality for scientific or philosophical significance.

Having been aware of the reality of these two handicaps to communication from the first, I can assure you that even my own personal optimism is not enough to delude me that they can be circumvented by this short note. However, the identification of these handicaps affords me the opportunity of stating briefly our expectations for the pamphlet.

It is our hope (a hope, I might add, much like that with which a message is placed in a bottle and the bottle tossed out to sea) that some few of you who receive this pamphlet will become preoccupied with the means and ends of these two essays and will be moved to make reply. From these replies (and, of course, only by permission) the Acton Foundation looks forward to future and more comprehensive publications of E+X=P.

It is a further hope that to all of you this pamphlet may bring some happy hours of contemplation and thought.

Sincerely yours,

Howard Acton Farr

Howard Acton Farr

(per JW)

Department of Physics
University of Oklahoma
Norman, Oklahoma
August 6, 1952

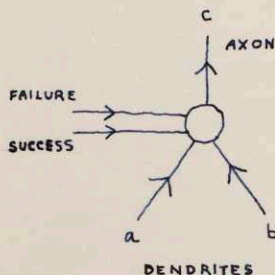
Dr. Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, Mass.

Dear Dr. Wiener,

Thank you for your letter of July 19 and your suggestion that I contact Drs. Walter and Ashby. I have since written Dr. Ashby, and had written Dr. Walter shortly before receiving your letter. It was the work of Dr. Walter which originally interested me in learning machines. After reading his article in the Scientific American about *Machina docilis*, I began to wonder if the conditioned reflex type of memory he described might lend itself to maze learning, and to cast about for circuits that would accomplish this. I decided, however, on a slightly different approach, more along lines suggested in your discussion of the tone mechanism in the original *Cybernetics* book. The major results are briefly outlined below.

The basic idea is a system whose circuits tend to be altered by failure, and stabilized by success, being continually subject to statistically random influences. A special tone circuit defines failure and success, putting out disrupting-pulses when certain things occur, and stabilizing-pulses when other things occur. For example, if success and failure are to be defined in terms of the condition of the storage battery, the tone circuit may be set to put out stabilizing-pulses when the vehicle reaches the charger, so as to stabilize those circuits which have recently been active. On the other hand, if the battery becomes low, disrupting-pulses are sent to recently active circuits. In maze learning, only those circuits survive which pilot the vehicle successfully through the maze, and they tend to be stable and to control the further behavior of the vehicle. The process is quite suggestive of natural selection.

The circuits consist of similar basic units analogous to neurons. These units are composed primarily of relays, and I call them reron. Each has one axon and two dendrites, in addition to inputs from the tone circuit. Certain combinations of pulses at the dendrites may produce an output pulse at the axon, or the reron may, like an open switch, not fire at all. A reron is illustrated below, along with an abbreviated list of firing combinations, or states; rectification occurs in the direction of the arrows.



STATES

(Necessary and sufficient conditions for a pulse at c)

- (1) Signals at a and b within a one minute interval.
- (2) A signal at a.
- (3) A signal at b, and no signal at a within the previous minute.
- (4) Two signals at a, separated by at least five milliseconds and occurring in a one minute interval.

Each reron operates on a statistical basis, containing noise generators to provide the random element. The stabilizing or disrupting influences from the tone circuit affect the individual rerons, stabilizing or tending to alter the states that recently-firing-rerons were in at time of firing. Any state may change through random causes, but the stabilizing-pulse weights the statistics in favor of the particular state, while the disrupting-pulse weights the statistics against the state.

As a special case of a more general machine, I have designed (but not built) a very simple learning device -- consisting of three rerons -- which learns a T maze, and also learns a simple language. It roams around like Dr. Walter's turtles until its batteries need replenishing, then signals an operator of this need and is placed in the maze, the proper hunger signal being learned rather than automatic. The vehicle is provided with a light, and can be taught to leave this light off until hungry, and then turn it on, or can be taught to leave the light on until hungry, and then turn it off. In the absence of training, the light would go on and off at random.

The firing of one reron produces a right turn; the firing of the second reron produces a left turn; and the firing of the third reron turns on the light briefly. Each of the three rerons is stimulated at dendrite a by a series of pulses that continues as long as the battery is below a certain level of charge, and the third reron (controlling the light) is stimulated at dendrite b as long as the battery is charged above this level. If the third reron is in state (2) or (4), it will therefore keep putting out pulses at c (keeping the light on) as long as the battery is low, but will not fire when the battery is not low. On the other hand, if this reron is in state (3), the light will remain on while the battery is charged, and go off when the battery becomes low.

If the language we wish to teach is the first mentioned -- to leave the light off until hungry and then turn it on and keep it on until fed -- we wait until the light goes on (as a result of random causes or the tone circuit), and then put the vehicle at the mouth of the maze. If it turns the wrong way, we start it again, and keep this up until it turns the correct way (as a result of random causes or the tone circuit) and reaches the charger. Let us suppose the battery is not low. In this case, the charger has no effect and nothing is learned. Since the light went on, and the battery was not low, the reron controlling the light must have "jumped" to state (3). If the battery becomes low before the reron "jumps" to some other state or if the reron "jumps" to some other state before the battery becomes low, the light will go off. We now take the vehicle out of the maze, and wait for the light to go off and then on again. When the light goes off, let us suppose it is due to the battery becoming low. Then when the light goes on -- it must be because the reron has "jumped" to state (2) or state (4) -- the vehicle is put in the maze as before, and started again and again until it reaches the charger. This time it was hungry, and the charging process results in a stabilizing pulse which affects the reron controlling the light, because this reron has just fired. Therefore the reron will tend to remain in state (2) or (4), and for either of these states, the light will go out when the battery is charged, stay out until it becomes low again, and then go on. We assumed the light went off because the battery had become low; if it had gone off because the reron had "jumped to some other state, the same procedure would eventually work. Though (2) or (4) becomes the most probable state, it may take several more lessons before the probability of state (2) or (4)

becomes high enough that the vehicle may be said to have learned the language. The statistical nature of learning and forgetting would give rise to learning and forgetting curves which could be compared with those associated with animal behavior.

The second language, to leave the light on until hungry and then turn it off, is taught by putting the vehicle at the mouth of the maze when the light goes off, rather than when it goes on. A third language is also possible -- signalling hunger by flicking the light on and immediately off again. This would be a little harder to teach, as the reron would have to be in state (1) when the hunger pangs first started. Learning of the maze follows a similar pattern. The design has been simplified for this explanation; a more detailed discussion would involve more than four states, and the tone circuit would react to "painful" bumping as well as to battery condition.

The three reron machine provides an example of learning to learn. It has been mentioned that the tone circuit affects recently active rerons, and the question arises, "How recently?" The maximum time that may elapse between the action of a reron, and a pulse which stabilizes or tends to alter the state for which firing occurred, is determined the same way the states are determined, by trial and error. This maximum time, or time constant, is subject to random factors, but when a reron receives a pulse that alters or stabilizes the state, the time constant tends to be altered or stabilized, respectively. In maze learning, if the machine turns the wrong way, then is started again and turns the right way to the charger, both the wrong-way-circuit and the right-way-circuit may be stabilized, because each reron will have fired a short time before the charging. Therefore, the time constant must be small enough that if the vehicle goes through the maze twice, the circuit controlling the first turn is not likely to be stabilized; but it must be large enough that the circuit controlling the second turn is likely to be stabilized. If the machine learns a maze and then the ^{things} maze is changed, the machine adapts to the new maze, forgetting certain ^{things} about the old one, but retaining that which aids in solving both mazes, such as what was learned about the time constant. Hence, if the vehicle is given alternate right and left T mazes to learn, it should generally learn the fortieth maze faster than the second; this constitutes learning to learn. Ability to generalize is also involved, since those things of aid in solving all T mazes are firmly implanted in the behavior of the machine, more firmly, in fact, than the transient particular tendency to turn left or right.

The assertion that a time constant is stabilized means only that the probability for this particular time constant is increased, and the statement that the time constant has a certain value, K , means that the time in a large number of particular cases for the same K follows a gaussian distribution about K . The actions of the machine are only statistico-determinant, with the statistics regulated by trial and error.

An interesting generalization of the three reron machine may be obtained by randomly soldering the sensory and motor connections of this machine into a randomly soldered-together network of ten or twenty rerons. In general, such an arrangement would have about the same behavior as the three reron machine, though it would be slower in learning. The trial and error favoring of various states would set up reron chains with one reron firing the next, successively along the chain. The first reron in the chain would receive sensory data, and the last would control the light or

the turning mechanism. Undesirable connections would be effectively eliminated by the favoring in some rerons of the "open switch" state for which these rerons would never fire. Reron circuits would thus evolve, and as in the case of the three reron device, the drift toward equilibrium would generally produce the desired behavior in a reasonable time. This network, with suitable motor and sensory connections, could also learn to track an object. It should be possible, in the language of probability, to mathematically treat the problem of how long the net would take to learn or forget a given behavior pattern, if the network connections and the initial values of the time constants, and so on, were given.

This network may be comparable to the cerebral cortex, with the tone circuit corresponding to more primitive parts of the brain. A considerably larger net might be able to learn mazes of more than one turn, due to rerons in state (4) which would allow a different response at the second turn than at the first, and so on. At any rate, it is reasonable that the larger net could learn arithmetic, and that it could learn to win certain simple games, if the environment were such that this learning served to increase the tone. The capabilities of the system would be limited by the total number of rerons, but not appreciably by the detailed way in which the rerons were soldered together. Judicious attachment of sensory and motor connections might speed learning, but the method of attachment would, in general, make little fundamental difference.

The machine as it has been described would have to learn entirely on its own initiative; it could not learn by being led. A scanning process is suggested whereby imposed behavior would cause rapid fluctuation of the reron states, to obtain circuits for which the inputs of the device would have resulted in spontaneous outputs agreeing with the imposed behavior. Then the new states, found by the scanning process, would revert to the original states, but the probabilities of these new states would, for a short while, be more affected than the original states by signals from the tone circuit.

Habit formation arises from factors which increase the stability of the state of a reron each time it fires, though this tendency is normally overruled if opposed by an impulse from the tone circuit. This property should tend to "lock in" reverberating loops, since rerons in such loops would fire continually. A conditioned reflex or association reaction occurs for a reron in state (1) that fires fairly often, not often receiving a pulse at one dendrite without a pulse at the other. Under these conditions, there is a tendency to shift from state (1) to a state for which a single pulse at either dendrite fires the reron. If a few rerons in state (1) are dispersed throughout the net, with reron chains from the inputs of the machine converging on them, conditioned reflex behavior should result.

The statistically random character of the rerons means that the outputs of the device are not rigidly determined by its inputs; this provides a basis for free will and a hypothesis-making quality that may be closely related to creative imagination. And the regulation imposed by trial and error is suggestive of the inductive reasoning, "What worked once will work again, and what failed once will fail again." Also the conditioned reflex property, mentioned above, is suggestive of the inductive reasoning, "This sound was accompanied by light, therefore all sound is accompanied by light."

The capabilities of this machine should increase with the number of rerons, at the expense of learning time. But the problem of learning time could be lessened by having several nets, each successive net containing a vastly greater number of rerons than the previous net. The smaller net could regulate the behavior at first, the larger nets taking control only when able to surpass the smaller in "satisfying" the tone circuit. Even the tone circuit might be given a reron network capable of defining goals and purposes subsidiary to whatever basic compulsions are built-in.

Thank you again for your interest.

Respectfully,

Robert J. Lee
Robert J. Lee

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EDWARD L. GREENE
President



August 6, 1952

Dr. N. Wiener
c/o John Wiley & Sons, Inc.
440 Fourth Avenue
New York, N. Y.

Re: National Cybernetics Co.
Box 661
Lynbrook, L.I., N. Y.

A. Soble, Ph. D., General Manager

Dear Dr. Wiener:

We are beginning to receive inquiries concerning the named organization, which is currently soliciting garment manufacturers for financial support of the firm's projected production of machinery for the Needletrades Industry designed according to the principles of cybernetics.

Neither the firm nor its general manager is known to this Bureau and, at this time, we have directly approached National Cybernetics asking for detailed information concerning its background and activities.

It is with the thought that your specialized research in the field of cybernetics might bring projects such as that of National Cybernetics to your immediate attention that we inquire of you at this time. If you are familiar with this firm and its Dr. A. Soble, may we be benefited by your knowledge of them?

We will be grateful for the information you provide.

Cordially yours,

Diana Bennett
Representative

Diana Bennett
mw

Performing a Public Service with the Support of Private Industry

[ans 8/15/52]

Telephone :
Cleeve Hill 241

NATIONAL COAL BOARD

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CHELTENHAM,
GLOS.

6th August, 1952.

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

Dear Professor Wiener,

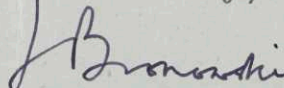
I am delighted to hear that Simon and Schuster are to publish your autobiography. I wrote to you when I had tried it with the Cambridge Press, but my letter was returned to me from Mexico. I will assume now that you will make your arrangements directly with Morley here. The typescript should have reached you already.

I am glad to hear that you are planning to begin your book in my Contemporary Science series. The general description which I have given for it to Heinemann, the publishers, is that it will deal with the social applications of self-controlled machines. I will leave you to treat this theme in your own lively way, just as the spirit moves you.

It is a great pleasure to hear from you and your family again, and I hope that I may do so often; and indeed, that there will be an opportunity soon for us all to meet again.

With best wishes,

Yours sincerely,



J. Bronowski.
Director.

{ans 8/27/52}

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IAGO GALDSTON, M.D., Secretary

Aug. 6th, 1952

Dear Dr. *Wiener,*

This is to advise you that the address which you so kindly contributed for the Academy's FM Programme, "For Doctors Only", has been scheduled for broadcast on Thursday evening, *Aug. 28th, 1952* over Station WNYC-FM 93.9 megs. *at 9:00 P.M.*

May I once again express to you our very cordial thanks for your good help.

Sincerely yours,

Iago Galdston, M.D.

C.H. Hearn,
Assistant to Dr. Galdston

THIRTEENTH SERIES • POSTGRADUATE RADIO PROGRAMME

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The LISTENER will find given herein the Program of the forthcoming GRADUATE FORTNIGHT of The New York Academy of Medicine, devoted to the subject of "HORMONES IN HEALTH AND DISEASE." You are invited to participate in the GRADUATE FORTNIGHT. Applications for registration should be addressed to Dr. Robert L. Craig, 2 East 103 Street, New York 29.

AUGUST 1952

AUGUST 7

1. CIRCULATORY RESPONSE TO LIFE SITUATIONS—
Stewart Wolf, Jr., *Professor of Medicine and Head of Department of Medicine, United Hospitals, Oklahoma City.*

AUGUST 14

2. OFFICE MANAGEMENT OF DIABETES—Herbert Pollack, *Associate Physician for Metabolic Diseases, The Mount Sinai Hospital.*

AUGUST 21

3. GALLSTONES AND THE BILIARY TRACT DISEASES—
Frank Glenn, *Professor of Surgery, Cornell University Medical College; Surgeon-in-Chief, The New York Hospital, Cornell Medical Center.*

AUGUST 28

4. MEN, MACHINES, AND THE WORLD ABOUT THEM—
Norbert Wiener, *Professor of Mathematics, Massachusetts Institute of Technology.*

SEPTEMBER 1952

SEPTEMBER 4

5. SKIN CANCER—WHAT IS WELL FOR A PHYSICIAN TO KNOW—Anthony C. Cipollaro, *Professor and Director of Dermatology at New York Polyclinic Medical School and Hospital.*

SEPTEMBER 11

6. APPLICATION OF CLINICAL PSYCHOLOGICAL TESTS TO A FULLER UNDERSTANDING OF SOMATIC DISEASE—Mollie R. Harrower, *Research and Consulting Psychologist, New York City; Editor, American Lecture Series in Psychology; Research Director of Court Screening Project, New York City.*

SEPTEMBER 18

7. THE ROLE OF CONNECTIVE TISSUE IN CARDIOVASCULAR DISEASE—Paul Klemperer, *Pathologist at The Mount Sinai Hospital; Professor of Pathology, College of Physicians and Surgeons, Columbia University.*

SEPTEMBER 25

8. LABORATORY TESTS OF ENDOCRINE FUNCTION—
Lester J. Gabrilove, *Resident Assistant Physician, The Mount Sinai Hospital.*

Adjunct

OCTOBER 1952

OCTOBER 2

9. CANCER OF THE LUNG—A DISEASE OF INCREASING PREVALENCE—Herbert C. Maier, *Director of Surgery at Lenox Hill Hospital; Clinical Professor of Surgery at Columbia University.*

OCTOBER 9

10. RECENT ADVANCES IN THE DIAGNOSIS OF ENDOCRINE DISEASE—Louis J. Soffer, *Associate Attending Physician and Head of the Endocrine Research Laboratory and Clinic, The Mount Sinai Hospital; Assistant Clinical Professor of Medicine, Columbia University.*

OCTOBER 16

11. RHEUMATIC FEVER, ITS DIAGNOSIS AND TREATMENT WITH SPECIAL REFERENCE TO ACTH—May G. Wilson, *Chief, Pediatric Cardiac Clinic; Associate Attending Pediatrician, New York Hospital; Associate Professor of Clinical Pediatrics, Cornell University Medical College.*

OCTOBER 23

12. RECENT ADVANCES IN THE MANAGEMENT OF THE POSTOPERATIVE PATIENT—Henry T. Randall, *Clinical Director and Chief of Surgical Services, Memorial Center; Associate Professor of Surgery, Cornell University Medical College.*

OCTOBER 30

13. PROGRESS IN THE CONTROL OF UTERINE CANCER—S. B. Gusberg, *Assistant Professor of Clinical Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University.*

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THE NEW YORK ACADEMY OF MEDICINE
TWENTY-FIFTH GRADUATE FORTNIGHT
OCTOBER 6-17, 1952
HORMONES IN HEALTH AND DISEASE
EVENING LECTURES at 8:30 P.M.

MONDAY, OCTOBER 6

OPENING ADDRESS

WM. BARCLAY PARSONS, *President, The New York Academy of Medicine*

HORMONES AND COMMON SENSE

FULLER ALBRIGHT, *Harvard Medical School*

HORMONES OF THE ANTERIOR PITUITARY GLAND

ABRAHAM WHITE, Ph.D., *Columbia University*

**THE REGULATION OF WATER EXCRETION
BY THE NEUROHYPOPHYSIS**

H. B. VAN DYKE, *Columbia University*

TUESDAY, OCTOBER 7

HORMONES OF THE ADRENAL CORTEX

E. C. KENDALL, Ph.D., *Princeton University*

**DIAGNOSIS OF ENDOCRINE DISEASE:
CLINICAL AND LABORATORY CONSIDERATIONS**

LOUIS J. SOFFER, *The Mount Sinai Hospital*

WEDNESDAY, OCTOBER 8

THE ENDOCRINE CONTROL OF METABOLISM

FRANK L. ENGEL, *Duke University*

DISTURBANCES IN GROWTH

LAWSON WILKINS, *Johns Hopkins Medical School*

THURSDAY, OCTOBER 9

**MANAGEMENT OF ADDISON'S DISEASE IN
ADRENALECTOMIZED PATIENTS**

D. M. BERGENSTAL, *University of Chicago Medical School*

ACTH, CORTISONE AND RELATED STEROIDS IN

CLINICAL MEDICINE: PRACTICAL CONSIDERATIONS

CHARLES RAGAN, *Columbia University*

FRIDAY, OCTOBER 10

**PHEOCHROMOCYTOMA WITHIN AND WITHOUT
THE ADRENAL MEDULLA**

GEORGE F. CAHILL, *Columbia University*

VIRILISM

JOSEPH W. JAILER, *Columbia University*

MONDAY, OCTOBER 13

CUSHING'S SYNDROME

ABBIE I. KNOWLTON, *Columbia University*

DIABETES: METABOLIC EFFECTS OF INSULIN

DE WITT STETTEN, JR., *The Public Health Research Institute of The City
of New York, Inc.*

TUESDAY, OCTOBER 14

**THE PITUITARY THYROID RELATIONSHIP IN
NORMAL AND DISORDERED THYROID STATES**

SIDNEY C. WERNER, *Columbia University*

CHOICE OF MANAGEMENT IN HYPERTHYROIDISM

CYRUS C. STURGIS, *University of Michigan*

WEDNESDAY, OCTOBER 15

THYROIDITIS AND MYXEDEMA

DAVID P. BARR, *The New York Hospital*

PARATHYROIDS AND CALCIUM METABOLISM

I. SNAPPER, *The Mount Sinai Hospital*

THURSDAY, OCTOBER 16

**USE OF THE STEROIDS AND GONADOTROPINS
IN GYNECOLOGY**

HOWARD C. TAYLOR, JR., *Columbia University*

HORMONAL CONTROL OF NEOPLASTIC GROWTH

RULON W. RAWSON, *Cornell University Medical College*

FRIDAY, OCTOBER 17

THE RELATIONSHIP OF HORMONES TO PEPTIC ULCER

JOSEPH B. KIRSNER, *University of Chicago*

HORMONES AND THEIR INFLUENCE ON THE EMOTIONS

FRANCIS J. BRACELAND, *Yale University*

MORNING PANEL MEETING — 11:00-12:30

WEDNESDAY, OCTOBER 8

**PRACTICAL CONSIDERATIONS REGARDING REALISM AND
WISHPFUL THINKING IN ENDOCRINE THERAPY**

Chairman: RUSTIN MCINTOSH

Members: CHARLES L. BUXTON, JOSEPH W. JAILER, MARTIN PERLMUTTER,
EPHRAIM SHORR, LAWSON WILKINS

FRIDAY, OCTOBER 10

**PRACTICAL CONSIDERATIONS REGARDING THE USE OF
ACTH AND CORTISONE**

Chairman: LOUIS LEITER

Members: HENRY L. BARNETT, JOSEPH J. BUNIM, ARTHUR W. GRACE,
O. H. PEARSON, LOUIS J. SOFFER

WEDNESDAY, OCTOBER 15

**PRACTICAL CONSIDERATIONS REGARDING DIAGNOSTIC
AND THERAPEUTIC PROCEDURES IN DISORDERS
OF THE THYROID GLAND**

Chairman: DAVID P. BARR

Members: WM. BARCLAY PARSONS, J. E. RALL, CYRUS C. STURGIS,
SIDNEY C. WERNER

FRIDAY, OCTOBER 17

**PRACTICAL CONSIDERATIONS REGARDING HORMONAL
MANAGEMENT OF MALIGNANT NEOPLASMS**

Chairman: C. P. RHOADS

Members: IRA T. NATHANSON, JAMES J. NICKSON, RULON W. RAWSON,
W. W. SCOTT, WILLET F. WHITMORE, JR.

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**POSTGRADUATE
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OF MEDICINE**

THURSDAYS

9:00 P.M.-10:00 P.M.

WNYC-FM — 93.9 megs

AND

**PROGRAMME OF
TWENTY-FIFTH
GRADUATE FORTNIGHT
OCT. 6-17, 1952**

My problem is:

1. What should be my Major?
2. What additional courses should I take.
3. Does Cybernetics have any branches or fields within itself? If so, what are they?
4. What kind of work will I be able to do after my education?

If you will answer these questions for me, sir, or refer me to someone else, I'll be forever grateful to you.

Sincerely,
H.E. Hlichl

S/Sgt. Harvey E. Diehl
584th A.F. Band
Eglin A.F. Base, Florida

[ans. 18/18/52]

South Tamworth, N.H.

August 7, 1952.

Dear Mr. Simon:

Here are the Stray Leaves, in a copy which you may keep indefinitely. I suggest that you use this, as well as the Bruce article, as you see fit. In the insert on P. 29, I suggest that the last sentence read:

I must think that my parents' indifference to the consequences of giving me such a recondite and unusual name was part and parcel of the decision which they had already made to direct and to channel my life in every detail.

As to the insert on p.330, kill it.

I hope you have recovered your sense of equilibrium.

Sincerely yours,

Norbert Wiener.

7 Aug 1952

Mr. Wiener,

I realize that your time is valuable and that this might turn out to be a long letter. I'm apologizing in the first paragraph so that you might bear me out and give me some kind of advice. I can't fully emphasize how much it will mean to me.

I am interested in "Cybernetics". My interest doesn't seem to narrow down to any one part of it — I'm interested in everything you covered in your book. My knowledge of it at the present time consists of what I've read in your book (skipping the Math, of course) and in E. C. Berkeley's book "Giant Brains."

The following is some of my background so you can understand my problem a little

v./

better. I am 24 years old and in the Air Force (S/Sgt) with about a year to go before I am discharged. I've been a Musician for the last 14 years. I'm a high school graduate but didn't learn much Math in school; however, I'm willing to learn all the Math necessary to get into Cybernetics. When I get discharged, I'll be able to attend almost any college of my choice. I'm not interested in getting an education for the sake of being able to show everyone my degree. I want to learn Cybernetics. It probably would be advisable for me to get a degree since most corporations, etc., require it. It's my belief, however, that if a person knows something, he knows it — degree or no degree!

Autobiographical material by Leo Wiener in the Boston Evening Transcript.

"Stray Leaves from my Life."

March 19, 1910. Part III, p. 2. Student days in Berlin, Vegetarianism, and decision to come to America.

March 26, 1910. Part III, p. 2.
II. Arrival in America from Berlin. Landing in New Orleans, working in a mill. Left there to go to work on construction of railroad from New Orleans to Meridian, Miss.

April 2, 1910. Part III, p. 2. Amusing Adventures in a Primeval Forest. Work on the railroad. A minor accident damaged some equipment and led to dismissal. Worked way back to Meridian doing odd jobs.

April 9, 1910. Part IV, p. 2.
IV. Wanderings in Mississippi and Kansas. Destination was Kansas and a Swedish vegetairan.

April 16, 1910. Part III, p. 4.
Life on a Kansas farm and drudgery in a City. First experience with out-of-doors employment -- very happy in farm work. Many jobs in ~~Kansas-city~~ Odessa. As janitor in a dry goods store. Teacher in Odessa schools, then to Kansas city.

April 23, 1910. Part III, p. 6.
VI. As Teacher and Student in Kansas City. "I taught...by giving myself all to my pupils...by imparting, not knowledge, but the desire for knowledge." Because of interest in languages of Central American Indians, planned to go to Yucatan and Guatemala.

April 30, 1910. Part III, p. 10.
VII. Kansas City Society and Psychic Research. Strong condemnation of society people. Intolerance of psychic phenomena because of its quackery.

Hedy to Bruce

THE CASE OF THE WINNER CHILDREN

Professor Leo Wiener, of Harvard University, a scholar with an international reputation, is another who believes that the secret of precocious mental development lies in early training. Like Dr. Berle he is the father of four children, ranging in age from four to sixteen; and like Dr. Berle he has had the courage of his convictions in making them the subjects of an educational experiment. The results have similarly been astounding, more especially in the case of his oldest son, Norbert.

This lad, at eleven, entered Tufts College, from which he graduated in 1909, when only fourteen years old. He then entered the Harvard Graduate School, where he spent a year specializing in scientific subjects, and is now at Cornell studying for the Ph.D. degree, which he will undoubtedly gain at an age when most boys are beginning their college careers.

His sisters, Constance and Bertha, promise to make almost as remarkable a record. Constance, aged twelve, is a high-school pupil in Cambridge, and will be ready to enter Radcliffe in a couple of years. Bertha, eight years old, has still two years in the grammar school, but her father is convinced that, after entering the high school, she will progress so rapidly as to be qualified for college before thirteen. Fritz, the baby of the family, is still so young that nothing can be predicted of his future, but his father confidently expects that it will be fully as striking as that of his brother and sisters.

"There is no reason why it should not be," he said, "for he will receive exactly the same kind of training that they have received, and I am positive it is to the training that we must attribute the results secured with them. It is all nonsense to say, as some people do, that Norbert and Constance and Bertha are unusually gifted children. They are nothing of the sort. If they know more than other children of their age it is because they have been trained differently.

METHODS OF EDUCATION

"Just what method have I used? Well, it is difficult to explain in a few words I believe, to begin with, that children are naturally more intelligent than parents seem to regard them, and that if their natural intelligence is recognized and wisely directed they will display a most gratifying brightness and responsiveness. Instead of leaving them to their own devices -- or, worse still, repressing them, as is generally done -- they should be encouraged to use their minds, to think for themselves, to come as close as they can to the intellectual level of their parents.

"This is not so hard a task as one would imagine. It requires, though, on the part of the parents, a constant watchfulness over their words and actions. When in the presence of their children they should use only the best of English, must discuss subjects of real moment and in a coherent, logical way; must make the children feel that they consider them capable of appreciating all that is said. In a word, the parents must from the beginning surround their children with an intellect-stimulating environment; or, as you would perhaps prefer to say, must utilize the power of 'suggestion' as an aid in their development.

"What is no less important, every child should be carefully studied to determine aptitudes. One child will have a natural bent for mathematics, another for reading, another for drawing, and so forth. Whatever it is, it can be utilized by the parent as affording a line of least resistance along which to begin the educational process. Take the case of my boy Herbert. When he was eighteen months old, his nurse-girl one day amused herself by making letters in the sand of the seashore. She noticed that he was watching her attentively, and in fun she began to teach him the alphabet. Two days afterward she told me, in great surprise, that he knew it perfectly.

"Thinking this was an indication that it would not be hard to interest him in reading, I started teaching him how to spell at the age of three. In a very few weeks he was reading quite fluently, and by six was acquainted with a number of excellent books, including works by Darwin, Ribot, and other scientists, which I had

put in his hands in order to instill in him something of the scientific spirit. I did not expect him to understand everything he read, but I encouraged him to question me about what he did not understand, and, while endeavoring to make things clear to him, I tried to make him feel that he could, if he would, work out his difficulties unaided. The older he grew the more I insisted on this, on the one hand keeping up his interest by letting him see that I was interested in everything he was doing, and on the other encouraging him constantly to think for himself.

LEARNING TO THINK -- NOT TO REMEMBER

"Above all things, I tried to avoid what I consider the great defect of the ordinary school education. As matters now stand, the schools put a premium on memory. It isn't the child who thinks best but the one who remembers most that gains promotion. As a consequence the thinking faculty is starved and stunted. My contention is that the way to teach a child is to train him first, last, and all the time, how to think; to ground him in the principles of reasoning, so that he can utilize and apply them in the study of any subject.

"When Herbert was six I set him to learning languages and history. When he was seven I engaged a tutor from Harvard to give him lessons in chemistry. Between seven and nine I myself taught him algebra, geometry, and trigonometry. I thus varied his studies because I didn't want him to develop in any one-sided way. When he was nine we moved to a small town near Ayer, Massachusetts, where he entered the high school, and, at eleven, graduated at the head of his class. In his first year at Tufts, among other things which astonished his instructors, he wrote a philosophical essay on 'Critical Monism' that was highly praised by the late Professor James. There was no subject in which he did not become proficient once he applied himself to study it. And the explanation is, as I have said, that he had been trained to learn things not by rote but by the exercise of his reasoning powers.

"Of course, this implies in the beginning a certain amount of tactful compulsion by the parent. The child must be made, in a kindly manner, to work out problems, in

order that he may acquire that sense of mastery, that joy of triumph, which is of itself an incentive to further effort. I have followed the same method in educating the two girls. To-day, for instance, I gave the older, the girl of twelve, a Latin passage to translate. She did it well, but there were some mistakes. I told her so. 'What are they?' she asked. 'Oh,' I replied, 'that is for you to find out. You can do it, and you must.' The discovery that she really can do it makes all future study easier for her, and increases her love of study.

"But, let me add, I am far from laying sole stress on the education of the intellect. I have sought also to develop the moral and esthetic side. 'Children,' I constantly say to them, 'you must above everything else be honest with yourselves--not with other people merely, but with yourselves.' I encourage them to confide in their mother and me, to be sincere, frank, upright. And I think I have succeeded."

Dolbear (Miss.)

1

Educational Record at Harvard - 1910-1911

ROBERT WIENER. -- Robert Wiener (10) graduated from Tufts in 1910 at the age of fourteen. His thirteen-year-old sister is a high school pupil, and the nine-year-old sister has one year more in the grammar school. Prof. Wiener says: "All are encouraged to use their minds, to think for themselves and come as near to the intellectual level of their parents as possible. This necessitates constant watch on the part of the parents over their own actions; to use only the best English and to discuss subjects of real moment in a coherent logical way."

Robert learned his letters at eighteen months by seeing his nurse draw them in the sand. He knew them all in two days. At three years he learned to spell and was reading fluently in a few weeks; at six he was acquainted with such excellent books as Darwin and Ribot. He was encouraged to question things he did not understand, but to work out his own difficulties as far as possible. His father emphasized the need of learning to think, not to memorize. At six years languages and history were taught and at nine algebra, geometry and trigonometry. A variety of studies was taken to avoid one-sidedness. Tactful compulsion by his parents was believed by them to have been most valuable. He is now at Harvard taking a post graduate course in philosophy, after having graduated from Tufts and having spent one year in graduate work at Cornell.

It was reported that he tried advanced work in physics, mathematics and biology but was not successful; that his work in philosophy was more satisfactory; but that he lacked originality and tended to be superficial. It seemed impossible for the boy to settle down and gather sufficient data--he wanted to draw conclusions at once and advance to something else; these conclusions were sometimes correct but often otherwise.

From early youth there has been a slow development of motor control. The boy was unable to play any games, or even toss and catch a ball, was awkward in all his

movements indoors. Drawing was a bugbear. He always said he would do things over when errors were pointed out, but this he never did.

The college boys did not find him at all companionable; he associated with some boys of his own age but as he could not play their games and they did not care for his intellectual achievements the tie could not be strong.

WILLIAM JAMES SIDIS.--Perhaps the most unusual boy is William James Sidis (8) who at thirteen was in his third year of special work at Harvard.

The following statement by his father, Dr. Boris Sidis of Harvard, suggests the theory of the boy's education (8):

"The notion that a child's mind should be allowed to lie fallow is utterly wrong and pernicious. The child is a thinking animal and no power can keep him from thinking; from the moment his enquiring eyes first take in the details of his surroundings he begins the mental process which education is intended to guide and develop. He observes, draws inferences from everything he hears and sees and seeks to give explanation to his thoughts. Left to himself he is sure to observe inaccurately and make erroneous inferences. Unless he is taught how to think he is sure to think incorrectly and acquire wrong thought habits, causing him to form bad judgments respecting matters vital to his own and the community welfare. His learning should begin as soon as or even before he starts to talk. There is no danger of overtaxing his mind, the effect will be to develop and strengthen it by accustoming him to make habitual use of latent energy which most people never utilize at all."

William James Sidis began his education by use of his observational and reasoning faculties before he was two years old, and by the aid of blocks learned to read and spell before he was three. His reading was to give him a foundation for sound reasoning. He learned in six months to use the typewriter with considerable dexterity when only three and one half to four years old. At six he began going to school, passing

through all the grades in half a year. He studied at home for two years and entered high school at eight years, where he stayed three months. There seems to be some difference in point of view. It is said that he was so full of pranks at the high school that it was a cause of considerable relief to have him withdraw, as his presence was making the maintenance of discipline very difficult. It may be added that in his book on Philistine and Genius Dr. Sidis speaks bitterly of the insistence of discipline and the lack of appreciation of genius in schools.

He had mastered algebra, trigonometry, geometry, and differential and integral calculus at nine or ten years.

At eleven years of age he entered Harvard as a special student, and is still there at work on higher mathematics and science. During his first year in college he delivered before the Mathematical Club a paper on four dimensional bodies.

Dr. Groszmann states that his health seems to have been good, and he is large for his age, but is characterized by a certain awkwardness in manual activity and motor expression, suggesting that certain areas of his brain which control motor activity are underdeveloped and that his nervous system has not its normal strength. That he is egotistical is shown from the fact of his remarking: "I wonder whether the school children in future generations will celebrate this as a holiday because it was the day on which I began the study of the physical sciences." (19) That he is of an imaginative and nervous temperament was shown in his early childhood. It is reported that a guest was sitting in the room near the boy, and she thoughtlessly started to tear up a scrap of paper, when the child sprang upon her fiercely. His mother explained that to him all things were alive and that tearing paper was hurting something.

The effect of his education seems to have been to produce a boy who can do wonderful, even brilliant reasoning in mathematics but has difficulty in transferring that reasoning power to every day affairs. In a class room at Harvard where a formula was being explained the boy became bored and began to entertain himself by balancing his hat upside down on his head. This so distracted the rest of the class that he was asked to refrain. When asked to remain after class he said he couldn't do it; so

the class was excused ten minutes early and the professor made an effort to have the youth see that he had no right to do anything which interfered with the best conditions for the whole class. But the boy would not see it in that light, and would only say, "My father never told me that." To him, it was merely an infringement upon his rights. Another effect of the education in this instance is the lack of respect for older persons. During the discussion after his paper on four dimensional bodies at the Mathematical Club a question was asked, and one of the older professors answered it by explaining in different terms than those the boy had used; whereupon young Sidis turned to him saying: "I can not see that you have added anything to the discussion."

Several other children have been educated along the line Dr. Boris Sidis advocates with something of the same results.

COMMUNICATION

Apropos of the allusion to Norbert Wiener in our last issue (December, 1912, page 463), we are glad, in accordance with the wish of Norbert Wiener and his father, who took exception to Miss Dolbear's statements, to print the following letters supplied by them.

HARVARD UNIVERSITY
THE GRADUATE SCHOOL OF ARTS AND SCIENCES
24 UNIVERSITY HALL, CAMBRIDGE, MASSACHUSETTS

12 February, 1913.

DEAR PROFESSOR WIENER:

In response to your request for a statement of the record of your son Norbert Wiener in the Graduate School of Arts and Sciences of Harvard University I beg to state that he entered the Graduate School of Arts and Sciences in September, 1909, and that he has pursued graduate studies here since that time with the exception of the year 1910-11, which he spent at Cornell University. His record in courses for the years 1909-10 and 1911-12 is as follows:

1909-10		1911-12	
Physics C	B	Philosophy 5a ¹	A
Botany 2 ¹	B	" 8	A
Zoology 3	B	" 20c	B
" 4 ¹	C	" 20e ¹	A
" 11 ²	A	" 22 ²	B
		" 14a ²	A

Mr. Wiener holds this year a University Scholarship, and has been accepted as a candidate for the degree of Doctor of Philosophy in June, 1913.

Sincerely yours,

(Signed) CHARLES H. HASKINS.

HARVARD UNIVERSITY
THE GRADUATE SCHOOL OF ARTS AND SCIENCES
24 UNIVERSITY HALL, CAMBRIDGE, MASSACHUSETTS

18 February, 1913.

DEAR PROFESSOR WIENER:

The record of your son, Norbert Wiener, as contained in my letter of 12 February should be supplemented by the fact that he received the degree of Master of Arts from Harvard University in June, 1912. I may add, also, that as a candidate for the doctorate in the Division of Philosophy Mr. Wiener has successfully passed the preliminary examination required of candidates for the degree in that Division.

Very truly yours,

(Signed) CHARLES H. HASKINS.

TUFTS COLLEGE
DEPARTMENT OF ARTS AND SCIENCES
OFFICE OF THE DEAN
TUFTS COLLEGE, MASSACHUSETTS, February 13, 1913.

Mr. Norbert Wiener was admitted to the A. B. Course at Tufts College in September, 1906. On date of June 25, 1906, the Principal of the Ayer High School wrote as follows to William R. Shipman, who was then Dean of this institution. "I consider his educational training as thorough and perhaps broader than that of the average man entering college, but in many ways he is a boy of eleven. If you can consider his age in some ways (not in educational standards) I am sure he will get along all right."

Dean Shipman accepted the boy, and the problems which his age presented to the College were satisfactorily adjusted by having his family move to the vicinity of the College so that he could live at home during his college course. He received fifteen Carnegie units in entrance credits, and pursued a college course for three years at

Tufts College, receiving the degree of A. B. in June 1909. This degree was awarded "cum laude," and he received honorable mention in Mathematics.

His course while at Tufts was as follows:

	Semester Hours
Latin	12
Greek	24
French	6
German	12
English	6
Philosophy	18
Economics	6
History	6
Mathematics	18
Physics	6
Chemistry	9
Biology	<u>6</u>
Total	129

He attained the following grades:

- A in 51 semester hours
- B in 69 semester hours
- C in 9 semester hours

His major department was Philosophy, although he did a great deal of work in Mathematics.

The instructors at Tufts College found him better than the average student in classroom work. In the Department of Chemistry the first subject which he pursued was Chemistry 10, which ordinarily requires three subjects in the department as prerequisites. The fact that he obtained A in this subject shows that he was capable of doing the work without having formally studied the usual prerequisites. The only

criticism which the Tufts College faculty has ever made against the boy was the fact that he was immature physically. There seems to have been no question concerning his mental development.

(Signed) FRANK G. WREN,

Dean.

BOONTON RADIO
Corporation

TELEPHONE BOONTON 8-3200

BOONTON, NEW JERSEY, U. S. A.



August 8, 1952

Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Attention: Professor Norbert L. Wiener

Dear Sir:

The Institute of Radio Engineers, North Jersey Subsection, comprises a rather large and diversified group of professional electronic engineers working in the fields of research, development, education and production throughout the North Jersey area and holds monthly technical meetings throughout the Winter season for the purpose of presenting outstanding papers in the field of science and engineering.

It is indeed a pleasure to advise you that a large group of our membership, including several distinguished members of the Bell Telephone Laboratories, have requested us to invite you to offer an informal paper on the subject of Cybernetics at our October meeting to be held on Wednesday, October 8, 1952.

There is a great deal of intense interest in this new field in which you have so ably pioneered and we would regard it both a pleasure and an honor to have you as our guest speaker. Many of us have remembered your lectures during our stay at MIT and look forward eagerly to your acceptance.

Would you please favor us with your early reply so that we may make the necessary arrangements? We suggest that should you accept our invitation you may wish to plan to arrive in New York at approximately 4:00 P.M. on Wednesday, October 8, and return on the sleeper leaving New York at midnight.

Thank you for your consideration of this matter and let us hope that we may have the pleasure of receiving you as our guest.

Very truly yours,

BOONTON RADIO CORPORATION

H. J. Lang
H. J. Lang
Sales Engineer

HJL:mb

[ans 8/15/52]

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Herrn
Professor Norbert Wiener

53, Cedar Road
Belmont, Mass.

Luftpost

Ihr Zeichen

Ihre Nachricht vom

Unser Zeichen

Datum

Dr.V/st

8.8.52.

Hochverehrter Herr Professor,

in wenigen Wochen wird die deutsche Ausgabe Ihres Werkes
"Human Use of Human Beings" unter dem Titel

"Mensch und Menschmaschine"

in meinem Verlage erscheinen. Für bestimmte Propaganda-
maßnahmen ist es von großem Vorteil, ein Bild des Autors
mit zu verwenden. Beispielsweise haben wir Ende September
hier die Buchmesse. Viele Sortimentler werden unsere Aus-
lagen besuchen. Bei dieser Gelegenheit zeigen wir gerne
unsere Autorenbilder.

Leider steht uns für diesen Zweck ein Photo von Ihnen
nicht zur Verfügung. Herr Professor Walther, Darmstadt,
an den wir uns deswegen wandten, empfahl uns, Ihnen
unsere Bitte nach einem Photo von Ihnen unmittelbar
vorzutragen.

Wir wären Ihnen, hochverehrter Herr Professor, außer-
ordentlich dankbar, wenn Sie uns ein Photo von Ihnen
freundlichst zukommen lassen wollten, und empfehlen uns

mit ausgezeichnete Hochachtung

ALFRED METZNER VERLAG

*Trans. of Science ed. of The Human Machine
Sargent 1/2*

Wiener

(Dr. Voigt)

[ans 8-24-52]

August 11, 1952

Commander, USNOTS, Pasa Annex
3202 East Foothill Blvd.
Pasadena 8, California

Attn: F.R. Marshall

Dear Sir:

Professor Wiener has asked me to thank you for your request for a reprint of his paper, "Comprehensive View of Prediction Theory." I am sorry to say that there are no reprints of this paper available. However, if copies of the paper are made in the future, one will be sent to you.

Sincerely yours,

Mrs. G.B. Baldwin
Secretary to Prof. Wiener

COPY

So Tamworth, N. H.
August 11, 1952

Miss Eleanor Farnham
Director of Publicity
Western Reserve University
Cleveland 14, Ohio

Dear Miss Farnham:

I am enclosing the glossy photographs for which you asked and the biographical material. I believe this will cover everything you need. Should it not, I will not be available at my present address for two weeks, when I return from an auto trip.

Sincerely yours,

Norbert Wiener

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August 12, 1952

Mr. Russell L. Ackoff
Department of Engineering Administration
Case Institute of Technology
Cleveland 6, Ohio

Dear Sir:

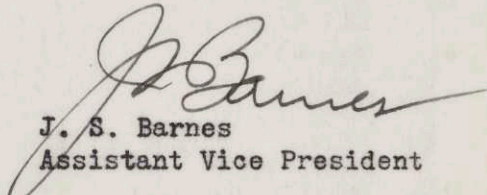
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Sincerely yours,


J. S. Barnes
Assistant Vice President

Deming, SOME THEORY OF SAMPLING, 73 words from pp. 548-49, 25 words from p. 15.
Wiener, CYBERNETICS, 114 words from p. 9.

[see 8-24-52]



SIMON AND SCHUSTER, INC.

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ROCKEFELLER CENTER, 630 Fifth Avenue, New York 20 • TELEPHONE Circle 5-6400

August 12, 1952

Dear Dr. Wiener:

Thank you very much for the copy of STRAY LEAVES FROM MY LIFE by your father. Is this all that he ever wrote of it? It is a most interesting document.

I shall follow your instructions in regard to the inserts, and as soon as there is something to bother you with in the way of galleys, I shall do so. This, however, will not be for some weeks still.

Very sincerely,

Dr. Norbert Wiener
South Tamworth, N. H.

hws:lf

[ans 8/24/52]

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(15)

W. F. MARSHALL, PRESIDENT

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NORBERT WIENER, DEPT OF MATH=

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RE OUR LETTER OF JULY 23. NEED PHOTOGRAPH AND
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CLEVELAND COLLEGE ELEANOR FARNHAM
DIRECTOR OF PUBLICITY=

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

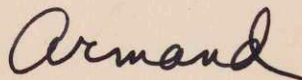
August 13, 1952

Prof. Norbert Wiener
So. Tamworth, N.H.

Dear Prof. Wiener:

I hope the enclosed has not seemed too long a time in coming. I wanted to make sure I understood it myself before writing it up. My attempts in this direction resulted in a number of comments added to the outline, which I hope won't appear too gratuitous.

Sincerely,



Armand Siegel

AS:h

p.s. I am leaving for a brief vacation August 14, and will be back August 26.

My best regards to Mrs. Wiener.

A.S.

[ans 8/27/52]

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

August 14, 1952

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Professor Wiener:

I have been working in the Math Department during the past two weeks while Miss Goodwin has been on vacation. Hence, I was here when the enclosed telegram came this morning.

I have made a copy of some biographical material I put together last winter. I am enclosing it for you to check over before sending it to Cleveland. I looked for a publicity photograph in your files and didn't find one--it would probably be a good idea to have such a photo taken, wouldn't it?

I am so glad that you are feeling more "like your old self" and are planning a couple of lectures during the fall term. I'm sure the summer has been a restful one for you.

I am planning to work with you through the fall semester, but I shall write to you about this within a day or two. So I am looking forward to seeing you in fine fettle about the middle of September.

Sincerely,

Harriet

Mrs. G.B. Baldwin

p.s. My warm greetings to Mrs. Wiener!

[Ans 8/24/52]

August 14, 1952

Professor Norbert Wiener
South Tamworth
New Hampshire

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Sincerely,

Mrs. G.B. Baldwin

p.s. My warm greetings to Mrs. Wiener!

So Tamworth, N.H.
August 15, 1952

Miss Diana Bennett, Representative
National Better Business Bureau, Inc.
Chrysler Building
New York 17, N. Y.

Dear Miss Bennett:

I know nothing of the organization which calls itself National Cybernetics Company. I would advise you to be extremely careful and suspicious of any organization using cybernetics in its name. Although this use is not necessarily fraudulent in as much as I devised the word cybernetics as a common noun and not as the equivalent of a trade mark. Nevertheless, the use of the word without my consent or at ~~least~~ consultation, is suggestive of a desire to play on my presumed approval of the project and is not exactly the best recommendation possible of sincerity. You are safe in applying this principle to any or all organization using this term in their name or publicity. In as much as I have no connection with such industrial organizations and have never been consulted by any with respect to the use of the word.

Sincerely yours,

Norbert Wiener

P.S. I have an extensive theoretical correspondence with various people on cybernetics matters. It is quite possible that some of these letters have been written on the stationery of commercial firms. However, as it has always been my intention to treat these letters as purely scientific inquiries and as conveying no right for the implicit or explicit use of my name, it is possible that some of these persons may use these letters illegitimately to imply that I have approved of their commercial undertakings. If this has been done it is a matter of deliberate misunderstanding or even of fraudulent use, and I assume no responsibility whatever for their conduct. I find this extremely distressing, for it will force me to be more careful in the future in correspondence which I have always conceived to be my duty and etiquette as a scientist.

N. W.

[ans 8/20/52]

So. Tamworth, N.H.
August 15, 1952

Mr. H. J. Lang
Sales Engineer
Boonton Radio Corporation
Boonton, New Jersey

Dear Mr. Lang:

Under ordinary circumstances I would be very much interested in the address on cybernetics of which you are writing. As things are, I am tied up for the preceding day and evening for an address at the College of Physicians and Surgeons in Philadelphia, and for the following day, the ninth, at the meeting of the Optical Society in Cambridge. While it may be physically possible for me to do all these in succession, it would be extremely fatiguing and therefore unjust to the other groups to which I have already made commitments.

I have found it absolutely necessary to protect myself by not giving more than three or four talks a term, and because of this any request for my services should be made at least six months in advance. I am sure you will understand my quandary

Sincerely yours,

Norbert Wiener

4220 Dresden Street
Kensington, Maryland
August 16, 1952

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

Dear Dr. Wiener:

I have been quite interested in doing some work for a Masters Thesis in electrical engineering on the topic of "Electronic Means of Reading Type-Printed Information".

I have read your book "Cybernetics", and have noted your reference to the work of Dr. McCulloch on this subject. It is for this reason that I am writing to you. I thought perhaps you would know of some available reference sources and possibly have information on the latest accomplishments in this work.

Thank you for any aid you can give me on this subject.

Very truly yours,

Donald Reiser

Donald Reiser

[ans 8/24/52]

So Tamworth, N.H.
August 18, 1952

S/Sgt. Harvey E. Diehl
584th A.F. Band
Eglin A.F. Base, Florida

Dear Mr. Diehl:

I think it is too soon in your career to tie your entire future definitely to cybernetics without learning more both of the future of the subject and of your own aptitudes. All the plums in the subject will go to those with a certain minimum of mathematical training, and I do not wish to encourage anyone to go into the subject who is not willing to do this. On the other hand for the present and a considerable period in the future, any man with a sound mathematical training need not fear unemployment. The government agencies and a good many private corporations are looking for such men and are not able to find enough of them. Therefore, if I were in your position, would spend the next few years in getting a sound training in the elements of higher mathematics. There are a good many places in the country which give such a training. I am naturally prejudiced in favor of my own department, but if you wish a list of other places as well, Harvard, Princeton, and Chicago are among the leaders. By the time you have this training, it will be worth while to consider whether cybernetics is the field for you; and the organized treatment of the subject will have progressed sufficiently far so I can give you more significant advice.

Sincerely yours,

Norbert Wiener

So Tamworth, N.H.
August 18, 1952

Dr. Alfred Moldovan
Kings County Hospital
Calrkson Avenue
Brooklyn 3, N.Y.

Dear Dr. Moldovan:

I am away on vacation and shall attend to sending you the necessary literature when I get back about the middle of September. Meanwhile I should like to tell you that I think your training is such as to make cybernetics a perfectly practical field for you. I suggest that you attend my lecture at the College of Physicians and Surgeons in Philadelphia on October 7. I shall discuss some of the problems then, and shall be glad to have a word with you as to where you might best work with advantage to you in acquiring future knowledge in cybernetics. I suggest that you get in touch with Dr. Gray Walter of the Burdon Neurological Institute at Stapleton near Bristol, England. He can also give you advice in the matter.

Sincerely yours,

Norbert Wiener

So. Tamworth, N.H.
August 18, 1952

Mr. Gerard Piel
Publisher, Scientific American
2 West 45th Street
New York 36, N.Y.

Dear Mr. Piel:

I wish to acknowledge receipt of your generous check for such services as I may have made for the number of the Scientific American devoted to the subject of the automatic factory.

Sincerely yours,

Norbert Wiener

So Tamworth, N.H.
August 18, 1952

Miss Helen Slade
The Analysts Journal
400 East 57th Street
New York 22, N.Y.

Dear Miss Slade:

I regret that my schedule of writing is about full up. I am going back to spending my time in the fundamental mathematical research without which cybernetics is nothing but a slogan, and I intend to reserve my writing on the subject for some years in getting out a definitive treatise on cybernetics.

I greatly appreciate your kind words on my work.

Sincerely yours,

Norbert Wiener

So Tamworth, N.H.
August 18, 1952

Professor Marshall H. Stone
Department of Mathematics
The University of Chicago
Chicago 37, Illinois

Dear Stone:

I am on vacation, and to be precise, on a tour of t
of the Gaspé. I therefore will not be in a position
to give you the list of mathematicians for which you
ask until I return to Cambridge about the middle of
September. In principle I am very much interested
in the program on transport phenomena, and 1954 is
sufficiently far away, so that I can put the meeting
on my list in a preliminary way. In the mean/time
I am doing a good deal of ~~research~~ research on the connection
of stochastic phenomena with quantum theory and light
theory, and I believe that I shall have a good deal
to say about these things before the meeting.

My wife joins me in my best wishes to you and
your family.

Sincerely yours,

Norbert Wiener

[enc 8/22/52]

So. Tamworth, N.H.
August 18, 1952

Dear Mr. Wilson:

It is always pleasant to get fan mail such as yours. I shall soon be busy writing up what I hope will be a definitive treatise on cybernetics, and I am particularly occupied at present with what one may call the cybernetics of experimentation. I think there is pay dirt there concerning the refinements of quantum theory. Otherwise I am busy restoring my ravaged front yard against the intrusion of inveterate mousetrap fanciers.

Sincerely yours,

Norbert Wiener

Valencia . Aug. 20. 1952.

Dear Dr. Wiener —

You will recall that I sent you
some work concerning the closure of
the translations of a function of
 $L^p(-\infty, \infty)$ when $1 < p < 2$ a
month or so ago. Since that time
I have been corresponding with
Dr. F. A. Smithey of Cambridge
University who tells me that I. A.
SEGAL had shown the existence of
functions of L^p . ($1 < p < 2$)
whose Fourier transforms vanish

almost nowhere but the set of finite
linear combinations of their trans-
lations is not dense in L^p . (The
reference is Proc. Nat. Acad. Sci. 1944).

I have not been able to discover
any flaw in my work but doubtless
there is some. Since Segal is a
careful worker (I have not yet
seen his paper).

I would be grateful for any
comment you may have on the paper.

Yours truly -

Henry P. McKean Jr.

110 BARCLAY'S BANK

BENE'T ST.

CAMBRIDGE, ENGLAND. + .

[ans 9/22/52]

NATIONAL BETTER BUSINESS BUREAU, INC.

Affiliated with Better Business Bureaus in Principal Cities of the United States and Canada

CHRYSLER BUILDING, NEW YORK 17, N. Y.

Telephone: MURray Hill 6-3535

EDWARD L. GREENE
President



August 20, 1952

Dr. Norbert Wiener
South Tamorth, New Hampshire

Dear Dr. Wiener:

Thank you for informing us that the National Cybernetics Company is unknown to you.

Your viewpoint concerning the use of the word "cybernetics" in its trade style by any firm, without prior consultation with you, is appreciated. In our own case, while the subject matter of Dr. Soble's letter of solicitation might eventually have led us to check with you, the use of "cybernetics" in the company name resulted in a much more immediate association with your name and with the thought that you, as a leading investigator in cybernetics, would likely be familiar with any newly begun commercial application of the principles of cybernetics.

We would have to assign our inquiry of you to this association on our part since, in his letter of solicitation, Dr. Soble did not in any direct way refer to you as one in any way connected with or endorsing his project. We include a copy of the original solicitations letter sent by National Cybernetics Company, for your interest.

Should information concerning this firm be developed which would be of interest to you, we will write you again.

Cordially yours,

Diana Bennett

Representative

Diana Bennett
EB

NATIONAL BETTER BUSINESS BUREAU, INC.

Affiliated with Better Business Bureaus in Principal Cities of the United States and Canada

CHRYSLER BUILDING, NEW YORK 17, N. Y.



Copy of Letter of Solicitation Sent by
National Cybernetics Company, Box 661
Lynbrook, Long Island

Cybernetics is the science of communication and control. We have done work for the General Electric Co., and at present we are doing work for the U. S. Government.

By applying principles of guided missiles, we have designed, applied for patents, and built preliminary models, of electronic attachments to cutting machines and other machinery in the needle trades, so as to make clothing automatically.

WITHOUT HUMAN DIRECTION

The engineers on our staff have written books on advanced topics of cybernetics, taught at universities, and been appointed to national committees.

This company has budgeted \$100 per day for direct labor and materials on the cutting-machine project. The job is expected to be perfected in three months, and the product marketed within a year.

If you are interested, we ask you to underwrite one tenth our budget for the cutting machine project, that is, ten dollars per working day for four months. In return, your closest competitors will not have such equipment.

Yours truly,

A. Soble, Ph.D.
General Manager

Ullevål, Oslo, August 21, 1952.

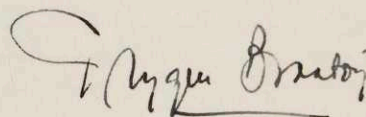
Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge 39, Mass.
U.S.A.

Dear Professor Wiener,

You wrote me a very nice letter in 1950 acknowledging a copy of a paper on Experimental Neurasthenia and Intellectual Overstrain. (J N M D Vol. 105, May 1947). Since then I have read "The Human Use of Human Beings" and I wonder if the functional antithesis between "voluntary" and postural reactions postulated in the enclosed paper fits the point of view developed in Chapter XI p. 190. (If the essentials of this chapter has been developed elsewhere in greater detail accessible to a medical (non-mathematical) reader I should be very grateful for hearing about it.)

(My "Arm-neurosis" paper was written in 1948 and presented to a non-specialistic audience which certainly makes it too verbose for a highly trained reader.)

Very sincerely yours



Trygve Braatøy, M.D.
Head of The Psychiatric Department,
Ullevaal General Hospital, Oslo, Norway.

In 1950 I was at The Menninger Foundation
Topeka Kansas.

[ms 9/22/52]

COPY

Ullevål, Oslo, August 21, 1952

Professor Norbert Wiener
M.I.T.
Cambridge 39, Mass.

Dear Professor Wiener:

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My "Arm-Neurosis" paper was written in 1948 and presented to a non-specialistic audience which certainly makes it too verbose for a highly trained reader.

Very sincerely yours,

Trygve Braatoy, M.D.
Head of the Psychiatric Department
Ullevaal General Hospital, Oslo.

In 1950 I was at the Menninger Foundation, Topeka, Kansas.

(Enclosure: Psychology vs. Anatomy in the Treatment of "Arm Neuroses" with Physiotherapy. Reprinted from The Journal of Nervous and Mental Disease, Vol. 115, Mar. 1952.)

{ans 9/22/52}

SIEMENS & HALSKE AKTIENGESELLSCHAFT

WERNERWERK FÜR FERNMELDETECHNIK

Zentral-Fachbücherei München

To

Mr. N. Wiener

Massachusetts Institute of Technology

C a m b r i d g e M a s s . U S A

Ihre Zeichen

Ihre Nachricht vom

Unsere Zeichen

Hausanruf

Ⓜ MÜNCHEN 25
Hofmannstraße 51

ZFb.Mü/v.B.

August 21st 1952

Betrifft

Re: Eighteenth Annual Meeting of the Southeastern Section of the American Physical Society.

Dear Mr. Wiener:

We read in the Physical Review, 87, No. 1, July 1, 1952 on page 221 that you presented on the eighteenth annual meeting of the Southeastern Section of the American Physical Society, North Carolina, on April 10 to 12, 1952 a paper titled:

"Quantal and Non-Quantal Uncertainties" .

This subject is of great interest to us and we, therefore, would appreciate to obtain a copy of your paper. Should a copy not be available you would oblige us by giving an information whether the paper will be soon published and in which magazine. Expressing our sincerest thanks for your kindness and all your trouble

Very

truly Yours

SIEMENS & HALSKE
AKTIENGESELLSCHAFT
Zentral-Fachbücherei
München

Rasch.

(Dr. Rasch)

P.S. Enclosed you will find a German article of Professor Küpfmüller "Kanalkapazität und Laufzeit, throwing somer further light on these interesting questions and which may be of interest to you.

[ans 9/18/52]

Fernsprecher
Ortsverkehr 7191
Fernverkehr F 40 u. F 93

Fernschreiber
063721
siemens wwf mch

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München

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Bayer. Vereinsbank,
München, Konto-Nr. 203 849
Bayer. Staatsbank,
München, Konto-Nr. KK 90 153/Export

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Betrieb München 96 08

Güterstation
München-Mittersendling

THE UNIVERSITY OF CHICAGO
CHICAGO 37 • ILLINOIS
DEPARTMENT OF MATHEMATICS

August 22, 1952

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

Dear Norbert:

Thank you very much for your letter of August 18. I shall await your further comments on the matter with interest. I had a useful conversation with Chandrasekhar about the matter just the other day.

I am sure that the I.M.U. will support the conference on transport phenomena, but it is not clear at the present time just what form this support should take. In particular it is anything but clear how the conference will align itself with reference to the different aspects of transport phenomena. I am inclined to think that the presence of a few mathematicians capable of calling attention to mathematical methods which might be helpful in the solution of a wide variety of problems would be the best contribution to the success of the conference.

Sincerely yours,



Marshall H. Stone
Acting Chairman

MHS:jlb

[ans 9/17/52]

So. Tamworth, N.H.
August 23, 1952

Mr. Donald L. Herr
605 San Vicente Boulevard
Santa Monica, California

Dear Mr. Herr:

I have not any right to give a snap explanation of the leaf formation which you show in your photograph. If I were to give a good guess, it would be that phyllotaxis is a spiral phenomenon; and that if it were conjoined by something that aborted the growth of one side of the stem, or with another spiral phenomenon, let us say associated with the fibrovascular bundles, it might readily produce spatial beats. However, don't take this too seriously.

Sincerely yours,

Norbert Wiener

[ans 8/23/52]

So. Tamworth, N.H.
August 23, 1952

Mr. Hyman Olkon
1446 Tuckerman Street, N.W.
Washington, 11, D.C.

Dear Mr. Olkon:

I should like to advise you that claims such as having explained the entire mechanism of thought are so general and so unlikely to be realized in detail that they represent the worst possible introduction to a source of funds. There is a great deal of work that can be done on the nature of thought, but it is almost certain that anything of value will be fragmentary and consciously fragmentary for a long time to come. The world contains very few important puzzles that are to be solved by the turning of a single key; and claims of this sort are an indication rather of the enthusiastic amateur than of the man who has enough behind him to carry his program effectively.

Sincerely yours,

Norbert Wiener

So. Tamworth, N.H.
August 24, 1952

Dear Ashby:

Your book has just come and while, of course, I have not had time to look into it carefully, it is a must on my reading list in the immediate future. I shall soon be undertaking a treatise on cybernetics and a critique of your ideas will play a prominent part there. Meanwhile I am busy on the cybernetics and quantum theory.

Sincerely yours,

Norbert Wiener

80. Tamworth, N.H.
August 24, 1952

Dear Mrs. Baldwin:

The biographical material of which you speak has already gone to the Cleveland people together with the photograph. I just had a letter from Siegel which indicates that he is making good headway with our joint work. I shall be back about the fifteenth of September, but I can assure you that you will find very little accumulation of material that needs to be gone over. You will however find that by that time the first proof sheets of the autobiography will start coming in.

Hoping that you have had a pleasant summer, my wife joins me in greeting both of you.

Sincerely yours,

Norbert Wiener

So. Tamworth, N.H.
August 24, 1952

Dear Dr. Bronowski:

I have just received my manuscript with your covering letter. Meanwhile a much revised and improved version has been accepted by Simon and Schuster and is nearly ready for the press.

As to the book I have promised you, I am going ahead with it in the intervals of my work on a new treatise on cybernetics. In the letter I have already made much headway on the cybernetics aspects of quantum theory.

My wife and daughter join me in sending you our best regards.

Sincerely yours,

Norbert Wiener

So. Tamworth, N.H.
August 24, 1952

Mr. J. S. Barnes
John Wiley & Sons, Inc.
440 Fourth Avenue
New York 16, N.Y.

Dear Mr. Barnes:

This is to acknowledge the receipt
of the copy of your letter to Mr. Ackoff
and to express my concurrence in your
action as far as it concerns me.

Sincerely yours,

Horbert Wiener

So. Tamworth, N.H.
August 24, 1952

Mr. Donald Reiser
4220 Dresden Street
Kensington, Maryland

Dear Mr. Reiser:

While it is quite possible that some electric aid may be made for the blind, which will also have typewriting information as a sort of special code, I have very little hope for the construction in the near future of any apparatus which will read type as ordinary speech. I am not in touch with the existing literature on the subject.

Sincerely yours,

Norbert Wiener

So. Tamworth, N.H.

August 24, 1952

Dr r Siegel:

I have your letter and the abstract of Fenyes. I am much gratified with the work you have done and with the Fenyes paper. It seems to me to lead directly down our alley, and although it is a satisfactory paper, I think it will become more clear when we develop our point of view further.

Here I want to make some remarks. In the first place, stochastic processes are not merely to be associated with parabolic partial differential equations, but also with hyperbolic differential equations. Here the short time effects will always show a carry-over from time to time, but the long time effects may and generally do approach something of the character of the solutions of parabolic differential equations. The ordinary wave of equations in an ~~ordinary~~ odd number of space dimensions gives waves with both a well defined wave front and wave rear, as you can see from the ordinary form of the Huyghens principle. Now the Huyghens principle in an even number of space dimensions yields waves with well-defined wave front, which however taper off to zero in the rear. Such waves can be represented not as in the ordinary wave equation case by rays independent of one another, but by a diffusion process in which unlike the ordinary Brownian motion the *innovation* is at the level of the time derivative of the motion and not of the motion itself.

In this way it is possible to build up a relativistically invariant stochastic theory, and I am clear on the main outlines of this. In order that we may be able to work out together when I come home, I recommend that you read the chapters on hyperbolic differential equations in Courant's Cour d'Analyse, paying particular attention to what he has to say about the Reimann function. You will find more detailed work on hyperbolic partial differential equations in the various writings of Hadamard.

I want to call your attention to the various forms of five dimensional quantum theory, which have been invented. Here the multiplier I have appears as a differential operator on a new variable λ , which only occurs in the solution of the equation as a factor $e^{i\lambda}$. Even for the original differential equation in space and time is hyperbolic. The new equation with λ in it will be hyperbolic. It is to this new equation that we apply in the first instance our theory of a generalized Brownian motion.

This gives us a chance to state what the probability amplitude really is in terms of true probability theory. The probability amplitude is the average of the factor at a given point of space-time, where is the real quantity determining the complex coefficient of the solution of that point

~~This gives us a chance to state what the probability amplitude really is in terms of true probability theory. The probability amplitude is the average of the factor at a given point of space-time, where is the real quantity determining the complex coefficient of the solution of that point, whereas the probability is the sum or average of one over all solutions. I shall make this clear to you when I come back. This is the type of explanation which shows why the square of the absolute value of the probability is the probability density. The probability amplitude will satisfy a linear partial differential equation, the Schrodinger equation; why the probability itself contains a suppressed parameter and does not seem at first sight to satisfy such an equation.~~

I agree this is not a very clear explanation. The main idea is clear in my mind and fits very well with my notions on prediction theory, and on reversibility and irreversibility in physics.

I shall be down about the fifteenth of September and shall take up work as soon thereafter as may be convenient to you. I have been resting well on my vacation and have had a most interesting trip with my wife to the Caspe.

With best wishes from house to house, I am,

since eily yours,

Norbert Wiener

So. Tamworth, N.H.
August 24, 1952

Mr. Henry Simon
Simon and Shuster, Inc.
630 Fifth Avenue
New York 20, N.Y.

Dear Mr. Simon:

I am now back after a delightful tour that we made of the Caspe and shall be available for letters or anything else you wish from now on. I shall be back in Belmont by the middle of September.

Here is the budget of things I want to tell you. First: The Stray Leaves From My Life is the only biographical material that my father ever published. Certain elements in the family discouraged his desire to write a full autobiography for fear it might be too revealing in family matters. The correspondence on which an authentic life could really be based has to my knowledge and belief been destroyed. I believe that the only reasons for this extreme reticence on the part of the family were a) the Jewish issue, b) to play down the many controversial aspects of father's attitude, which had not always been easy for the family to live through. If you desire more information concerning father from non-family and relatively unbiased sources, I think that the other place to get it is from Professor Harry Wolfson at Harvard. Father's generation at Harvard has mostly passed away and there were few of the young men who were in close contact with him.

I am leaving the outside material I have sent and how it is to be handled to your discretion. There is only one thing that has come up since. In giving credit in the preface I mention a Mexican lady as having helped me with the manuscript. Her name, I have found out since, is Concepcion Mercado. ^{circumstances of your inner dear}
trouble.

I hope you have had no recollection
Sincerely yours,

Horbert Wiener

So Tamworth, N.H.
August 24, 1952

Herrn Dr. Voigt
Alfred Metzner Verlag
Hebelstrasse 17
Frankfurt am Main
Deutschland

Sehr geehrter Herr Voigt:

Wir haben schon vor einigen Monaten ungefähr die Hälfte des Manuscripts Ihrer Übersetzung von Frau Walther empfangen. Das Manuscript blieb leider eine längere Zeit in Belmont, Mass. liegen, während wir in Mexico waren. Als ich nach Belmont zurückkehrte, war ich zu müde das Manuscript sorgfältig durchzulesen und mit dem Original zu vergleichen. Hier in meinem Sommerhaus in den Bergen haben meine Frau und ich die Musse gefunden mehrere Kapitel sorgfältig durchzulesen, und wir sind mehr als wie zufrieden mit der Art und Weise, in der Frau Walther diese schwierige Arbeit genau und mit in gutem literarischen Stiel getan hat. Also sind wir sicher, dass die übrige Übersetzung auch fertig durchgeführt worden ist.

Ich schliesse zwei Photographien mit ein, die mir sehr gefallen und die, wie ich glaube, Ihren Zwecken angepasst sind.

Mit vorzüglicher Hochachtung

Norbert Wiener

NATIONAL SCIENCE FOUNDATION
WASHINGTON 25, D. C.

August 25, 1952

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

Dear Professor Wiener:

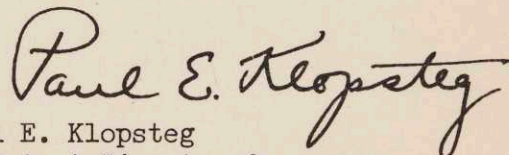
The purpose of this letter is to express, for the National Science Foundation, the appreciation and thanks for the valuable help you have given the staff of the Division of Mathematical, Physical, and Engineering Sciences. Your thoughtful comments aid us greatly in making an appraisal of proposed research projects on which to base recommendations for support.

I should like to mention my personal appreciation also. There are many difficulties in getting a program of research support under way. It would, in fact, have been impossible to do this with objectivity and fairness, with assurance that it is being done well, without the kind of assistance that you have so willingly and generously provided.

One point of concern to me is that we shall not impose upon or unduly burden you. Should it seem desirable for us occasionally to request of you a similar review and appraisal, we hope it may prove interesting rather than onerous; but if it should, in fact, be burdensome, please do not have any embarrassment about telling us.

I hope you may feel the satisfaction that comes from a realization that you are substantially contributing to one of the important activities of the Foundation.

Cordially yours,



Paul E. Klopsteg
Assistant Director for
Division of Mathematical,
Physical, and Engineering
Sciences

answered

MARTIN MENKUS
ATTORNEY-AT-LAW
970 ALLENGROVE STREET
PHILADELPHIA 24, PA.

August 25, 1952.

Professor Robert Weiner,
Dear Sir:

Someone called my attention to your book "The Human Use of Human Beings", because you seem to have made some study of the analogy that seems to exist between a human being with Parkinsonism and a machine in dis-function.

My brother, David, who is only 40 years old, has had this ailment since he was about 28 years old and is now chair-ridden. Actually, he seems to have improved a tiny bit in the last 2 years and I wonder if there is any hope for any further improvement however small.

Do you think that 5 minutes out of every 20 minutes, if spent on an automatic exercise machine might tend to uncloud the confused Postural feedback. Or do you have any other suggestion as to what we might do to improve my brother's case.

I hate to bother a busy man like yourself so I am putting a few 3 x 5 cards in a self-addressed envelope so you can answer in a minimum of time.

Do you feel that there is death of brain tissue and that therefore thought of ultimate cure is hopeless.

May I hear from you,

Very truly yours,
Martin Menkus



Baird Associates, Inc.
BETTER ANALYSIS

UNIVERSITY 4-0101

WALTER S. BAIRD, PRES.
JOHN STERNER, VICE PRES.
FRANCIS CHAMBERLAIN, TREAS.

PRECISION INSTRUMENTS FOR RESEARCH AND CONTROL

THIRTY-THREE UNIVERSITY ROAD
Cambridge 38, Massachusetts, U. S. A.

August 26, 1952

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

Dear Professor Wiener:

When you receive the program for the Fall Meeting of the Optical Society you will find that your name has been listed and the title of your paper as best we could determine on the date of closing.

The abstracts of invited speakers have been forwarded to Wallace Brode who will include them in his announcement of the meeting and in subsequent issues of the Journal where they would ordinarily appear.

I am still hoping that you will have your manuscript complete at the time of the paper so that I can hand it with the others in a bundle to Wallace Brode. It is still my feeling that, if possible, all of the invited papers should be included in one issue of the Journal. We will do the best we can to assist you in making available such comments as will be made at the meeting concerning your paper so that you can reply rebuttal fashion if you desire.

It looks as if this is going to be one of the largest meetings the Society has had. A total of 86 contributed papers were in on the August 18 deadline, and I am sure that if this is any indication of the interest in the meeting it will be not only large in quantity but high in quality.

Kindest regards.

Very truly yours,

Walter S. Baird

WSB/kvs



SIMON AND SCHUSTER, INC.
publishers

ROCKEFELLER CENTER, 630 Fifth Avenue, New York 20 • TELEPHONE Circle 5-6400

August 26, 1952

Dear Dr. Wiener:

Thank you for the information about your father's autobiographical notes. The situation being what it is, I don't see that there is anything we can do about it. Too bad I did not get on his trail personally some 20 years ago.

I shall see to it that Concepcion Mercado is properly acknowledged, and as soon as we have proofs to bother you with, I shall bother you with them.

Very sincerely,

Henry P. Simon

Dr. Norbert Wiener
South Tamworth, N. H.

hws:lf

OPTICAL SOCIETY *of* AMERICA

ARTHUR C. HARDY, *Secretary*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE 39, MASSACHUSETTS

August 28, 1952.

Professor Norbert Wiener,
South Tamworth,
New Hampshire.

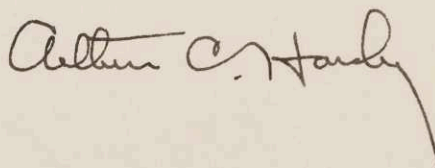
Dear Professor Wiener:

The program of the forthcoming O.S.A. meeting is with the printer, and you will receive a copy in due course. When you do, you will note that your invited paper is in a group of twenty-five-minute papers.

The purpose of this letter is to tell you that, in the material supplied to me by the Chairman of the Program Committee, your paper had been set down for thirty minutes. However, when I came to make up the dummy, it would have been very awkward to have listed your paper as thirty minutes and the others as twenty-five, and I decided to call them all twenty-five-minute papers.

By copies of this letter, I am reminding the President of the Society and the Chairman of the Program Committee that the "Invited (25 minute) Papers" appearing at the head of the session does not mean what it says in your case.

Sincerely,



ACH:Bo
cc: Same at M.I.T.
Brian O'Brien
Walter S. Baird

OPTICAL SOCIETY *of* AMERICA

ARTHUR C. HARDY, *Secretary*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE 39, MASSACHUSETTS

August 28, 1952.

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P
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Brian O'Brien
Walter S. Baird

YALE UNIVERSITY
DEPARTMENT OF PSYCHOLOGY
333 CEDAR STREET
NEW HAVEN · CONNECTICUT

August 29, 1952

Dr. Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

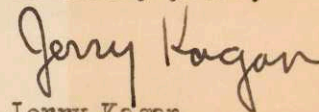
Dear Dr. Wiener:

As an essential part of our program each year, we ask distinguished lecturers to address our Psychology Colloquium, a graduate-student sponsored lecture series attended by faculty and students of the Department of Psychology. We would be honored if you would consider speaking to us during the academic year 1952-53.

Our plan is to hold these meetings on alternate Wednesday afternoons at 4 o'clock and if you are able to come we shall be happy to have you choose 3 possible dates which would be convenient for your schedule from the list of dates I am enclosing. We can then agree on a definite date from your preferences.

I hope very much that you will be able to come.

Sincerely yours,



Jerry Kagan
Colloquium Chairman

Enclosure.

YALE UNIVERSITY
DEPARTMENT OF PSYCHOLOGY
333 CEDAR STREET
NEW HAVEN · CONNECTICUT

Dr. Norbert Wiener

1952-53

November	5: 19:
December	10:
January	7:
February	11: 25:
March	11: 25:
April	22:
May	6:

August 30, 1952

To Ercole Rose, Jr.
40 The American Society of Mechanical Engineers
29 W 29th St., New York 18, N.Y.

Dear Mr. Rose

Enclosed find the MS of my paper for my December 2^d talk to the ASME at New York. In as much as you have augmented your original request for a talk to cover an advance MS of the talk, and in view of my isolation here on my vacation and the fact that all the burden of typewriting falls on my wife and myself, I cannot accede to your request to send you the MS in triplicate. You are in a far better position to have the necessary secretarial work done. Here I must protest vigorously against the tendency of various societies and groups to request a lecture, and then to impose the writing of an article and a number of other onerous conditions to what is already a free gift made to them.

I shall probably be able to stay for the evening meeting. I am away from my files and correspondence, and shall leave the matter of invited guests entirely in your hands.

Sincerely yours

Norbert Wiener