Dear Herbert

I read something which may be of interest to you or perhaps you already know of it.

In a volume of Thorpe, Wm H on Learning and Instinct in Animals – Harvard Un Press 1956, he describes the ideas of J. W. Pringle & refers to a paper by Pringle On the parallel between learning and evolution – Behaviour, 3, p 174-275. 1951 Pringle has offered a theory of learning which employs the concept of coupled cells which oscillate and by their oscillation get into phase – which seems similar to your concept. In the Thorpe book on p 143-8 he gives a series of diagrams to show how Pringle has attempted to deal with the problem

I don't know the journal Behaviour but perhaps you can locate it. The Thorpe book is in the Medbrea, on the top floor in the Archives room. Thorpe is concerned with how animals (and he reviews the material in a way of general) perceive time and space – suggests that animals orient spatially to get their temporal orientation etc. Thorpe praises Pringle for suggesting that temporal cycles may provide an economical process for learning and eliminate the need for spatial location in the nervous system.

If you do not know of Pringle's work, you will find it of interest as related to your summer work.

Larry Frost.

#16 Kentbury Way,
(Bethesda)
Washington 14, D.C.

Dr. Norbert Wiener,
   M.I.T., Cambridge.

Dear Doctor Wiener,

   To you, I am a stranger; but to me, you are a special and greatly respected friend, due to my having looked into your innermost self through your "Ex-Prodigy", which I am re-reading at the present time, and to the fact that your father was my beloved and respected teacher of German for 3 years at the Kansas City Central High School. He was very exacting of us, but invariably pleasant, kind and patient with us. His loss of temper with you at times, I am certain was motivated by his tremendous pride in you as his son, his appreciation of your brilliant mind and ambition for you in your scholastic attainments.

Brevity is not one of my virtues, so I trust you will not be bored by this letter from one unknown to you.

Your father would not allow us to say more than <u>one</u> English word at a time in class, and that only to say in <u>German</u>: "Wie sagen sie <u>desk</u> (or perhaps <u>clothing</u>) auf Deutsch?"

I <u>resent</u> very much anyone telling you that your father spoke English with an <u>accent</u>. On the contrary, he spoke beautiful, <u>perfect</u> idiomatic English, with correct pronunciation, most <u>meticulous enunciation</u>, never making an error in grammar or construction of sentences. In fact, he spoke better English than most fairly-well educated Americans that I have known over a long life. Only one thing in his English: He in some words trilled his r, in the manner of Eastern and Southern Europeans. For instance, in the word brilliant a slight trill or rolling of the <u>r</u>.

He was the greatest linguist and philologist that I have ever known or known of. At the time we were privileged to be his students, 1890-91-92, he could read, write and speak 13 languages fluently; could read, write and speak some in 25 languages; and showed a true sense of humor and modesty when he told our class of his beginning his interest in Chinese — He acquired a Chinese primer. After some hours of study, he went in one morning to his Chinese laundry, where in his best manner, he said to the Chinese owner, "Good-Morning" in Chinese — Twice the Chinaman said in English, "What did you say"? Again your father uttered his Chinese "Good-morning!" Then the Chinaman said, "Speak English, please!" When the situation was explained to him, he told your father that you could say the exact same syllables in Chinese, with varying inflections, and they would mean entirely different things — So he your father and we all had a good laugh together. Thus began his acquisition of another language!

We all felt sad when we lost him
through his call to teach at the State
University of Missouri. Later, we were
so proud to read in the Kansas City Star
of his being called to Harvard, to the
Chair of Slavonic Languages.

The City Librarian in Kansas City, Mo,
once told me of him. How he came often to
the library, and drew out books for which
she had <u>never had a call in 25 years</u> as
librarian, and many other books for which
in 25 years she had had only 3 or 4 calls.
She became interested in this young man,
and observed that he was selling fruit on
the street. In the Library Bldg, were the
rooms of the Board of Education, to whose
members she spoke of this exceptional young
man. They told her to bring him in the
next time he came to the Library, which
she did. Later, as a result, he was
teaching German in the High School –
thence to Columbia University, and from
there to Harvard. Thus, "by his own boot-
straps", to use the English idiom, did he "lift
himself" by his own intellect and scholastic
achievements, from adversity to the greatest

heights attainable in the intellectual life
and social strata of America, with the
attendant prosperity, and honor of
fathering and instructing one of the
greatest minds of our era! May God
bless him and keep him (and you)
is my frequent prayer.

2 years ago this summer, my son
Adelbert R. Baker (now in his 50's), his wife
and I toured New England. In Boston
and Cambridge an extensive effort was
made by me to find you, but eventually,
I learned that you had "gone to New
Hampshire for the summer" — (perhaps
to Sandwich or Tamworth?) We saw
Mount Washington, the Indian head and
the Notch, also going up to the mountain
top in the strange little car. We loved
the forests with all those lovely white-
trunked birch trees, and all the lovely
sea-coasts, harbors, coves and rocks. It
must be wonderful to spend an entire
summer among them. I, too, am a
great lover of Nature, and of all the beauti-
ful things God has given us to enjoy, but am

too old now to climb as I used to do —

As to ancestry, I come of generations of cultured ancestors who came to America mostly from 1632 forward, the latest to come being my French great-grandfather Jean Baptiste Regnier, a brilliant scholar educated at the "Académie Française", who came to America in 1790, and later became one of the famous "pioneer physicians" written of in some Massachusetts annals concerning some 5 or 6 early physicians in this country.

Your father always pronounced my maiden name in the French way, ( Miss Ren "yea" ) and told me it meant Ruler. There is a family tradition that great-great grandfather also named Jean Baptiste Regnier, sprang from a family who ruled some small European Principality — (Family records all lost at the time of the depredations and disorders of the Reign of Terror in Paris, where great-grandfather was born Dec. 25th, 1769.) He practiced medicine in and about Marietta, Ohio,

He studied Mathematics, Medicine, Engineering (Civil), Architecture, Literature etc. at the French Academy, planning to make his career in Architecture, but found that his lands in America and those of his compatriots were in unhewn forests along the Ohio River, where they established Gallipolis (French City) Ohio; there being no city near, no saw mills, nor brick kilns, he was forced to abandon architecture, though some years later he built for himself a beautiful chateau, near Marietta, a saw-mill and grist mill at a spot called Regnier's Mills (now Macksburg, Ohio)-

On my mother's side of the family, her ancestor, Nathaniel Foote, the Settler, came from England (1632) first to Massachusetts, then settling in Wethersfield and Colchester, Conn.,

Well, I am certain I have bored you long enough. Please present my compliments and best wishes to your gentle wife - and hoping some day to have the pleasure and honor of meeting you, I am Very Sincerely,

(Mrs.) Gertrude Regnier Baker.

P. S. — Do you have among your father's possessions or address book any letter or address of Ruby Archer, perhaps married in the intervening years? She and I were great friends in school, and your father's 2 top students in our class for 3 years — She later (& then) wrote verses, and eventually published a small volume — I think called "Little Poems" (perhaps not the exact title) I should like so much to find her again if I can — The volume was a rather thin gray-bound volume. If one is among your father's books, perhaps you would be kind enough to send me the name of the Publishers, who could give me the last address they have of hers. This would have been published, I imagine, about 1901 to 1906 — perhaps 1910 or 1911.

I shall appreciate very much if you can furnish me any information concerning her. If so, Thanking you,

Very Sincerely,

Gertrude Regnier Baker.

Rt. 3, Box 464
Albany, Georgia
1 July

Dear Prof. Weiner,

The purpose of my writing is to ask a small favor which I hope you will not mind granting for me. Will you please personally sign the front of the enclosed picture and return it to me? I ask you to sign it on the front so the signature will be visible when the photo is framed. I shall be most grateful if you will do this for me.

Enclosed is sufficient postage for your convenience in answering.

Please accept my best wishes for your future health and happiness, and I sincerely wish you the best of everything in life.

Respectfully yours,
James M. Wiggins
LIEUTENANT (JUNIOR GRADE) - U.S.N.

LTJG. JAMES M. WIGGINS
RT. 3, BOX 464
ALBANY
GEORGIA

[ans 8/2/59]

South Tamworth
New Hampshire
July 1, 1957


Professor P. Masani
Mathematics Department
The Institute of Science
Bombay 1, India

Dear Professor Masani:

Thanks for the corrections on the "Acta Mathematica" paper.
I am making great headway on the book and have discovered some improved
proofs and simplifications of our theorems.  One of the most important
results is that every bounded measurable function is the quotient of
two functions of the class $L^2$.  From this I am able to find the necessary
and sufficient condition for the factorization of a Hermitian matrix of
positive type into two factors only containing positive frequencies.
Of course I am assuming the elements of the matrix are themselves of
class 2.  The condition is that I consider not merely the trace and the
determinant, but all the intermediate unitary invariants.  If any one of
these satisfies our logarithm condition, so do all the earlier ones.
The condition for factorability is that the first invariant not to
satisfy the logarithm condition must be equivalent to zero.  This is, as
I say, necessary and sufficient.

I am sorry that the Rockefeller thing fell through, but you
have probably already heard that we are likely to be able to supplement
the Harvard teaching job by a part time job at Boston University.  Thus
I am counting on seeing you in the fall and on a profitable period of
joint work.

Sincerely yours,


Norbert


NW:jc

Saint Cloud July 2nd 1957
14 Rue Alphonse MOGUEZ

Dear Professor Wiener

I shall attend the URSI meeting this summer
in Boulder (Colorado).
I will make the trip with my wife, and
we are planning a holiday trip, before Boulder,
in Mexico.
Since you used to work with prominent
Mexican people, namely in the "Instituto de
Cardiologia" I dare ask from you an
introduction to such people.
I know the month of August is not very
well chosen in order to meet people in Mexico
City, but we consider going down to Oaxacá
and Yucatan peninsula.
Any advice from you would be welcome.
With my best regards to Mrs Wiener

Very truly yours

Julien Loeb

[ans 7/17/57]

South Tamworth
New Hampshire
July 2, 1957

Mr. Ashley T. Cole
Counselor at Law
30 East 42nd Street
New York 17, New York

Dear Mr. Cole:

Professor Wiener regrets that as a matter
of policy he has decided not to accede to any requests
for autographs, photographs and the like.

While he appreciates the compliment of being
asked, he finds the responsibility of large corres-
pondence excessive.

Sincerely yours,


Janet M. Corliss
Secretary

South Tamworth
New Hampshire
July 2, 1957


Dr. Harold Lamport, Research Associate
Department of Physiology
Yale University School of Medicine
333 Cedar Street
New Haven 11, Connecticut

Dear Dr. Lamport:

          I am at present in the course of writing
a monograph about the frequency analysis of the
electroencephalogram. I probably will not finish
it until the end of the summer and I have not come
to a final conclusion as to where I shall publish
it. I have received a suggestion that I might publish
it in a series of monographs put out by Johns Hopkins
University, but while this is quite possible, this
has not been decided.

          Some time in the early autumn please write
me again and I will tell you what I have done with
the material.

                              Sincerely yours,


                              Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 2, 1957


Mr. Leo Nejelski, President
Nejelski & Company, Inc.
12 East 41st Street
New York 17, New York

Dear Mr. Nejelski:

Many thanks for the copy of your paper
that you presented at the Conference at the New
England Institute for Medical Research and the
accompanying article.  I think we had a very success-
ful meeting and that your introductory talk
highlighted it.

Sincerely yours,


Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 2, 1957

Mr. Jules Wein
Pratt Institute
Brooklyn 5, New York

Dear Mr. Wein:

Many thanks for the fine poem which you have
submitted to me, and for the nice things you have
to say. I am now busy on further literary work up
here in the restful and beautiful scenery of the
White Mountains.

Sincerely yours,

Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 4, 1957

Dean J. R. Dunning
School of Engineering
Columbia University
New York 27, New York

Dear Dean Dunning:

Your conference at Arden House, Harriman,
New York interests me very much and I shall be very
glad to give you a talk.  I feel highly honored by
the request.  I shall be present for the whole
conference.

You didn't ask me for a prepared title at
the present time, but I think that I should like to
emphasize the need of a broad intellectual background
in science and engineering and the impossibility of
good work by a group unless the members of the group
fully understand one another and all have a grounding
extending well beyond the narrow specialty of each.

Sincerely yours,


Norbert Wiener

NW:jc

[ано 9/11/57]

South Tamworth
New Hampshire
July 4, 1957


Dr. James Henry Ferguson
Jackson Memorial Hospital
Miami 36, Florida

Dear Dr. Ferguson:

　　While I have a certain amount of the brain
wave work stowed away in rather casual articles, I am
now busy writing up a definitive paper on the mathematical
side of the subject and it ought to be out some time
this fall.　There is a possibility that it will appear
as a longish monograph or shortish book in a series
published by Johns Hopkins University, but this is
not sure.　Please notify me again in the fall and I
shall try to see that you get a copy.

　　　　　　　　Sincerely yours,


　　　　　　　　Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 4, 1957


Mr. Kozo Momoki, Research Associate
Physics Department
University of Pittsburgh
Pittsburgh 13, Pennsylvania

Dear Mr. Momoki:

        Many thanks for the color slide you sent
me.  I am quite certain that the other man in the
picture is von Muralt.  What a very agreeable
meeting we had, and I hope we run into you again.

                        Sincerely yours,


                        Norbert Wiener

NW:jc

South Tamworth
                                        New Hampshire
                                        July 4, 1957


Mr. Thomas Whiteside
The New Yorker Magazine, Inc.
25 West 43rd Street
New York 36, New York

Dear Whiteside:

     We are up in the mountains having a delightful vacation in the cool
air of North Sandwich.  I hope we may some time have the pleasure of seeing
you up here if you are going to drive through this region.  We are combining
relaxation with a good deal of work at not too fast a pace, Margaret in
getting the house in order and securing that the property is kept up and
myself with the brain wave ideas I have talked over with you, with some
new mathematics and with the Heaviside story which I think I have already
talked over with you.  I am doing it in the first instance as a novel with
a vew to possible dramatization later, and I have already completed 20,000
words or so of the first draft.  When I get it done I should like to have
your opinion on it.

     However, this is not the main thing about which I am writing you.
My son-in-law sent me, as a Christmas present, a subscription to Punch
and I have been receiving it every week.  I must confess I am shocked,
not only by its anti-Americanism, which not really bothers me and which
I understand in view of the altered positions of the United States and
England, but much more by the venomous way in which it writes of Ghana
and of other communities of different race, and by its attacks on Russell,
Bronowski and other leading English intellectuals of liberal opinion.
I don't mind a certain amount of British stodge on the part of Punch,
but I am shocked at the way that it has united itself with the most
reactionary interests of the extreme right wing of the conservative party.
Something has happened that I don't fully grasp.  As a mainstay of the
opposite number of Punch over here, you probably know what it is and can
satisfy my curiosity.  You can also tell me if you think there would be
any point in my writing a letter to the editor and expressing my
disapproval.  This may be useless and even definitely undesirable, but
you can brief me on this.

     Margaret joins me in sending best regards to your wife and yourself.

                              Sincerely yours,



                              Norbert Wiener

NW:jc


                                                        [ans 7/9/57]

July 5, 1957.

Dr. Norbert Wiener
Department of Mathmatics
Massachusettes Institute of Techno,logy
Boston, Mass.


Dear Dr. Wiener:

    The University of Maryland Medical School has been
conducting a course called "Man and His Environment" for the
past three years.  This course is given to Freshman Students, and
constitutes a survey of the sciences and humanities relating to medicine.

    For the program of lectures for the coming year, the
Committee which organized this course has decided to include a
lecture on "Communication" on May 3, 1958, and we should be
honored to have you present it.  The audience will be Freshman
Medical Students and invited Faculty.  We are interested in imparting
to these students background information which they can build into a
scientific philosophy of medicine.  We feel that you will be able to
present communication theory in terms which would be intelligible and
interesting to our student body.

    I had the pleasure of hearing you a number of times during my
stay in Boston in the biochemical research laboratory of Dr. Fritz
Lipmann and was deeply impressed by your discussion of the learning
process in a symposium with Dr. Skinner, and of secrecy at one of
the meetings of the American Association of University Professors.

    In order that you may have an idea of the type of lectures
that are being presented in this course, some of the lecturers who will
precede you will be Dean Burk who will speak on biochemical evolution,
David McK Rioch who will discuss adaption, Homer Smith who will
discuss the evolution of the kidney, and Bentley Glass whose subject,

will be medical genetics.

We believe that your participation in this course would contribute greatly to its success and would be of considerable value to the education of our medical students.

There will be an honorarium of one hundred dollars plus expenses.

Please let me know whether you will be able to present this lecture.

Sincerely,

Samuel P. Bessman, M. D.
Associate Professor of Pediatrics

SPB:egs.

[ans 8/3/57]

<u>Airmail</u>

Herrn
Prof.Dr.Norbert Wiener
Massachusetts Institute
of Technology
<u>Cambridge 39, Mass.USA.</u>

BERLIN-SCHÖNEBERG · KUFSTEINER STRASSE 69

SAMMELRUF 71 02 71 · FERNSCHREIBER 0183790

| IHRE ZEICHEN | IHRE NACHRICHT VOM | UNSERE ABTEILUNG | UNSERE ZEICHEN | DATUM |
|---|---|---|---|---|
| | | Kulturelles Wort Funk-Universität | E./Kz | 8.7.57 |

Sehr geehrter Herr Professor Wiener!

Als wir uns im vorigen Jahr mit der Bitte um Ihre
Mitarbeit an der RIAS Funk-Universität an Sie wandten, konnten
Sie uns bedauerlicherweise keine Zusage geben, waren aber grund-
sätzlich bereit, sich einmal bei späterer Gelegenheit an unserem
Vortragsprogramm zu beteiligen. Wir möchten deshalb heute auf
Ihr damaliges Angebot zurückkommen.

Der Vortragsabschnitt, den wir gegenwärtig planen und
der unter dem Obertitel "Grundfragen wissenschaftlicher Welt-
orientierung" steht, soll "Hauptprobleme einer wissenschaftlichen
Philosophie" behandeln. Über seinen Aufbau möchte Sie die beilie-
gende provisorische Themenliste unterrichten.Wir würden uns sehr
freuen, wenn es Ihnen möglich wäre, die Ausarbeitung des unter
Nr.4a verzeichneten 15-Minuten-Referates zum Thema

        "Semantik und Kybernetik"

zu übernehmen. Ein Vortrag von dieser Länge entspricht etwa einem
Manuskript von 180-200 Schreibmaschinenzeilen. Das Honorar beträgt
DM 200.- und würde Ihnen in Ihrer Landeswährung zugehen. Da die
Sendung des Referates für Mitte November vorgesehen ist, müssten
wir das Manuskript bis Ende Oktober in Händen haben,um es dann
hier durch einen sachkundigen Sprecher verlesen zu lassen.

In der Hoffnung, dass das genannte Thema Ihr Interesse findet
und Sie diesmal eine Möglichkeit sehen, unserer Einladung zu ent-
sprechen, wären wir Ihnen für einen baldigen Bescheid ausserordent-
lich dankbar. Inzwischen verbleiben wir mit den besten Empfehlungen
                              und dem Ausdruck unserer
                              vorzüglichen Hochachtung
                                  R I A S
                                  BERLIN
        i.V.                                    i.A.

L.P.Dalcher              (Kundler)              (Eifler)
Director, RIAS

Anlage

July 8, 1957

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Mass.

Dear Professor Wiener:

    The Humanities Society at the State University of Iowa
wishes to invite you most cordially to address it some time
during the coming academic year.  The Society is composed of
members of the faculty and some advanced graduate students
who assemble to hear lectures by scholars from the local
campus and elsewhere on subjects of general significance.
The topics are, of course, wholly at the speakers' discretion.
Although we cannot offer too much in the way of a honorarium,
we can usually arrange to make up for expenses incurred by
visiting scholars.  We can, however, assure you of a lively
and interested audience of some forty to fifty persons.

    At this time of the year we still have considerable
latitude in our calendar, and we would therefore be in a position
to accommodate you at any time that would be convenient for
you or at which you would come our way.  Would you be able
to let us know in the near future whether you can be our guest?
The Humanities Society and the University community in general
 would be delighted if you could manage to visit with us.

        Sincerely yours,

        Ralph Freedman

        Ralph Freedman
        Secretary, Humanities Society
        Assistant Professor of English

[ans 9/9/57]

### Rudolf Virchow Medical Society in the City of New York

PRESIDENT
HANS H. BIBERSTEIN, M.D.
667 MADISON AVENUE

COR. SECRETARY
WOLF ELKAN, M.D.
120 CENTRAL PARK SOUTH

TREASURER
ARNOLD T. BENFEY, M.D.
50 PARK TERRACE WEST

July 9th,1957

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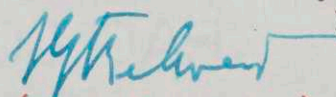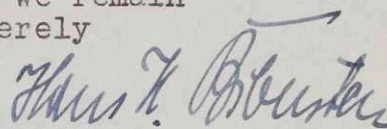Massachusetts Institute of Technology,
Cambridge 39,Mass.


Dear Dr.Wiener:

    We thank you for your kind letter with
your interesting remarks,concerning the further
progress of your work,the results of which you
are going to present and to explain to us.You
will have a very appreciative audience.

    Your suggestion to have your talk taken
down by tape recorder is certainly agreeable
with us.We shall arrange for it.

    Although you accepted our invitation for
Mrs.Wiener tentatively,we confidently hope that
she will accompany you.Would you kindly let us
know in time the approximate day and time of
your arrival,so that we can make the hotel res-
ervations.Accomodations would be made in the
Hotel Plaza if you do not have a different
preference.

        With kindest regards we remain
                    very sincerely
                        yours

    (Hans J.Behrend)              (Hans H.Biberstein)
Chairman of the Program              President
        Committee
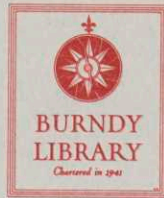
July 9, 1957

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

Dear Dr. Weiner:

I read with considerable interest of your paper pre-
sented before the recent gathering of the New England
Institute for Medical Research.

If a copy of your paper is available it will be of
considerable value to us.  We hope this can be
made available to us.

Sincerely,

Bern Dibner

Bern Dibner
Director

BD:nrp

[ans 8/8/57]

72 Barrow St.
New York 14, N.Y.

July 9, 1957


Dear Professor:

      Thank you for your letter of July 4,
which I have just received upon returning from the country
-- at Cornwall, Conn.

      I, too, have a subscription to _Punch_, and I ,
too, have wondered from time to time about the advisability
of writing a little letter to the editor. Some of the cartoons ,
political and otherwise, have been in appalling taste. I was
particularly incensed over one that showed the traffic in
and out of Britain. It showed a ship with two gangways.
One, representing Departures, depicted the flower of middle-class
England -- healthy, tweedy types bound for Kenya and so on;
the other showed an arriving rabble of colored people -- particularly
West Indians -- Eastern European refugees whose faces, in some
instances, were Jewish caricatures. Underneath was printed
some surly caption indicating that the trade wasn't a good one
for Britain.  As for the articles, I pay very little attention to
them. Most of the writing is crude and sloppy and much of
the humor quite unsubtle.  Actually, as far as I can remember,
much of _Punch_  has been like this. This magazine has barely emerged
from the stage where it might be expected to run doggerel snickering
at Darwin. The moral standards are not too far removed from those
of British schoolboy blood-and-thunder magazines like the
Magnet, The Rover, and so on. (Orwell had a very interesting
dissection of the latter in one of his essays.) The undertone is
one of sullenness to change, resentment of the encroachment
of working people and colonial peoples  into the fatuities of
middle-class English life , and above all a snobbery that manifests
itself not only in the foregoing but that manifests itself, also,
in a seedy urbanity of style. The values of _Punch_ are really pretty
much as they were 50 years ago -- and a third of a century ago, too,
when I remember as a little boy poring over and puzzling over
old copies of _Punch_,  with its heavily-captioned cartoons about genteel
vicars, ignorant yokels, ungrammatical cockneys and miserly-looking
Scotsmen with Tam o'shanters and tiny change purses -- Empire,
Country, King or Queen, the unreliability and presumptuousness
of the rising lower classes, and the deep goodness of Christian
Englishmen, preferably of independent means. The best way to enjoy
_Punch_  is to be a squire, grinding his teeth at labor, taxes, the
rising poor, ~~and the prospect of his inevitable decay~~  America and
the prospect of ~~his~~ inevitable decay.

      Your

I really don't think it would do any good to write
a letter to the editor. <u>Punch</u> doesn't print letters, and
I think any attack on the magazine and its editor, Malcolm
Muggeridge, who seems to be a conceited, oracular right-winger,
would best come from England, where it would do the most damage.

Well, enough of that. I am glad you are having such
a delightful vacation. You haven't talked to me about the
Heaviside story, so I don't know what you have in mind. I would
be delighted to have the opportunity of reading a draft, though.

I read in The Times about the meetings at which
you reported on the progress made on the brainwaves, and was fascinated.
Is what you are doing this: to bring to medical diagnosis
the explicit techniques of sophisticated mathematics? , and to
make patterns (of out) chaos? If this is so, I can only envy
you your excitement and sense of satisfaction.

Please thank Mrs. Wiener for her good wishes. I hope she
is getting a really good rest.

Yours sincerely

*Tom Whiteside*

Thomas Whiteside

P. S. Did I see your name MISSPELLED
in the press?

# ROLLINS COLLEGE
## WINTER PARK, FLORIDA

10th July, 1957.

Professor Norbert Wiener,
53 Cedar Road,
Belmont,
Massachusetts.

Dear Professor Wiener:

In a paper which I have to give in California the first week
in October, I wish to make mention of your position as a scien-
tist in relation to governmental weapons research.

I am wondering if you could give me a brief statement of your
present position and the reasons for it.  Further, I should
appreciate your thought as to how scientists can assert them-
selves in relationship to governmental policy.

Because of my very great admiration for your position, I am
anxious to make as accurate a statement as possible.

Very sincerely yours,

*Paul Douglass*

Paul Douglass

[ans 8/5/57]

William E. Hawk Jr.
577 Arballo Drive
San Francisco 27
10 July 57


Norbert Wiener, Ph.D
Professor of Mathematics
Massachusetts Institute of Technology
Cambridge, Mass.

Dear Professor Wiener:

Recently I had the opportunity to read and enjoy your book,
The Human Use of Human Beings - Cybernetics And Society,
Doubleday Anchor Books, 1956.  I must admit with some shame that
since 1948 I have denied myself (until now) the benefits of your
knowledge--I didn't have the courage to wade into Cybernetics.
If only I had somehow managed to find the required courage, I'm
sure that my own writing efforts would have been more significant.
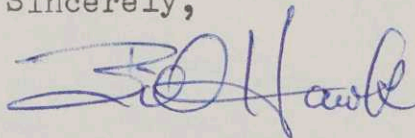In any case, let me express my appreciation and thanks for your
work.

The second reason for this letter is to ask your permission to
quote a couple of passages from your Human Use of Human Beings.
I have enclosed a copy of the presentation in which I would like
to use your material.  This little essay is intended for use in
promoting a project which I initially touched upon in my book,
Discussion On Democracy, Exposition Press Inc., N.Y., 1956.  I
hope that the enclosed draft will be self explanatory.

I do not intend to copyright this essay.  It will be mailed to
selected individuals and groups along with a personalized cover
letter.

Your permission to use your material will place me even further
in your debt.  All I can presently offer in return is my sincere
thanks.

Should you have any comments or suggestions to offer on my project,
I would receive them gratefully.

                    Sincerely,

                    [signature: Bill Hawk]

USEFUL INFORMATION
and the
DEMOCRACY FOUNDATION
by
William E. Hawk, Jr.

Assumptions    (human progress depends upon rationality)

In extending control over environment and self, and in solving related problems,
"man" has been continuously faced with success or failure according to the degree
of efficiency attained in the use of available resources (material, intellectual, etc.).
This means that progress, and the frustration of progress, (past-present-future)
can be validly equated with the degree of rationality attained, or to be attained, in
the organization of resources and in the methods developed for the utilization of
such resources.

Obvious irrationalities in organization and methods can be found to account for
major frustrations of progress in past and present societies.  For examples,
look to ancient Greece and Rome and to the present "war threat" crisis.  These
cases illustrate instances where the available resources were not and are not
used rationally.  Organization and methods were not and are not appropriate to
the realities faced.  (See Discussion On Democracy, Exposition Press Inc., N.Y.,
1956 for fuller development.)

If we can define rationality as the taking of a course of action, involving the least
expenditure possible of energy, time and other resources, which will effectively
produce success in achieving a goal or in problem-solving - we will have a cri-
terion for action.  If we add that rationality involves goal seeking when more than
one course of action is possible, (i.e. that choice or discrimination is required),
we shall have established basic informational requirements.  In other words, the
achievement of rationality is dependent upon the consideration of all available
relevant information.

Problem  (the individual, acting alone, has not the resources for rationality.)

And what is the general condition of our "available" information today?  In our
efforts to solve problems and achieve goals, from the most immediate to the
most immense and far-reaching, how much use are we able to make of the vast
amount of knowledge and information that is presently available in one form or
another, in one location or another?  What should my attitudes and actions be
guided by in the areas of juvenile delinquency, elementary education, public
health, atomic fallout, a world police force, international relations, the mental
and physical implications of economic competition and conflict, etc.  How reliable
is the information that may be easily gotten from one source or another?  Am I
able to get all of the available relevant information on any one subject together in
a suitable form for decision-making and action?  These questions are clearly
relevant to the matter of achieving rationality in actions.

I suggest that there are at least two main obstacles in the field of information
communication at present which minimize our chances of acting rationally in any
given instance:  1.  the specialization-access dilemma which operates in our most
advanced fields of study and knowledge (particularly the sciences), and 2.  the
factor of unreliability which is operative generally in the media of mass commun-
ication.

In the area of knowledge utilization re. rational organization and methods, a first order dilemna has appeared through the development of the general relationship between the mass of goal seeking individuals within the society and the relatively few individuals in the society who are engaged directly in the work within the most advanced fields of knowledge (again, particularly in the sciences). The volume of knowledge, available knowledge, is rapidly increasing in these specialized areas while the ability of the individual members of society to make use of such knowledge is generally decreasing. Not only is much relevant information in numerous fields not being generally communicated, but it is highly questionable whether the resources of most individuals would be sufficient to correlate, analyze, and to synthesize such knowledge into usable forms if it were to be communicated. And this problem exists not only for society in general but even for individuals within these specialized areas who find it increasingly difficult, if not impossible, to be completely informed in their own fields. In other words, increased specialization within various fields of study and knowledge (and the accompanying technologies) has created the problem of synthesizing relevant knowledge from these fields into socially useful orientations and programs which can be meaningfully applied by problem-solving individuals in their daily efforts - scientists and non-scientists alike. From the viewpoint of our definition of rationality, this dilemna poses a definite threat to our future progress as a species. The extreme diversity and quantity of available information, the shortcomings of the methods of communicating such information, the time-resource limitations of the individual, and the general inability of individuals to adequately synthesize rational programs of action all operate to insure that actions will not be rational and that progress will be frustrated.

The second main factor that has been noted as an obstacle presently existing in the field of information communication, and which tends to minimize our chances of making rational decision-actions in any given instance, is that of the unreliability which operates generally in the media of mass communication.

Much of the information that we need daily to make decisions on relatively complex and important matters is of a second-hand nature. Limitations of time, capacity, etc., make the acquisition of information on a first-hand or direct-observational basis impossible for any given individual over any broad area of interest. (e.g. mental health, transportation, physical health, material resource conservation, education, international relations) This fact poses a major problem for the decision-making individual: how can accuracy of information be assured when the individual often has no way for verifying accuracy?

This problem is made more difficult of solution when sources of information are influenced by a private-profit motivation. In the U.S.A. for example, we see that the overwhelming majority of common information sources are private-profit motivated: newspapers, radio stations, book publishing firms, and cinema and television producers and displayers. Examples of television news reporters who select news items with a primary concern for achieving spectacular reports are common. Such reporting is at the expense of ommission of some news, distortion of the news actually reported, etc., and with the sacrifice of information for entertainment. Another illustration might be found in the case of a newspaper publisher who admittedly (but not uniquely) manufactures news to insure maximum sales and who also enforces editorial policies making it mandatory that reporting of news, inclusion of specific items of information, comments on the news, etc., be conditioned by the economic and political prejudices of the publisher and/or leading advertisers. Many other examples may be found among the various media.

Professor Norbert Wiener in his book, <u>The Human Use Of Human Beings -</u>
<u>Cybernetics And Society</u>, Doubleday Anchor Books, Garden City, N.Y., 1956,
discusses the problem from another angle.  In writing of the complexity and cost
of modern communication he notes: "A hundred and fifty years ago or even fifty
years ago - it does not matter which - the world and America in particular were
full of small journals and presses through which almost any man could obtain a
hearing.  The country editor was not as he is now limited to boiler plate and local
gossip, but could and often did express his individual opinion, not only of local
affairs but of world matters.  At present this license to express oneself has become
so expensive with the increasing cost of presses, paper, and syndicated services,
that the newspaper business has come to be the art of saying less and less to more
and more."  He deals with other media and then goes on to say, "Thus we are in
an age where the enormous per capita bulk of communication is met by an ever-
thinning stream of total bulk of communication.  More and more we must accept
a standardized inoffensive and insignificant product which, like the white bread
of the bakeries, is made rather for its keeping and selling properties than for its
food value."

What are we to do about this double-barreled problem in information communica-
tion?  What can we do about the single aspect of accuracy verification?  As indi-
viduals we can judge to some extent by the source of our information.  We can put
qualifiers into the context and we can read between the lines.  We can develop re-
liable sources among existing institutions, we can be discriminating and imagina-
tive - but we will still be faced with the problem.  We are too interdependent for
it to be otherwise.


## Discussion (there is a way)

These two main obstacles to adequate information communication are symptomatic
of a crisis in the development and progress of the species.  This crisis is also
manifested in the extreme frustration of solitary individuals who attempt ration-
ality in social problem-solving.  With increasing specialization of production of
knowledge as well as material goods, with an increasingly complex social-political-
economic milieu, individuals are forced to use the techniques of social problem-
solving more appropriate to an enlightened cave man than to a modern being.
Rationality can rarely be attained with such a disorganized condition of the infor-
mation communication process.  We are forced to approach the severest problems
in history with our intellectual facilities in the straightjacket of disorganization
and inadequate methods.

Professor Wiener, in discussing this problem in his book, suggests: "A clear
understanding of the notion of information as applied to scientific work will show
that the simple coexistence of two items of information is of relatively small value,
unless these two items can be effectively combined in some mind or organ which
is able to fertilize one by means of the other.  This is the very opposite of the or-
ganization in which each member travels a pre-assigned path, and in which the
sentinels of science, when they come to the ends of their beats, present arms, do
an about face, and march back in the direction from which they have come.  There
is a great revivifying value in the contact of two scientists with each other; but
this can only come when at least one of the human beings representing the science
has penetrated far enough across the frontier to be able to absorb the ideas of his
neighbor into an effective plan of thinking."

4-   <u>Discussion</u> (cont.)


If the future of the species is to be decided in terms of intellectual development
rather than physical development, then it is clear that this inadequacy in infor-
mation communication can easily be the deciding factor in whether we have further
human progress or stagnation and regression.

Are there any answers to this problem? Where can we look for help? Has there
ever been an analogous situation where this type of problem was dealt with suc-
cessfully?

As a problem of organizational effectiveness and efficiency this dilemna has
existed in a limited form in business organizations and within governmental agencies.
It probably is still the major problem among such organizations. However, some
such organizations have been able to deal with the problem with relatively great
success. At least an approach has been developed which shows promise. To some
extent the incentive for such organizations to work on the problem exists due to the
obvious savings of dollars or the increasing of profits possible. An organization,
particularly a profit oriented one, would logically be likely to experiment with new
ideas when there is a clear profit to be made or when survival is clearly the issue.
Anyway, some organizations have successfully used what has become known as the
scientific management approach in breaking the information communication bar-
rier. Basically this approach involves these two factors: 1. explicit recognition
of the time-resource limitations of the individual and the corallary diversity-
knowledge situation, and 2. the utilization of "staff generalists" who are able to
devote the time and resources necessary to the researching, analysis, synthesis,
testing, and reporting activities required for adequate orientation and decision-
making in complex situations.


<u>Recommendation</u> (the "general staff" organization)

Would it be fallacious reasoning to assume that this method might be effectively
and validly used in the broader area of personal and social problem-solving? I
don't think so, but in any case it will not cost us much to experiment and find out.
Should such an approach be used within existing institutions? This would seem
unlikely. If such a function should be established it must, to be most effective,
be insulated from the existing restrictions on information communication which
are presently so ubiquitous. An independent organization should be set up which
can act as a general staff for each individual in the society who chooses to use
the services provided. This organization should be free from reliance on specific
institutions for financial support and should in fact be voluntarily supported by
those for whom it labors - the individual members of society.

In my book, <u>Discussion On Democracy</u>, I have suggested that the question of
evolving more completely democratic conditions of living require not only the
effective organization of a mass pressure group as described, which I hope will
be relatively easy to do, but that the individuals composing such a group must be
generally well informed individuals so that they can make rational and responsible
decisions for actions that are to be taken in achieving goals - both as members of
a group and as individuals. Without such well informed and responsible individuals
democracy is but a dream. Without this element of adequate information, the
responsible individual, the rationally acting individual, can not exist - and political
rights can eventually mean only mobocracy and/or authoritarianism of the most
violent type.

5-    <u>Discussion</u> (cont.)


The kind of organization envisaged here as one likely answer to our information communication problem, serving as it will each individual as a private staff of researchers, is probably the best available answer to the problem of keeping a mass pressure group from becoming an irrational mob or a lethargic, apathetic mass subject to control by the most appealing demogogue of the moment (as happened, for example, in ancient Athens).

The functions of such an organization should include: 1.  carrying on research and supplying information to individuals on various social problems and areas of interest by topical or functional classification (e.g. economics, art, disarmament, international law, public health) and by geographical classification (e.g. the above factors re. the individual in Macon, Ga. or Franklin County, Ohio); and 2.  the synthesizing of alternative programs of social action and the presentation of such programs to individuals for their consideration and possible action.  The long-range goal for the organization would be the extension of such a service to all human beings.

Such an organization might be formally established in the usual non-profit foundation form.  This suggests the name of <u>Democracy Foundation</u>.  It seems very possible that the Democracy Foundation would prove of immense value to us in terms of the provision of information and ideas on which we could individually make meaningful value judgements and thus achieve greater individual effectiveness and efficiency in personal and social problem-solving.  In fact, it seems highly unlikely that we can, as a species, realize any further significant progress unless we do utilize some such approach.

Among the guiding principles of the Democracy Foundation might be:
1.  that the organization and its functions be viewed as being on an experimental basis and subject to constant study and revision
2.  the circulation of information and ideas between the organization and individuals be truly circular - individuals to the Foundation, Foundation to individuals, etc.

The activities of the Foundation should be designed to:
1.  create desire for rational change, in the minds of individuals, by making plans for such change, and by creating conditions for individual self-development
2.  define long-range, intermediate, and short-range objectives and programs and major areas of human activity and interest, and correlate these objectives so that the very act of presentation may provide stimulus for creativeness and change on the part of the individual
3.  produce a staff research and planning which will stimulate rational policy decisions by individuals who will in turn properly delegate responsibility and authority, where necessary, for the achievement of group objectives - the efforts of the delegated representatives being in turn made subject to further staff study and reporting, etc.
3.  ~~produce a staff research and planning which will stimulate rational policy decisions by individuals who will in turn properly delegate responsibility and authority, where necessary, for the achievement of group objectives - the efforts of the delegated representatives being in turn made subject to further staff study and reporting, etc.~~
4.  provide education and instruction in value analysis and determination, in techniques of self-development, and in techniques of individual-group(s) cooperation

The methods of conducting the activities of the Foundation might include: 1. the "scientific" methodology; 2. the operations research approach; 3. the feedback principle; 4. the "staff paper" format in reporting.

Action (how we can begin)

To get the Democracy Foundation functioning there are several immediate needs: 1. detailed planning of the formal establishment; 2. gaining of financial support of a continuous nature; 3. conducting an initial project that would be designed to create rapport and acceptance generally; 4. publicity and increased financial support prior to extending the activities to significant proportions.

To provide a basis for planning, I have estimated a two year operating budget (minimum) for the organization. This includes the initial costs of legal work and publicity. A two year period was used because of the requirement of the Treasury Department that a non-profit organization must have operated satisfactorily for a period of two years before it can be accorded formal recognition as a tax exempt organization. (If such recognition is not forthcoming all assets are lost.)

| | | |
|---|---:|---:|
| Initial brochure (inc. mailing) | $    500.00 | |
| Legal fees, etc. | 300.00 | |
| | | 800.00 |
| **Salaries** | | |
| 1. Director | 12,000.00 | |
| 2. 1st Asst. | 10,000.00 | |
| 3. 2nd Asst. | 10,000.00 | |
| 4. Steno | 7,000.00 | |
| Benefits | 3,900.00 | |
| | | 42,900.00 |
| **Expenses** | | |
| Office rent (inc. light, heat, maint.) | 1,200.00 | |
| Furniture & equipment | 720.00 | |
| Travel | 2,000.00 | |
| Supplies | 100.00 | |
| Books and subscriptions | 500.00 | |
| Telephone | 240.00 | |
| Postage | 100.00 | |
| Publication of project report | 2,000.00 | |
| | | 6,860.00 |
| | | $50,560.00 |

The initial project of the Foundation, aside from continuous planning and promotion, should involve as simple and as uncomplicated an area as possible - and yet be of such a nature that the results would be likely to be most impressive. For this reason it is suggested that the project consist of a complete area study in one of the less populated southern states. The study should include all aspects of the environmental situation which a democratically oriented individual in that environment would require a knowledge of as a prerequisite to rational action.
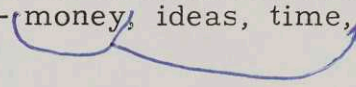
For the individual residing in the area under study, the project report should provide information and specific proposals for action in such areas as the following: 1. personal and organizational actions most likely to be effective in creating

7-    <u>Action</u> (cont.)

the mass pressure group necessary for influencing national and local policy com-
mittments in line with democratic objectives; 2.  actions that would be most ef-
fective in attaining objectives in international relations, public health, economic
abundance, etc.; 3.  development of adequate civil liberties protections; 4.
elimination of consumer exploitation by producer groups; 5.  juvenile delin-
quency, etc.

The project report would be made available to individuals within the area studied,
for their use in problem-solving, and it would be distributed to organizations and
individuals throughout the world who would be likely to be interested in the work
and from whom assistance might be expected in expanding the work program of
the Foundation.  In other words, the initial project report would probably be of
most benefit as a publicity item to be used in gaining support for the Foundation's
work on a broad basis.

Anything you can contribute to the development and establishment of the Democracy
Foundation will be welcome - money, ideas, time, etc.  Thank you.

Mathematics Department
The Institute of Science
Bombay 1, India

July 10, 1957

Dear Professor Wiener :

    I have just heard that Rockefellers have
turned down my application.  Just the same I would
like to thank you very much for your generous support.

    As you probably know, I have part-time
teaching offers from Harvard and Boston. On the strength
of these I am willing to come and work with you, if
you are agreeable.  Do please let me know how you
feel.  This arrangement will involve my commuting
frequently between Boston, Tech and Harvard, and more
teaching than I would have liked to undertake.  I
am writing to Professors Martin and Loomis to see if
this could not be rationalised, so that I get more
time for work.

    Thank you very much for the doctor's report
on my former student, R. J. Parikh. Please also convey
my thanks to Mrs. Wiener for any trouble she may have
taken in this connection.

            With kind regards,

                        Sincerely yours

                        *P. Masani*

                        P. Masani

Professor Norbert Wiener
Mathematics Department
Mass. Institute of Technology
Cambridge 19, Mass.
U.S.A.

P.S. I have just received your letter of July 1 from
New Hampshire. In this you have already
answered my question. Many thanks. My coming
will be conditional on my getting leave from
here. This may involve difficulties. I am trying
to get more teaching at Harvard or to teach at Tech,

to
and ^ give up the Boston offer, if possible. This will give me more time to devote to research. I will be grateful for any help you can render in this.

Many thanks for the report of your recent work. I am very glad you have a way of attacking the non-deterministic case of low rank.

Sincerely

P. M.

Sender's name and address :—

P. Masani
Mathematics Department
Bombay 1, India

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Second fold here

CORR - 66

Professor Norbert Wiener
South Tamworth
New Hampshire
U.S.A.

12
AS
INDIA POSTAGE

July 12, 1957

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

Dear Dr. Wiener:

Through the kindness of Dr. Aurel Wintner I heard
of a manuscript that you are presently at work on.
It was my understanding that you were not as yet
committed to a publisher and that you would consider
letting us examine it.  Also, I got the impression
that it was written, to some extent, for the layman,
though our interest in it would by no means depend
on that, for we publish at both the lay and technical
levels.

If I understood Dr. Wintner's secretary correctly and
you do have some of this manuscript ready to release,
we would be most happy to ask you to send it to us.
Please insure it as you think best, and please be sure
to keep at least one good copy in your own hands.

In order that you might receive this letter as soon
as possible, I have mailed one copy to you at the
Institute and a carbon copy in care of Dr. Wintner.
I hope that we may hear from you before too long and
that we may be able to serve you as publisher.

Sincerely yours,

John H. Kyle
Editor

JHK/cs

[ans 7/20/57]

Mathematics Department
The Institute of Science
Bombay 1, India
July 12, 1957

Professor Norbert Wiener
South Tamworth
New Hampshire
U. S. A.

Dear Professor Wiener :

I hope you have received my letter of July 10.

With regard to my leave application it would help
a good deal if you would write a supporting letter to

Dr. Miss S. Panandikar
Acting Director of Education
State of Bombay
Poona 1, India,

and forward a copy of this with a covering note to

Mr. G. V. Bedekar, I.C.S.
Secretary to the Government of Bombay
Education Department
Secretariat, Bombay 1.

Would you kindly do so as soon as possible? In this letter
please refer to the purpose of my proposed visit and the
significance of the work to be undertaken.

I shall also be very grateful if you could write
to

Miss Isabella Thoburn
Executive Secretary
U. S. Educational Foundation
17 Curzon Road
New Delhi, India

in support of my application for a travel grant, and
possibly a maintenance grant, which might allow me to
cut down on teaching.

With kind regards and many thanks, and apologies
for giving you all this trouble,

Sincerely yours

P. Masani

P. Masani

[ans 7/20/57]

PROFESSOR NORBERT WIENER
SOUTH TAMWORTH
NEW HAMPSHIRE

U. S. A.

Corr - 66

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Third fold here →

Second fold here →

Sender's name and address :—

P. Masani
Institute of Science
Bombay 1, India

13 Boundary Road
WALLINGTON
Surrey
12th July 1957

Dear Professor & Mrs Wiener,

I think you may like to know that
"I am a Mathematician" has been most
popular in the Imperial College Mathematics
Library since we bought it. We put the
"Mathematical Prodigy" on order but there
has been no more response than to my
enquiries at my booksellers after you
had mentioned the book to me at our
last meeting. For some time I hoped I
had understood right that you would
see to my getting a copy! But that was
too much to promise, with your long

journey, & practically a convalescence,
before you. What I did gather was
that the book was not on sale in
England & must be obtained direct from
U.S.A. But there seemed a good chance,
if the sequel was a success (which it
has certainly proved to be) that the first
part would be reprinted in England
for the British public. Should you have
any news of this, it would be very welcome.

I wonder what you had planned
for this summer & how it is working out:
well, I much hope. I am staying at home
till September, when the Deutsche Mathematikes
Vereinigung apparently expects to get me quite
easily to their meeting in the East Zone at Dresden.
If not, there is the British Math¹ Colloquium at Nottingham
at the same time. With kindest remembrances [ans 8/9/52]
                                        from        Cecily Tanner

6 Waterden Road,
Guildford,
Surrey
Tel.: 4289

July 12. 57

Dear Professor Wiener

A letter which I wrote to you several months ago was returned as 'unknown' from Massachusetts University — but now I have been given another address.

By request I am writing a biography of my late son A. M. TURING F.R.S.

An article in 'News Review' dated February 1949 mentions your interviewing him & says that you considered him a pioneer in the field of cybernetics & as "first among those who have considered the logical problems of a machine as an intellectual

experiment". I shall be grateful if you would
confirm these as your words & allow me to
quote them as well as any further informa-
tion which you may see fit to give me &
which I shd. much appreciate. I should be very
glad of your impressions of my son.

I should also be grateful for permission
to quote from the summary taken by Prof. Abraham
Kaplan from your book "The Human Use of
Human Beings" pp. 1307 & 1308 of the "World
of Mathematics"; & any other suitable quotations
given in the latter work. Prof. Newman has been asked.

Unfortunately "the World of Mathematics"
had a footnote saying my son had taken
his own life in a fit of depression. Actually
at the time he was in particularly good

Spirits and the general opinion of those nearest to him is that in experimenting with cyanide he inadvertently got some on his fingers, went to bed a proceeded to eat an apple on to which the poison had been transferred. An experiment – coke under Electrolysis – had been going on for weeks & continued after his death. This smelt of cyanide of potassium. My son had such a great future apparently before him, especially by reason of his research in morphogenesis & everything at his house – acceptances of installations ready for post – dc pointed to immediate future plans.

My biography is almost complete but there
would still be time to add any suggestions
you can make & which I shd. much value.

I am sure he enjoyed meeting you
since there was such affinity in
your views.

Yours sincerely
E Sara Turing.

# YALE BROADCASTING COMPANY, INC.

### 242-A YALE STATION, NEW HAVEN, CONNECTICUT

JAMES E. CRANKSHAW — CHAIRMAN

STEVEN A. SEIDEN — PROGRAM DIRECTOR      RUSSELL L. POST, JR. — SECRETARY
WILLIAM C. BULLOCK, JR. — BUSINESS MANAGER      FRANK F. TOLSDORF, JR. — VICE-CHAIRMAN
WILLIAM N. APPEL — TECHNICAL DIRECTOR      RICHARD A. FEDER — PUBLIC RELATIONS DIRECTOR

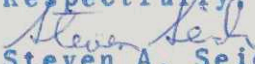July 13th, 1957

Mr. Norbert Wiener
South Tamworth
Massachusetts

My dear Mr. Wiener:

As per our telephone conversation, I was
most happy to learn of your interest in
speaking at Yale. WYBC is a closed circuit
undergraduate radio station and is non-
profit.

In the past our program, entitled "Perspective",
runs for about an hour and a half. You would
speak for approximately three quarters of an
hour followed by questions from a faculty
panel. Paul Weiss has already consented to
be on same.

The actual broadcast is done from a large
lecture auditorium with a live audience. We
begin at nine in the evening sharp. Prior
to this we will have a small reception and
dinner at Mory's.

Available dates for the broadcast are: Sept. 23
Sept. 30, October 7, Oct. 14. Again, it would
be an honor to have you as our guest.

Respectfully,

Steven A. Seiden
Program Director

P.S. Summer address: Lido Hotel, Lido Beach, N.Y.

SAS;hp

[ans 7/29/57]

July 15 '57

My dear Norbert:

When you had spoken to
me about "an" article in the
New York Times, I had not
realized that it was your own
pen. Possibly this is because
I am so far from being a
child prodigy; in fact I may
even have a rather low IQ ....

Friends of mine, however,
saved the article and gave
it to me to read. May I say,
even if it be belatedly, that
I found it stimulating,

forthright and integral?
You should be congratulated
in packing so much
deep thought, deep humane
thought, in so little space.

Happy tidings!
Tony

**INSTITUT POLYTECHNIQUE**
**DE JASSY**

BIBLIOTHÈQUE CENTRALE

DIRECTION DU „BULLETIN" DE l'INSTITUT

**DEPT. D. SCI. MATHÉMATIQUES**
(R. P. ROUMANIE)

Nr. 17

Jassy,the 15th July,1957

Professor Dr.Norbert Wiener,

Massachssetts Institute
    of Technology,

Cambridge,Mass.


Dear Professor Wiener:

I renew our heartily and sincere invitation to
send us one of your original articles to be printe
in our BULLETIN OF THE POLYTECHNIC INSTITUTE OF
JASSY, destinated to our colleagues troughout the
world.

I am mailing you in homage our BULLETIN Vol.
IV old series,and also Vol.II(VI),fasc.3-4,1956,
640 pp.,new series.

I beg you to send us all your available publi-
cations. New books will be reviewed in our BULLE-
TIN.

Let me to be expounder of our anticipated grati
tude.

Very sincerely yours,

Prof.Dr.D.Mangeron

Editor of the BULLETIN,
distributed on exchange basis in more that 2000
examplares in the whole world .

Prof. Dr. jur. Ulrich Klug

Karlsruhe, den 17.7.1957
(Germany)
Kriegsstr.152


Professor Norbert Wiener
Boston, Mass.
USA



Sehr geehrter Professor Wiener !

Im Zusammenhang mit Untersuchungen über die Frage,
inwieweit sich die im Bereich der 'symbolic logic'
entwickelten Kalküle für die Analyse und bessere
Präzisierung von juristischen Problemen verwenden
lassen, gestatten Sie mir bitte, mich mit folgenden
Fragen an Sie zu wenden:

(1) Sind schon Versuche angestellt worden, elektronische
    Automaten zur Bestimmung von Folgerungen aus
    juristischen Axiomen zu verwenden?

(2) Sind elektronische Automaten für sonstige juristische
    (nicht rein rechnerische[+]) Zwecke bereits eingesetzt
    worden?

(3) Gibt es über die Fragen (1) und (2) Publikationen?

Für eine Beantwortung dieser Fragen wäre ich Ihnen
sehr zu Dank verbunden. Ich hoffe nur, dass Ihnen
mein Anliegen nicht allzu viel Mühe macht, und bitte
gleichzeitig freundlichst zu entschuldigen, dass ich
deutsch schreibe, da meine englischen Sprachkenntnisse
sehr mangelhaft sind.

        Mit den verbindlichsten Empfehlungen
            bin ich
                Ihr sehr ergebener

                    Ulrich Klug

[+]) Also abgesehen von der
Errechnung von Dividenden-
zahlungen, Versicherungsprämien,
    Steuerquoten u.ä.

[aus 7/27/57]

# GRINNELL COLLEGE

GRINNELL, IOWA

July 17, 1957

OFFICE OF THE PRESIDENT

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

Dear Professor Wiener:

On behalf of the faculty and trustees of Grinnell College, I am happy
to invite you to our campus to receive an honorary doctorate. This is
in recognition of your outstanding contributions to mathematics and its
implications for human affairs.

We are planning an important convocation next fall during the period
October 25-27, 1957. We should particularly like to have you present
at that time to receive the degree and to make an address. The audience
of perhaps two thousand people will include students, alumni, parents,
and leaders of all branches of professional and public life. Although
the program has not been definitely set, your address would probably
be scheduled for Friday morning, October 25, and the degree would be
awarded on Sunday afternoon, October 27.

Your address could be on a subject of your own choice. We hope that
it might be appropriate for a session we have planned on "Science as
an Aspect of Modern Culture." But if other topics would be of greater
interest to you, you would be free to choose.

We expect this convocation to be a significant milestone in the progress
of liberal education in this area. We shall try hard to present the
liberal arts as effectively as we can, in relation to the development of
American culture and the interpretation of public issues. We expect
to present eminent speakers representing the humanities, the sciences,
and public affairs. Other speakers at the convocation will be William
Pollard, Edward R. Murrow, Joseph Welch, Perry Miller, David Riesman,
Gardner Cowles, James Johnson Sweeney, Dean Pike, and others. Your
presence at the convocation would mean a great deal to the students and
guests of the College, and I think it would be worthwhile to you in terms
of what you would be able to accomplish for higher education.

We are prepared to pay a suitable honorarium and travel expenses.

I hope you will be able to accept this invitation which we offer with
high hopes.

Yours sincerely,

Howard R. Bowen

Howard R. Bowen
President

HRB/pd

[ans 7/27/57]

July 17, 1957

Professor Julien Loeb
Saint Cloud
14 Rue Alphonse MOGUEZ
FRANCE

Dear Loeb:

The summer is not a bad time in Mexico as the tempera-
ture is spring like all the year round.  I suggest that you
do not put off your trip because of the summertime.

I am writing a letter in your behalf to Manuel Vallarta,
Äs he is Vice Minister of Education, he will be able to give
you the right introductions in Mexico.

I am wishing you all success in your trip.

Sincerely yours,

Norbert Wiener

maf

[ans 8/25/57]

July 17, 1957

Dear Manuel:

I am enclosing a copy of a letter I am sending to
Julien Loeb.  I know him from Paris very well and he is
one of the best men in France on communication work.  I
am commending him to your good officers in Mexico.

Hoping that everything is going well with you and
Maria Louisa.

By the way, if you don't happen to be in town, please
let me know to whom I should write on Mr. Loeb's behalf.

Sincerely yours,


Norbert Wiener

maf
Enc.

July 18, 1957
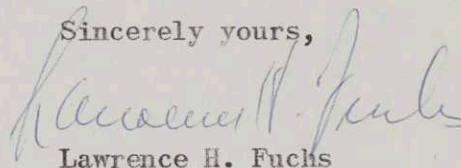
Professor Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Wiener:

From all accounts, the Physics Conference in which you so
generously participated was a rewarding experience for our
students.  It also meant a lot to Brandeis University to
have someone of your stature visit the campus and partici-
pate in the Conference program.

We want to thank you, and we hope that you will come back
to visit us again.

Sincerely yours,

Lawrence H. Fuchs

LHF:O

Please send us a statement of your transportation expenses
so that we may reimburse you.

L. H. F.

July 18, 1957

Dr. Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Doctor Wiener:

Enclosed is a copy of the talk which you gave at the
"Conceptual Clinic" held here in June.  As you know,
the Foundation for Instrumentation Education and Research
plans to publish the proceedings of this conference and
have therefore had this very "roughly" transcribed from
the tape.  We realize that it is in no way ready for publica-
tion.  Therefore, would you please be kind enough to check
the enclosed and do whatever you feel is necessary to ready
this for publication and return it to me.

Sincerely yours,

John H. Heller, M.D.
Executive Director

JHH:rmt

Enclosure

[ ans 11/7/57 ]

R.P. Nanavati,
Syracuse, New York.

18 July 1957

Dear Prof. Wiener,

I had the great pleasure of knowing you while I was at M.I.T. from 1950 to 1955. I remember with joy the conversation we had when you were in the M.I.T. infirmary just after you returned from India.

I am at the present time an Instructor at Syracuse University where I am doing my doctorate in electrical engineering. I am also at present a member of the Executive Committee and of the Programme committee of the Syracuse Peace Council which is a pacifist interfaith organization closely connected with the Friends Service Committee. We try to educate people in peace and peaceful solutions to the problems of today.

I have been asked by the committee to ask you to speak in a public meeting of Syracuse Peace Council about your views on peace as applied to the problems of today's world. The date may be chosen by you anytime between November and May.

We shall be glad to pay for your transportation to and from Syracuse by air and hotel bills. Being a somewhat poor (financially) organization we are unable to offer you anything more financially.

But I assure you that our interest in what you have to say in the area of peace is very rich.

We shall be very greatful to you if you accept our invitation. I shall be looking forward to hearing from you. Please send your reply to the following address:

R. P. NANAVATI,
c/o SYRACUSE PEACE COUNCIL,
841 UNIVERSITY BUILDING,
Syracuse, New York.

I am visiting with my folks in India for the next two weeks.

Yours truly,

R. P. Nanavati.

(R. P. NANAVATI)

[ ans 8/2/57 ]

PROF. NORBERT WIENER,
MASS. INST. OF TECH.
77 MASS. AVE.
CAMBRIDGE, MASS.
U.S.A.

South
TAMWORTH
NEW HAMPSHIRE

← First fold here →

Corr-66

Third fold here

Second fold here

Sender's name and address :—

R. P. NANAVATI

SHREE RAM KUND,

12th ROAD KHAR,

BOMBAY. INDIA

V. RAMANUJAN. 9, Oriental Hotel,
                    Darshani Gate,
                    Dehra Dun
                    INDIA
                    18. 7. 1957.

Dear Sir,

         May I introduce myself
as the second son of the late
Dr. T. Vijayaraghavan.

         You will remember that when
you came over to Madras a few years
back, I was doing my B. Sc Physics
in Madras. I graduated with a
First class in March 1954.

         Immediately afterwards I
enrolled myself as a student of
Faculty of Instruments Technology
of the Madras Institute of Technology,
India. I completed the three year
course in April 1957 securing a high
Second class. I am now undergoing
the post completion training in the
Govt. Ordnance factory here.

         I would very much like to undergo
an advanced course of studies in either
in Applied Optics or Applied Physics
at some American University.

         I should very much like to
know whether it will be possible for
me to get a suitable Fellowship
which would enable me to maintain
myself there.

         I hope I won't be troubling
You too much if I request
You to advise me on this point.

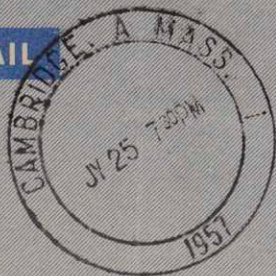         With kind regards and respectful
greetings,
                    Yours Sincerely,
                    Ramanujan.

P. S.
         I am now eligible for the Diploma,
Madras Institute of Technology.
                    R.

[ans 8/1/57]

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES
ALLOWED

12 AS    INDIA POSTAGE

Corr - 66

Dr. Norbert Weiner,
Professor of Mathematics,
Massachusetts Institute of
Technology,
Massachusetts,

SOUTH
TAMWORTH

NEW
HAMPSHIRE

U.S.A.

← First fold here →

← Second fold here →

To open cut here →

Sender's name and address:—

V. Ramanujam,
9, Oriental Hotel,
Darshani Gate,
Dehra Dun.
INDIA.

To open cut here →

57B8035

CV/CL

PARIS, le 19 JUILLET 1957

Professeur Norbert WIENER
M.I.T.
CAMBRIDGE 39
Massachusetts     U.S.A.

"LA METHODE DANS LES SCIENCES MODERNES"

Cher Monsieur,

      Nous vous devons quelques explications à propos du
délai que les circonstances nous ont imposé quant à l'édition
de cet ouvrage, auquel vous avez bien voulu collaborer.

      La qualité de notre entreprise ne nous permettait
pas de formuler des exigences impératives à l'égard des auteurs,
tous éminents, et dont certains n'ont pu nous remettre leur
texte aussi vite qu'il eût été désirable. De plus, le caractère
international de l'oeuvre entraînait des contacts difficiles qui
ont également contribué à aggraver ce retard.

      Nous avons enfin reçu le dernier texte et tout est
maintenant à la composition chez l'imprimeur.

      Nous espérons ainsi pouvoir mettre l'ouvrage en
vente à l'automne.

      Dernier point : il vous intéresserait probablement
que nous prospections certains milieux de nature à s'intéresser
à l'achat de ce livre ; si vous voulez bien nous en donner la
liste, nous ferons tout le nécessaire possible pour vous donner
satisfaction.

                                 ... / ...
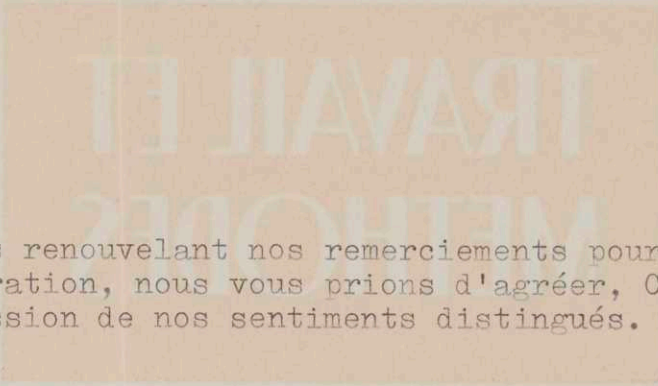
En vous renouvelant nos remerciements pour votre
précieuse collaboration, nous vous prions d'agréer, Cher
Monsieur, l'expression de nos sentiments distingués.

Le Rédacteur en Chef :

Charles VORAZ

70 Menemet Road
Newton Center, Mass
20 July 1957

Dear Prof. Wiener –

Enclosed is a reprint which you may find amusing.

I have left the Signal Corps, as you can see by the address above, and start working for Edgerton, Germeshausen, & Grier on 22 July. They are at 160 Brookline Ave., Boston 3.

Best wishes for an enjoyable summer.

Sincerely,
Jerome Rothstein

South Tamworth
                                        New Hampshire
                                        July 20, 1957


Mr. G. V. Bedekar, I.C.S.
Secretary to the Government of Bombay
Education Department
Secretariat, Bombay 1, India.

Dear Mr. Bedekar:

        I am writing to support Dr. P. Masani's application
for leave of absence to teach at Harvard and Boston
University the coming year and for a grant in aid.  Dr.
Masani and I have engaged in several months' work
together year before last at the Statistical Institute
in Calcutta, and as a result we have written two long
papers for Acta Mathematica in Sweden.  I find Dr. Masani
a first-rate, original and sincere mathematician, and
our joint work has been fully as profitable to me as it
has been to him.  I strongly support his application and
am looking forward to a year of cooperative work.

                                Sincerely yours,



                                Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 20, 1957


Dott. Paolo Bonetti
Scientia
Via Roncaglia 4
ASSO (Como), Italy

Dear Dr. Bonetti:

        I have not done any work on the article which you
have requested for Scientia, but I may be able to take
up the matter again this autumn.  Please write me again
in more detail as to what you want, some time in
September.

                        Sincerely yours,


                        Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 20, 1957

Mr. John Gilmore, Sales Manager
Kay Electric Company
Maple Avenue
Pine Brook, New Jersey

Dear Mr. Gilmore:

I am up in the mountains away from all apparatus
and working up a paper on brain waves which I expect
to appear in the Johns Hopkins Press next autumn.
After it appears I think it would be a good idea if
we got together to talk about details of instrumentation
and their improvements from your point of view.

Sincerely yours,


Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 20, 1957


Mr. John H. Kyle, Editor
The Johns Hopkins Press
Homewood
Baltimore 18, Maryland

Dear Mr. Kyle:

I thank you very much for your interest in my
manuscript on brain waves. I am enclosing a carbon
copy of that part of it which I have now done. It will
have to be supplemented by a great deal of detailed
work, largely mathematical, on which I am still
spending my efforts. If it will still be of interest
to you I shall be glad to give you the manuscript.

Sincerely yours,


Norbert Wiener

NW:jc

Enclosure


[ans 7/30/57]

South Tamworth
New Hampshire
July 20, 1957


Dr. P. Masani
Mathematics Department
The Institute of Science
Bombay 1, India

Dear Masani:

I am so delighted to hear that we shall probably be
able to work together next year.  I have sent supporting
letters to the various addresses you mentioned.  I am
counting on a good year together.

Sincerely yours,


Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 20, 1957


Dr. Miss S. Panandikar
Acting Director of Education
State of Bombay
Poona 1, India

Dear Dr. Panandikar:

I am writing to support Dr. P. Masani's application
for leave of absence to teach at Harvard and Boston
University the coming year and for a grant in aid.
Dr. Masani and I have engaged in several months' work
together year before last at the Statistical Institute
in Calcutta, and as a result we have written two long
papers for Acta Mathematica in Sweden. I find Dr. Masani
a first-rate original and sincere mathematician, and
our joint work has been fully as profitable to me as it
has been to him. I strongly support his application
and am looking forward to a year of cooperative work.

                        Sincerely yours,


                        Norbert Wiener

NW:jc

South Tamworth
New Hampshire
July 20, 1957

Mr. Steven A. Seiden, Program Director
Lido Hotel
Lido Beach, New York

Dear Mr. Seiden:

I should like my broadcast to be put off as late
as possible and actually to a later date than any
which you name. The beginning of the new term is a
terrifically busy time with me and I have already covered
that period with several engagements. It is highly
desirable that I undertake not more than one lecturing
engagement a week.

Sincerely yours,

Norbert Wiener

NW:jc

[ans Ca. Aug 1957]

South Tamworth
New Hampshire
July 20, 1957

Miss Isabella Thoburn
Executive Secretary
U. S. Educational Foundation
17 Curzon Road
New Delhi, India

Dear Miss Thoburn:

I am writing to support Dr. P. Masani's application
for leave of absence to teach at Harvard and Boston
University the coming year and for a grant in aid.
Dr. Masani and I have engaged in several months' work
together year before last at the Statistical Institute
in Calcutta, and as a result we have written two long
papers for Acta Mathematica in Sweden. I find Dr. Masani
a first-rate, original and sincere mathematician, and
our joint work has been fully as profitable to me as it
has been to him. I strongly support his application and
am looking forward to a year of cooperative work.

Sincerely yours,


Norbert Wiener

NW:jc

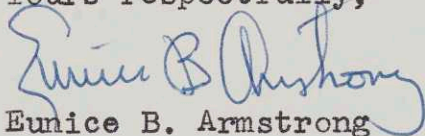MRS. DONALD BUDD ARMSTRONG    SCARBOROUGH-ON-HUDSON, NEW YORK   USA

July 22, 1957

Dear Dr. Wiener:

I was so pleased to see your enthusiastic
comment on Dr. Bronowski's article in a
recent "Nation."  You may be away for the
summer, but I hope this letter will be
forwarded to you because I know you are a
man not frightened by new ideas and willing
to expose yourself to criticism when you
support those ideas.

The enclosed "World Wealth Instead of War"
is a new way to prevent war.  It is only
a stop-gap proposal, but at least it makes
man's survival possible for four years,
and survival is the sine qua non, is it not?
I hope you will find time to read it.
Many physicists and economists have commented
favorably on it.

Yours respectfully,

Eunice B. Armstrong

[ans 8/9/57]

ONR:455:PGC:cav
22 July 1957

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

Dear Doctor Wiener:

Your organization is invited to send representatives to the Fifth Annual Human Engineering Conference to take place 26-27 September in Tulsa, Oklahoma.

This Conference is held by the Office of Naval Research in keeping with its mission of coordination of research and development within the Navy. The program, classified CONFIDENTIAL, will be centered around the theme "Human Engineering for Future Military Systems." The program should be of interest to in-service activities and government contractors.

It is requested that attendance be limited to the number of enclosed Security Forms. Please complete a copy of the Security Form (enclosure 1) for each representative, and send it to CAPT C. A. Sturtevant, Security Officer, Douglas Aircraft Company, Tulsa, Oklahoma, via your own Security Officer. The Registration Form (enclosure 2) should be returned to the Office of Naval Research (Code 455). It is requested that these forms be completed and forwarded as soon as possible, but certainly by 1 September 1957.

General information on hotel accommodations, transportation, and social functions is given in enclosure 3. The Tentative Program is contained in enclosure 4.

Sincerely yours,

MAX W. LUND, Head
Engineering Psychology Branch
By direction of
Chief of Naval Research

Encl:
(1) Security Form
(2) Registration Form
(3) General Information
(4) Tentative Program

[my co. 8/27/57]

<u>REGISTRATION FORM</u>

FIFTH ANNUAL
HUMAN ENGINEERING CONFERENCE

Sponsored by the Office of Naval Research


MAYO HOTEL
TULSA, OKLAHOMA

26-27 September 1957

Name of                                          Organization and
<u>Representative</u>                             <u>Mailing Address</u>

1.



2.



PLEASE RETURN THIS REGISTRATION FORM IMMEDIATELY   (Deadline 1 September)

    TO:    Office of Naval Research
          Engineering Psychology Branch (Code 455)
          Department of the Navy
          Washington 25, D. C.

    NOTE:  Please indicate the number of representatives who would like
          the complete dinner on Thursday evening, 26 September.
          For details, see the General Information sheet (encl. 3)


          Number _____.

<u>SECURITY FORM</u>
FOR
ATTENDANCE AT THE FIFTH ANNUAL HUMAN ENGINEERING CONFERENCE

Date _____

INSTRUCTIONS TO REPRESENTATIVE:  Fill out (type or print) Part I and send this form
to your local Security Agency for execution of Part II.  The Security Agency is
that agency having local security responsibility for current contracts with the
Department of Defense.

<u>PART I</u>
Name of Representative (Last, First, Middle)     Title or Rank (Dr., Capt., etc.)


Organization and Mailing Address (Company, Laboratory, Bureau, etc.)




PERSONAL HISTORY

Date of Birth (Year, Month, Day)          Place of Birth (City, State; Country
                                                 if outside U.S.A.)

Citizenship (U.S. or other)            Occupation

Residence Address (Street Number, City, State)




Military Security Clearance Level      Basis of Security Clearance
(as of date of this Form)              (BI, NAC)



Signature of Representative

* * * * * * * * *

<u>PART II</u>           CERTIFICATION BY LOCAL MILITARY SECURITY AGENCY

INSTRUCTIONS TO SECURITY OFFICER:  The Security Officer is requested to certify
and forward this form to:
                         CAPT C. A. Sturtevant, Security Officer
                         Douglas Aircraft Company
                         Tulsa, Oklahoma


The Security Clearance of the above individual is certified as correct and valid
as stated herein.

Name of Security Agency          Signature of Security Officer, Date

GENERAL INFORMATION

## HOUSING INFORMATION

The Mayo Hotel is at 115 West 5th Street, Tulsa, Oklahoma.  Since all
meetings will be held there, we recommend that you write for reserva-
tions immediately.  The Mayo Hotel has been informed that reservations
will be made by delegates on an individual basis.  It will send any
overflow reservations to the nearby Adams Hotel.  Rates at the Mayo
Hotel are:

        Single Room     $8, $9, $12
        Double Room with Double Bed  $11, $14, $15
        Double Room with Twin Beds   $12, $14, $16

The lowest rates are for rooms on the inside court (most quiet); the next
highest rates are for outside rooms, and the highest rates are for rooms
on corners.  Suites are available at rates up to $75.

## TRANSPORTATION INFORMATION

No special local transportation arrangements will be made.  Air travel
into and out of Tulsa will be extremely tight.  Make your reservations
as soon as you possibly can.

## SOCIAL ACTIVITIES

The Social Hour will begin at the close of the afternoon sessions on
Thursday, 26 September.  Following this, dinner will be served to those
who want it.  The cost of the Complete Dinner will be $3.50.  Entree
choices will include chicken, ham steak, or turkey, with the usual peas,
etc.  If you would like dinner, please indicate this on the Registration
Form.  Tickets for the dinner may be bought at the Conference during
registration.  This dinner is not a banquet; there will be no after-dinner
speeches or any other kind of entertainment.  Both the Social Hour and
the Complete Dinner will be in the Mayo Hotel.

Enclosure (3)

<u>TENTATIVE PROGRAM</u>

FIFTH ANNUAL HUMAN ENGINEERING CONFERENCE - 26-27 SEPTEMBER 1957

<u>26 September - Morning</u>

0830-0900   Registration

0900-0930   Greetings - ONR and Douglas Aircraft Corporation

0930-1100   Panel - Effects of Acceleration on Performance in Future Man-
            Machine Systems
                Chairman:  John L. Brown, Aviation Medical Acceleration

1100-1130   Break

1130-1230   Presentation - Long Range Submarine Program  (Human Engineering
            Part)
                Chairman:  C. C. Brock, Jr., Office of Naval Research

1230-1400   Lunch

<u>26 September - Afternoon</u>

1400-1530   Panel - Human Factors Problems in Air Travel of the Future
                Chairman:  Jack A. Kraft, Lockheed Aircraft Corp.,
                Georgia Division

1530-1600   Break

1600-1700   Four Group Conferences - (Topics to be announced later)

1800        Social Hour and Dinner

<u>27 September - Morning</u>

0900-0930   Registration

0930-1030   Invited Address (Speaker to be announced later)

1030-1100   Break

1100-1230   Panel - Future of Human Engineering (What will I be doing ten
            years from now?)
                Chairman:  Franklin V. Taylor, Naval Research Laboratory

<u>27 September - Afternoon</u>

1400-1530   Panel - Human Engineering Problems in Future Air Traffic Control
            Systems
                Chairman:  Douglas Courtney, Courtney and Company

1530-1600   Break

1600-1700   Four Group Conferences (Topics to be announced later)

Enclosure (4)

34, Volks Street,
Volksrust, Tvl.,
South Africa.
22 July, 1957.

Prof. Norbert Wiener,
53, Cedar Road,
Belmont, Mass.,
U. S. A.

Sir,

I believe you edited a book on the relations between the scientist and humanity in general which included a chapter entitled, "Scientists are Lonely Men.". Could you kindly advise me what is the name of the book and the publisher concerned.

Furthermore, I would like to know what the price would be of an autographed photo of yourself which would be suitable for framing, i.e. about 6" x 10" ?

Thank you,

W. P. Uys

W. P. Uys.

[ans 8/13/57]

Prof. Norbert Wiener,     S Tamworth

53, Cedar Road,              N.H.

Belmont, Mass.,

U. S. A.

W. P. Uys,

34, Volks Street,

Volksrust, Tvl.,

South Africa.

Summer address:
South Tamworth
New Hampshire

Mr. Max W. Lund, Head
Engineering Psychology Branch
Office of Naval Research
Department of the Navy
Washington 25, District of Columbia

                    Re:   ONR:455:PGC:cav
                          22 July 1957

Dear Mr. Lund:

        I shall be unable to participate in the Fifth
Annual Human Engineering Conference to take place
26-27 September in Tulsa, Oklahoma.  I do not know
what you mean by speaking of my organization.  If
you mean the Massachusetts Institute of Technology,
I am not in an administrative position and am not a
suitable person to whom to send such an invitation.
There is no other organization which can be called
my organization in any sense.  I have not asked for
clearance and do not intend to ask for clearance.

                    Sincerely yours,


                    Norbert Wiener

NW:jc

Tans 8/13/57

C O P Y

South Tamworth
New Hampshire
July 22, 1957

Dr. Marvin Stern
Associate Professor of Psychiatry
New York University College of Medicine
477 First Avenue
New York 16, New York

My dear Dr. Stern:

        I regret very much that when I wrote to you
last I did not look sufficiently into the schedule of lectures
which I had already accepted.  Next November I have already
accepted an invitation to talk to the Virchow Society in
New York.  I am under a strict injunction from my doctor not
to give more than one public address a month.  I regret very
much the inconvenience to which my inadvertence has subjected
you.  I wish to convey to you my sense of having been highly
honored by you.

                        Sincerely yours,


                        Norbert Wiener

NW:jc

# KAY ELECTRIC COMPANY

July 24, 1957

Mr. Norbert Wiener
South Tamworth
New Hampshire

Dear Mr. Wiener:

I have your letter of July 20, 1957. I would like to get together with you concerning details of instrumentation.

Incidentally, I have a farm in Canterbury, New Hampshire, telephone Story 3-6344. I am usually there over the weekends, (Saturday and Sunday), and would be glad to hear from you.

Very truly yours,

KAY ELECTRIC COMPANY

John Gilmore
Sales Manager

JG:gs

# Rensselaer Polytechnic Institute

## TROY, NEW YORK

Department of Language
and Literature

July 25, 1957

Professor Norbert Wiener
Mathematics Department
M. I. T.
Cambridge, Massachusetts

Dear Professor Wiener:

This is a request for permission to use the following quotations in a textbook called the Uses of Language which Professors W. K. Brown, Douglas Washburn, and I are now preparing:

"Messages are themselves a form of pattern and organization....Just as entropy is a measure of disorganization, the information carried by a set of messages is a measure of organization...."

The Human Use of Human Beings

"Normal communicative discourse, whose major opponent is the entropic tendency of nature itself, is not confronted by an active enemy, conscious of its own purposes. Forensic discourse, on the other hand, such as we find in the law court, in legislative debate, and so on, encounters a much more formidable opposition, whose conscious aim is to qualify and even destroy its meaning. Thus an adequate theory of language as a game should distinguish between these two varieties of language, one of which is intended primarily to convey information and the other primarily to impose a point of view against a willful opposition."

The Human Use of Human Beings

Professor Norbert Wiener      - 2 -        July 25, 1957


        The book in which these quotations will appear will
be copyrighted by us and produced locally for experimental
use with our own classes this fall.  Assuming that it is suc-
cessful, it will later be offered to a publisher.

                        Sincerely yours,

                        Sterling P. Olmsted, Head
                        Department of Language and
                                Literature

spo:sdo

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS
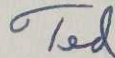
July 26, 1957

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Professor Wiener:

In regard to Masani I am glad to say that Dean
Harrison has authorized our Department to invite
Masani here for the academic year 1957-58 as Visit-
ing Lecturer. As you know, Harvard has offered
Masani an appointment to teach one course there. I
have just sent Masani our offer. The plan would be
for him to teach one course at Harvard, one here, and
devote the rest of his time to seminars and research
here.

I hope that you and Mrs. Wiener are having a
pleasant vacation. Lucy, I, and our three youngest
boys will be vacationing in Maine August 1-26.

Very sincerely yours,

Ted

W.T. Martin

maf

South Tamworth
New Hampshire
July 27, 1957


President Howard R. Bowen
Grinnell College
Grinnell, Iowa

Dear President Bowen:

I am honored to accept your invitation to receive
an honorary doctorate at your College. I shall come to
your Convocation during the period of October 25-27, and
shall speak on the role of mathematics as a scientific
tool. As you suggest the matter of honorarium, let me
name the sum of $250, plus traveling expenses.

Sincerely yours,


Norbert Wiener

NW:jc

[ans 7/6/57]

South Tamworth
New Hampshire
July 27, 1957


Prof. Dr. jur. Ulrich Klug
Karlsruhe
Germany
Kriegsstr. 152

Dear Dr. Klug:

    It is already standard practice to set up
problems in the algebra of logic on suitable
computing machines, dependent on sequences of
switching operations.  While I am not aware that
any explicit use has been made in juristic
problems, such a use is certainly possible.

    As I am up in the White Mountains on
vacation, I do not have at present access to
whatever publications may have been made on the
subject.  I suggest that you write to
Dr. Claude Shannon at the Massachusetts Institute
of Technology, Cambridge, Massachusetts.

                    Sincerely yours,


                    Norbert Wiener

NW:jc

155 Bay State Road
Boston 15, Massachusetts
July 28, 1957

Dear Dr. Wiener,

 I am an M.I.T. junior looking
for advice and I feel that you
are in a position to offer it to
me.

 Last October I left M.I.T. I
had found that I could not study
and I was unwilling to waste
my time. My freshman year
had been easy; I had been well
prepared at the Phillips Exeter
Academy. In February I returned
to school and a month later
I entered psychoanalysis. My term
was very unsatisfactory, though I
am still in good standing in
the eyes of the Institute.

 I believe that psychoanalysis

will give me the ability to study,
but analysis is a slow process.
I am very anxious to discuss
my immediate problem with you:
How can I spend the first year
or two of analysis to my best
advantage?

Would it be possible for
me to see you in the near
future in South Tamworth? I
can drive up on any day but
a Thursday that is convenient
for you.

Thank you.

Sincerely yours,
John Saul

[ans 8/13/57]

July 30, 1957


Dr. Norbert Wiener
South Tamworth
New Hampshire


Dear Dr. Wiener:

  First my apologies for disturbing you on
your vacation, particularly since I can not even plead
a social acquaintance of the cocktail party variety.

  I might claim your acquaintance through
several of your books but this I'm afraid is shared
with a few hundred thousand others.

  Briefly, I run a teachers agency - a good
one, I hope.  Yesterday I registered a somewhat over-
bearing, pompous, self-centered brillant pup.  At 29
his background includes a masters in applied math,
another in electrical engineering (electronics) a
third one in pure math and a doctorate from the
University of Graz.in Engineering.  This he tops with
some two years under Rudolf Rigler of the Physiological
Institute at Graz.

  While my first impulse was to drown him I
felt this would be as much of a waste as it would be
to have him teaching undergraduate courses.  What I am
asking is to have you assume my function for a moment.
Where do you think a man like Plotnick might fit - which
of the schools are doing work in cybernetics?  I should
add that he has some three years of teaching experience
and was a senior researcher while at Penn State.

  It is a matter of professional pride which
asks me to ask your advise.  Needless to say I would
appreciate any suggestions you might make.


      Sincerely,

      *Gabriel James*

[ans 8/5/57]

Professor Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 39. Mass.                    30 July 1957

Dear Professor Wiener

On the 6 June 1957 we sent to you, together with certain informative literature, an invitation to contribute to our forthcoming Encyclopaedic Dictionary of Physics. We trust this reached you safely.

We are taking great pains to ensure that the dictionary will be a publication redounding to the credit of all who co-operate in its preparation, and we should be very pleased to hear that you can contribute. If, however, you are unable to do so, would you be kind enough to suggest someone else we could approach?

I am enclosing a copy of the prepublication leaflet, and specimen pages of the Encyclopaedic Dictionary of Physics, and a booklet of Instructions to Contributors in case you did not receive our first invitation. I also enclose a stamped post card for your reply.

Yours truly

*Anna John*

Anna John

ENCYCLOPAEDIC DICTIONARY OF PHYSICS

[ans 8/20/57]

# PERGAMON PRESS

# DICTIONARY OF PHYSICS

Editor in chief: J. Thewlis D.Sc. F.Inst.P.

Associate editors: D. J. Hughes (Brookhaven) and A. R. Meetham (Teddington)

**ÅNGSTRÖM.** Symbol Å. A unit of length: the international ångström is defined by assigning the value 6438·4696 Å to the wavelength of the cadmium red line in dry normal air at 15°C and standard atmospheric pressure. It is $10^{-8}$ cm to within two parts in $10^7$.

<div align="right">B.S.I.</div>

**ATOMIC SCATTERING FACTOR.** The atomic scattering factor expresses in a quantitative form the way in which an atom, assumed to exist singly and divorced from any neighbouring atoms, scatters radiation when a beam of X rays, electrons, neutrons, or any other form of radiation falls upon it. It defines, in particular, the way in which the magnitude of the scattered radiation varies with direction—that is, how it depends on the angular relation between the incident and scattered beams. The concept is of particular importance in the study of crystal structures by the methods of X ray, electron, or neutron, diffraction. There is a formal similarity in the treatment of the topic in each of these three cases, but the result is determined by the physical principles of the scattering process, and these are quite different for the different radiations.

*X rays.* When a beam of X rays falls upon an atom it is the cloud of extranuclear electrons which scatters the beam: the scattering by the nucleus is negligible. The scattering by a single free electron was first calculated by J. J. Thomson who showed, using classical electrodynamics, that at a distance $r$ from the electron the amplitude $A$ of the scattered wave was given by

$$A = - A_0 \frac{e^2}{mc^2} \frac{1}{r} \sin\phi \qquad (1)$$

where $e$, $m$ are the electron charge and mass, $c$ is the velocity of light, $A_0$ is the amplitude of the incident wave, and $\phi$ is the angle between the direction of travel of the scattered beam and the direction of vibration in the incident wave. The negative sign in the equation means that there is a phase change on scattering of 180°. The scattered wave from an atom will be built up from the contributions from all the extranuclear electrons (which will be equal in number to $Z$ the atomic number). In the forward direction all the contributions will be in phase, giving a resultant scattered amplitude equal to $ZA$. However, as the angle between the incident and scattered directions increases the amplitude falls off because the dimensions of the electronic cloud are comparable with the wavelength of the X rays, and the contributions from

different parts of the cloud will cease to be in phase. We can write the amplitude as $fA$, thus defining the atomic scattering factor $f$ appropriate to the particular angle. For a given atom the rate of fall depends on $(\sin \theta)/\lambda$ where $2\theta$ is the angle between the incident and scattered directions and $\lambda$ is the wavelength of the radiation, $\theta$ itself usually being called the *Bragg angle*. The curve which shows the variation of $f$ with the function $(\sin \theta)/\lambda$ is called the *f curve* of the atom, and this curve will approach the value $Z$ as $\theta$ approaches zero. Alternatively we can define an *atomic form factor* as the quantity $f/Z$, and this will approach the value unity as $\theta$ approaches zero. Moreover it will be seen from the equation above that we can define the atomic scattering factor briefly by saying that "the scattered amplitude due to a given atom is $f$ times that due to a single classical electron under identical conditions."

In order to calculate the $f$ curve of any particular atom it is necessary to know the distribution of electric charge in the electron cloud. Equally it will be seen that if the $f$ curve can be determined experimentally then we can get direct information about the distribution of electrons in the atom. The first calculations of $f$ curves were done by Hartree in 1925 using the original Bohr orbital theory of the atom: these were superseded by Hartree's later calculations on a quantum-mechanical basis, but the calculations are very lengthy and have only been done for relatively few atoms, mostly light atoms. For atoms with atomic numbers not greater than about 25, James and Brindley devised a method of interpolation between the Hartree values for heavier and lighter atoms. The $f$ curves obtained in this way are known as *James-Brindley curves* and they are widely used by X ray crystallographers. Fig. 1 shows a typical curve, that for a potassium ion $K^+$. For heavier atoms, where $Z$ is greater than about 20, $f$ curves have been derived by a second, simpler, method due to Thomas and Fermi independently. This latter method, by ignoring the finer detail of the fields of particular atoms, amounts to a way of deriving the $f$ curves of all atoms if the curve of any atom is known, by suitably scaling the abscissae and ordinates, and is adequate for the heavier atoms. For most purposes our knowledge of atomic scattering factors for X rays is sufficiently accurate, but it is clear from experimental data that the assumed electronic distributions are not entirely correct, particularly for light elements, and may depend significantly on atomic environment also. More refined quantum-mechanical

<div align="center">1</div>

calculations have been done in certain cases, for example by McWeeny for carbon.

It has been represented above that the scattering depends on the wavelength of the X rays only so far as the wavelength determines the value of $(\sin\theta)/\lambda$. This is true only if the frequency of the radiation is large compared with any natural absorption frequency of the atom. This can be assumed for the scattering by light elements in crystal analysis using wavelengths such as $CuK\alpha$. It is, however, unjustifiable in many practical cases such as the diffraction of $CuK\alpha$ radiation by alloys which contain Cu, Zn, Fe, or Mn. When the radiation has a frequency close to an absorption edge of an atom the value of $f$ may be considerably changed and the effect is usually known as *K-electron dispersion*. It has been calculated by HÖNL and shown to depend on $\lambda/\lambda_K$, the ratio of the wavelengths of the incident radiation and of the K-absorption edge of the scattering element, and on a factor $\delta_K$ which is a parameter characteristic of the
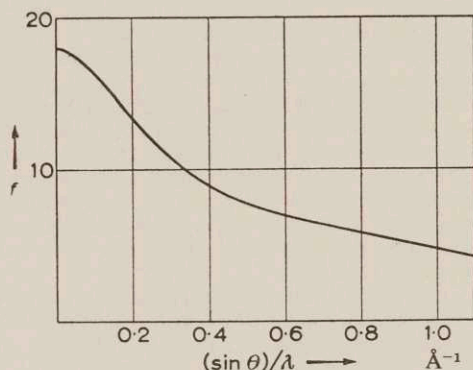


*Fig.* 1. *The f curve for the scattering of X rays by the potassium ion* $K^+$.

scatterer which is in turn determined by its atomic number and $\lambda_K$. As an example it can be shown that when $CuK\alpha$ radiation is scattered by Ni the value of $f$ for the latter is reduced by about 3·5, and this reduction is independent of the value of $\theta$, to a first approximation. For heavier elements correction may be necessary for dispersion by $L$ electrons.

It is emphasized that the atomic scattering factor which we have discussed gives the scattering by an individual isolated atom or ion which remains stationary in position. When we consider an assembly of atoms in a solid, these will be in oscillation because of their thermal energy and they will each undergo random displacements about a mean position. The amplitude of vibration can be expressed in terms of a *Debye temperature factor B*, such that $B = 8\pi^2\overline{U^2}$ where $\overline{U^2}$ is the mean-square displacement of an atom. The result is that so far as coherent reflections are concerned the atomic scattering factor is reduced to an effective value $f_{\text{eff}}$ given by

$$f_{\text{eff}} = f\exp(-B\sin^2\theta/\lambda^2). \qquad (2)$$

It should be noted that $f_{\text{eff}}$ is not a fundamental quantity associated with the atom, since it is different for different compounds of the atom being studied and, moreover, varies with temperature since the latter determines the value of $B$. In attempting to deduce the value of $f$ from experimental data, for comparison with theoretical predictions, due allowance has to be made for this effect of thermal vibrations.

*Electrons.* A similar concept of atomic scattering factor is used in electron diffraction, although the relative difficulty of determining it experimentally, compared with x-ray diffraction measurement, has resulted in much less detailed knowledge. When electrons are diffracted by atoms it is the electric potential within the atom which is significant, with the result that both the nucleus and the surrounding electron cloud contribute to the scattering, since they both carry a charge. It can be shown that when an electron wave of unit amplitude falls on an atom then the amplitude of the scattered wave at unit distance is equal to

$$\frac{e^2}{mv^2}\frac{1}{\sin^2\theta}(Z-f) \qquad (3)$$

where $v$ is the electron velocity and $f$ is the atomic scattering factor for X rays: this expression can be written in the alternative form

$$\frac{e^2}{2h^2}\frac{\lambda^2}{\sin^2\theta}(Z-f) \qquad (4)$$

where $h$ is Planck's constant, which shows that the scattered amplitude is a function of $(\sin\theta)/\lambda$ as it is for X rays. This quantity, or sometimes simply the quantity $(Z-f)\lambda^2/\sin^2\theta$, is the atomic scattering factor for electrons, and its variation with $(\sin\theta)/\lambda$ has been termed the *E curve*, by analogy with the *f* curve for X rays.

*Neutrons.* When we consider the way in which an atom scatters a beam of thermal neutrons, as in the determination of crystal structures by neutron diffraction, it is the nucleus which is the important scatterer. Only in the case of atoms which have a resultant magnetic moment is there any significant contribution from the extranuclear electrons. Quantitatively the nuclear scattering depends on two factors: first, there is an effect which is determined by the physical size of the nucleus which may be regarded as behaving as an impenetrable sphere and giving so-called "potential scattering" with an amplitude proportional to the nuclear radius. The latter is approximately proportional to $A^{\frac{1}{3}}$, where $A$ is the atomic weight, and thus increases only slowly with increase of atomic weight. Superimposed on the potential scattering there is "resonance scattering", the amplitude of which depends on the position of the energy levels in the compound nucleus which we may consider to be formed from the bombarded nucleus and the incident neutron. The sign of this amplitude may be the same as or opposite to that for potential scattering, and varies widely from element to element, in a manner determined by the detailed structure of the nucleus, but which in the present state of knowledge can only be determined empirically by experiment. The resultant amplitude, from the potential and resonance components, will thus vary in a seemingly arbitrary manner with increase of atomic weight. The general behaviour is illustrated in Fig. 2, from which it will be seen that the

general level of scattering amplitude varies little throughout the periodic classification of the elements, although there may be marked differences between neighbouring elements and indeed between isotopes. For comparison the linear variation of the atomic scattering factor for X rays is shown in the same figure.
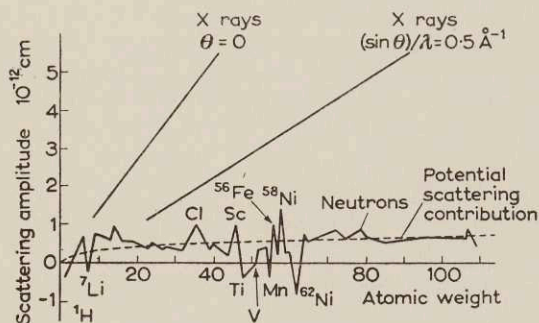


*Fig.* 2. *Irregular variation of neutron scattering amplitude with atomic weight due to the superposition of "resonance scattering" on the slowly increasing "potential scattering"; for comparison the regular increase for X rays is shown.* (From *Research,* vol. 7, p. 259.)

Formally we can write the amplitude of the scattered neutron wave at distance $r$ from the nucleus as $-A_0 b/r$, where $A_0$ is the amplitude of the incident wave. Here $b$ is the atomic scattering factor for neutrons and is thus equivalent to the quantity $fe^2/mc^2$ for X rays. Each of these quantities has the dimensions of a length, and $b$ for neutrons is often called the *scattering length*.

The atomic scattering factor for neutrons, $b$, does not depend on $(\sin\theta)/\lambda$ as do the corresponding factors for X rays and electrons. This is because the scattering nucleus has a diameter of the order of $10^{-12}$ cm, which is negligibly small in comparison with the neutron wavelength of $10^{-8}$ cm. Thus the nucleus acts as a point scatterer and the scattering is isotropic.

Finally, we recall our earlier remark that magnetic atoms give additional neutron scattering which is electronic in origin. This is described in the article "Magnetic scattering of neutrons". Here we merely wish to note that because the scattering is brought about by electrons in the outer shells of the extranuclear cloud it will show a form-factor dependence rather like that for X rays and quite different from the normal isotropic nuclear scattering of neutrons.

*See also:* Magnetic scattering of neutrons.

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            G. E. B.

**CALORIMETRY, BOMB.** Bomb calorimetry is a technique of measuring the heat evolved by chemical reactions. Its most important uses are for measuring the heats of formation of pure chemicals and the heats of combustion (*calorific value*) of samples of solid and liquid fuels and foods, and as a parameter from which the quality of explosive materials or propellants may be judged.

The advantages of using a bomb are that gaseous reagents can be compressed into a convenient space, the reaction occurs at constant volume, and the products are conserved. The main limitations are that, if the reaction is to be complete and reproducible, one and only one of the reagents must be a gas, the flame must not be cooled by solid surfaces, and the bomb or its lining must be nonreactive.

For accurate calorimetry, temperature equilibrium must be reached within 10 minutes from the start of the reaction, and the speed of secondary reactions may be important. For example, in the combustion of organic sulphur compounds in oxygen, both $SO_3$ and $H_2O$ are formed, the latter condensing as droplets on the entire inner surface; considerable heat is evolved by their combination to form $H_2SO_4$ and also by the dilution of sulphuric acid until an equilibrium solution is reached; this secondary reaction can be completed satisfactorily by rotating the bomb.

In general, chemical corrections are needed if results are to be reproducible in different circumstances, and if thermochemical data such as heats of formation are to be calculated. The heat of reaction at a constant temperature (usually 20°C or 25°C) must be found, and corrections must be made for the internal energy of the residual gas, water vapour, liquid water, and gases in solution such as carbon dioxide and nitric oxide. These are the *Washburn corrections*.

A bomb calorimeter capable of measuring 35,000 J of combustion heat with an error of a few joules is illustrated in the figure. The bomb, mass 3·5 kg, is charged with 10 g of oxygen at 30 atm, about 1 g of combustible (in pellets if solid, or sealed in a glass ampoule if liquid), and 1 g of water (to saturate the gas). The oxygen has been freed from hydrogen and hydrocarbons, but contains residual nitrogen whose combustion necessitates a correction of about 10 J. The charge is fired by fusing a fine Pt wire against it using 0·5 J of electrical energy, or by burning a few milligrams of iron wire or a hydrocarbon or carbohydrate near it, generating about 50 J.

The calorimeter vessel is completely sealed, the stirrers being driven by shafts passing through oil seals, and volume changes due to the thermal expansion of water during an experiment being taken up by alterations in the level of oil. Its mass, assembled with bomb and water, is over 10 kg, and is reproducible within 0·01 g. Temperatures are measured to 0·0001°C on an arbitrary scale with a platinum thermometer and a Smith No. 3 resistance bridge.

The outer jacket completely surrounds the calorimeter and is kept constant in temperature within 0·001°C, near
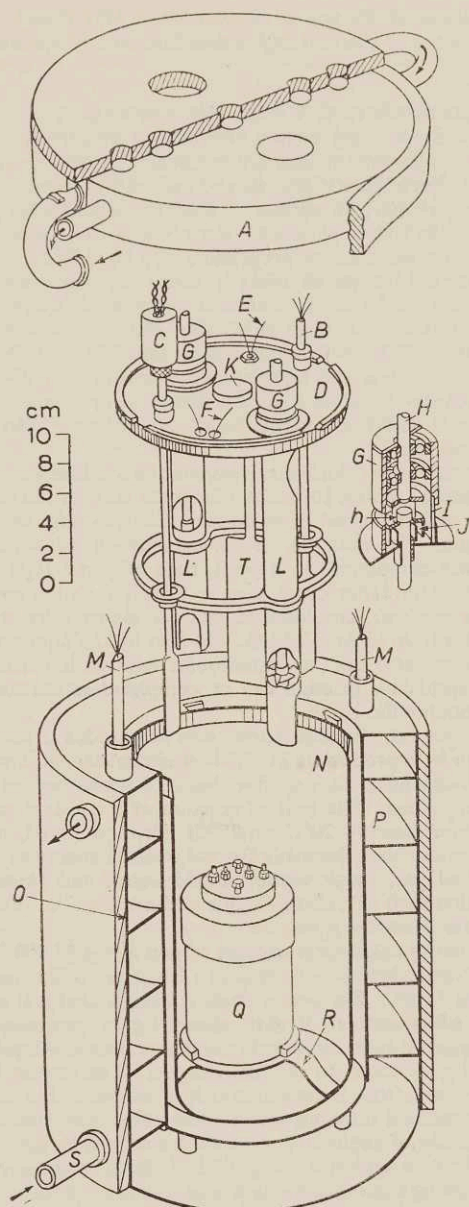
*N.P.L. No.* 1 *bomb calorimeter*

(Reproduced by permission of the Director, National Physical
Laboratory, Teddington)

A   Outer jacket half-lids with peripheral insulation of
    expanded rubber and upper insulation of cork. Tubing
    admits circulating water to labyrinth.
B   Fifteen copper and fifteen constantan leads from
    multiple-junction thermometer.
C   Four copper leads from platinum resistance thermo-
    meter.
D   Lid, tightly fitting to vessel *N*.

E   Two copper leads to manganin heater.
F   Two copper firing leads.
G   Brass housings of stirrer bearings.
H   Top of stirrer shaft coupled to constant-speed motor.
    At *h*, the shaft is thermally interrupted by a copper-
    nickel connector, 0·05 cm in wall thickness.
I   Glass tube, 0·1 cm in wall thickness.
J   Brass skirt, rotating in 1·5 cm³ of thin oil.
K   Additional oil seal containing 5 cm³ of thin oil.
L   Stirrer tubes. Vanes draw water into bottom of tube
    and throw it out through holes at side and top.
M   Glass stems of multiple-junction thermometers im-
    mersed in water of outer jacket.
N   Brass calorimeter vessel 0·16 cm thick, rhodium-plated
    and highly polished outside.
O   Double-walled brass outer jacket, rhodium-plated and
    highly polished on surfaces facing calorimeter. Sur-
    rounded by aluminium foil and air insulation.
P   Helical space in outer jacket for water circulation.
Q   Bomb, fully softened stainless-steel body and lid with
    aluminium-bronze locking ring. The lid carries two
    firing-lead connexions and two unions for inlet and
    exhaust of gas with two hard-chromed stainless-steel
    valves.
R   Brass tripod supporting bomb.
S   Water inlet to outer jacket.
T   Manganin wire heater.

24°C; the room is maintained at 22°C. The calorimeter
is initially near 23°C and finally near 25°C, and up to 1 W
flows between it and the outer jacket so that it exponenti-
ally approaches a temperature of about 24·3°C (not
24°C because of the heat of stirring). A correction for the
heat flow during a combustion is made first on the
assumption that the heat-transfer coefficient is constant,
and is afterwards modified on the basis of its observed
slight dependence on temperature.

The calorimeter is calibrated by passing 4 A for
4 min through a 10 Ω manganin wire heater, and observ-
ing temperature rise, current, voltage, and time. The
potentiometers, standard cells, current shunt, voltage
divider, and clock are accurately calibrated. Corrections
are made for the passage of current through the potential
leads, heat generated in the interspace between calori-
meter and outer jacket, and changes in heater resistance
in the first 10 s after switching on. In combustion
experiments, there are corrections for small differences in
heat-transfer coefficient and lag of the outer surface of the
calorimeter behind the thermometer, compared with
electrical experiments. A careful study is made of this
lag, and also of the heat transfers to the outer jacket and
the room, and the heat absorbed by materials in the
interspace.

Bomb calorimetry is much simplified by using a thermo-
chemical standard substance for calibration. Benzoic
acid is available whose heat of combustion, about
26 435 J/g, is known within a standard error of a few J/g.

*Other designs.* Further simplifications are possible if
errors of 1 to 5 parts in 1000 can be tolerated. For ex-
ample, the calorimeter is not sealed, though any obvious
heat transfer by the evaporation and condensation

July 30, 1957

Professor Norbert Wiener
South Tamworth
New Hampshire

Dear Professor Wiener:

Last week while I was away from the office the
first thirty-seven pages of your manuscript arrived.
Thank you.  While I know almost nothing about the
subject, I found it very interesting and was able to
follow it all the way through, except for some of the
more technical passages.

In order that we might best serve you, we would like
to ask you to fill out the enclosed questionnaire.
Though it is a chore, as Dr. Wintner well knows
(since he refused to fill one out for us two years
ago), it is a technical necessity, from our point of
view.

In addition to the information requested in the
questionnaire, we should also like to have your
guess at the completion date, say, within six months
or so.

We are very happy to be working with you.

Sincerely yours,

John H. Kyle

John H. Kyle
Editor

JHK/cs

[ans 8/13/57]

2702 1/2 S. Redondo Blvd.
Los Angeles 16, California
July 31, 1957

Prof. Norbert Wiener
South Tamworth  New Hampshire

Dear Prof. Wiener:

  You and your family were so kind to me on my
recent visit to your home, that I am at a loss for words
of thanks.

  It was an inspiration and a previledge for me
to have had the opportunity to share your thoughts on
those topics of our mutual interest.  As a direct result
of our talk I am undertaking an experimental program to
record the EEG of several laboratory animals and study
the effects that feeding back such patterns electrically,
(i.e. via electrodes on skull, or implanted on/in brain)
might have on the clock-like mechanism (i.e. spontaneous,
discharge rythm) which you discussed with me.

  I will keep you informed of the progress that
we make and would be grateful if you would inform  me
when you feel that your autocorrelation methods are per-
fected to the point where they may be employed to inter-
pret some of our recordings.

  I am returning to you under separate cover the
manuscript you so generously loaned me.

  I hope to have the great pleasure of meeting
with you again soon.  Until then I remain,

     Respectfully yours,

     *Walter Appleman, M.D.*

     Walter Appleman, M.D.

[ans 8/13/57]