June 2, 1941

President Frank B. Jewett
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C.

Dear Dr. Jewett:

On looking into the Bush matter more
carefully I am more convinced than ever that Polya
and Feller are the right people. Polya has done past
work on the closely related problem of what he calls
the contagion of probabilities and has carried it
through to a comparison with experimental results which
was extremely gratifying and far superior to anything
that existed before. Polya will be at the University
of California during the summer but I see no reason
why he could not undertake his research there. Feller,
as far as I know, remains at Brown University. I am
quite certain that you will have no difficulty to get
either or both men to do the work.

As to my relation to the problem I
feel considerable qualms at putting myself in a position
of administrative superiority to a man like Polya,
particularly as he has completed solving a closely
related problem and will unquestionably solve the main
problem in a matter of a very few weeks. I should prefer
if I am to have any connection with the work that it be
as a fellow member of a committee with Polya and Feller.
In any case if and when proper credit for this work is
to be made I wish in advance to disclaim any part of it.

I stand ready to be of any help that I
can to you in this or other projects in so far as the
demands on my time do not interfere with my principal
war problem.

Respectfully yours,

W/s   Norbert Wiener

June 2, 1941

Professor Roy C. Spencer
The Brace Laboratory of Physics
The University of Nebraska
Lincoln, Nebraska

Dear Professor Spencer:

I have been looking around my neighbor-
hood in the mountains and I know of one cottage at about
$125 for the summer, furnished with running water and
another more desirable in other ways but without running
water at $175 for the summer. I also know of at least
three places where board and room can be obtained from
$12 to $15 a week per person. Will you let me know when
you will be up here and I will take you up to the mountains
so that you can make your own decision? One man to whom
you could write is Mr. Sumner Clark, South Tamworth, New
Hampshire. He has one place for rent and knows of others.
He is a thoroughly reliable person and is a friend of ours.

                    Sincerely yours,

W/s   Norbert Wiener

June 6, 1941,
Institute for Advanced Study,
Princeton, N.J.

Dear Professor Wiener,

I thank you heartily for your kind letter
of May 29. I am very glad to receive it. Please pardon me
for my long delay in answering you.

It is very kind of you to have invited me to
White Mountains, and to have found me the rooms to stay. I
am very happy that I can spend a part of my summer vacation
by your side. If it is possible for me, I should like to
spend the whole summer by your side; but I have something to
do at Princeton, and I think I can stay at your place for
two weeks. More precisely:

I shall spend the last week of July and the
first week of August at your place. I should be very happy,
if you would kindly arrange me the room. Among the rooms
which you so kindly suggested me, that one of $15 a week
seems to be the best one.

It is a nice news that Professors Wintner and
Kline will also at White Mountains. I understand that
you will be too busy this summer, and I do not wish to occupy
much of your time. But I believe that there are many things
which I must learn from you, and I am sure that my stay at
your place will be the most fruitful days of this year.

It is extremely nice to be able to work under
you on the problems of measure and probability. I am looking
forward to the days when I shall be at White Mountains.
Please extend my cordial regards to Mrs. Wiener.

Yours sincerely,

Shizuo Kakutani

MRS. JOHN EXTER
EXECUTIVE SECRETARY
32

June 6, 1941

Dear Professor Wiener:

All of those present at the meeting here last Tuesday have agreed to serve on a GENERAL SPONSORING COMMITTEE for the United China Relief Campaign in Boston. As you were unable to be there, Mr. Allan Forbes has asked me to request your help as a member of this Committee, so that the drive may have the unanimous support of the participating agencies.

May we assume, unless you notify us to the contrary on the enclosed postcard, that you are willing to join? Will you also please indicate whether you are interested in any particular kind of campaign work? Similar cards were signed by about 35 men and women on Tuesday.

The general prospects seem very encouraging. Asked by the various boards to appoint an EXECUTIVE COMMITTEE, Mr. Forbes has met with no refusals at all, and has already enlisted: Mr. Oliver Wolcott, Secretary; Mr. Lloyd D. Brace, Treasurer; Mr. Phillips Ketchum, Mr. G. Peabody Gardner, Mrs. Arthur W. Hartt, Miss Frances G. Curtis, Mr. Russell Robb, Mr. Francis Gray, Mr. John Kiley, Mr. Wynn C. Fairfield, and Mr. Ralph Lowell. They do not propose a campaign on Community Fund propositions, but hope to secure some generous help for China by a plan which includes the solicitation of special gifts, one or more public events, and a general mail appeal.

Sincerely yours,

Marion F. Exter.

For Allan Forbes,
Organizing Chairman,
UNITED CHINA RELIEF, Boston

June 9, 1941

Mrs. John Exter
Executive Secretary
American Bureau for Medical Aid to China, Inc.
87 Beacon Street
Boston, Mass.

Dear Mrs. Exter:

I was sorry to miss your meeting last
Tuesday. The fact is that I am on work for the National
Defense Research Council and was forced to be out of
town on the date in question.

As to the general sponsoring committee
for the United China Relief Campaign in Boston, I shall
be glad to participate but I am afraid that I shall have
to be a sleeping member inasmuch as I am heavily loaded
down with war work and other responsibilities. If you
care to have me on these rather useless terms I am at
your disposal but with two major papers to present at
scientific meetings this summer, one or two emergency
jobs and responsibilities to several colleagues, you can
see that any time that I can find for recreation I need
to use for that purpose. I shall be in South Tamworth,
New Hampshire from the end of this week on through the
summer--which may be another reason against using me.
However, with these reservations, you know that my
enthusiasm for China is unabated and you are at perfect
liberty to use my name.

Very sincerely yours,

W/s   Norbert Wiener

15 June 1941

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

Dear Professor Wiener:

For some time past we have been considering the possibility of getting a book on 'Approximate Integration' for our Toronto series of 'Mathematical Expositions'. We have been in touch with Professor Garrett Birkhoff of Harvard who has given us valuable advice and who has suggested that you might be willing to write such a book. We realize that there are a number of factors which must be considered, such as the rapid development of the subject, military secrecy etc., but in spite of all these difficulties we feel that a book on this subject would be valuable and we would be very pleased if you would be willing to undertake it.

With regard to the subject matter, we made some suggestions to Professor Birkhoff, but we realize that an author must to a large extent have a free hand. Moreover, so much of the recent development of the subject has taken place at M.I.T. thatwe would be quite happy to trust to your judgement on the matter. You may have seen our first volume, if not Professor Birkhoff can show you a copy. We plan to have the other volumes resemble this one in general size and format.

Very Sincerely Yours,

G.de B.Robinson
Secy.Ed.Board

VLADIMIR KARAPETOFF. C.E.. M.M.E.. Sc.D.

CONSULTING ENGINEER

PROFESSOR OF ELECTRICAL ENGINEERING
CORNELL UNIVERSITY

TELEPHONE: LEONIA 4-0741W

107 ROMAINE PLACE
LEONIA, NEW JERSEY

June 20th, 1941.

Prof. Norbert Wiener
Dept. of Mathematics
Mass. Inst. of Technology
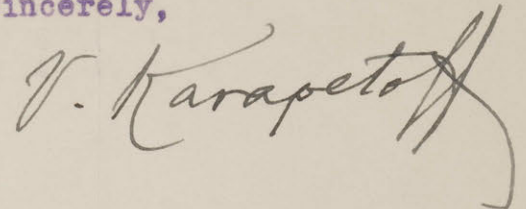Cambridge, Mass.

Dear Professor Wiener:-

I understand that you are interested in developing a machine for solving partial differential equations. May I call your attention to my article in Sibley Journal of Engineering, Vol. 39, p. 243 (1925)? The title of the article is "Double Integraph for Electric Line Transients."

This device solves graphically a set of two partial differential linear equations, with time and distance as independent variables. The integraph was one of the several kinematic devices which I developed in those years. I assembled it sufficiently to check the principle, but never put it in a final form. The drawings in the article will tell the story.

You are probably interested in more complicated equations, but this article may suggest to you a possible method of approach.

Yours sincerely,

V. Karapetoff

VK:ET

June 24, 1941.

Dear Professor Wiener,

I am on my way to Honolulu, to be with my wife and son for 2 months, then back to Kunming again where Tsing Hua now is a part of the National Southwestern Associated University. We are still carrying on, with 3000 students and a large faculty. Life is by no means pleasant but still we don't mind. The Japanese warplanes have made life very exciting for us individually - very fortunately that dormitory that I live in has been spared, although on different occasions houses next to ours and very near to ours have been hit. The Japanese seem to make it a point to miss the objectives that they are aiming at and hit everything else. President Mei often wishes he knew beforehand what the Japanese

study and make the most of their time! I think that this conservation of what little talent we have in China a good thing, and augurs well for the future of China.

The purpose of this letter is really to introduce to you Mr. Chow Wen-Tsing (周文俊) who is entering the Graduate department of the Electrical Engineering College of M.I.T. I know that you have kept up your interest in China and especially her students, and I wish therefore to introduce to you a young man who may be of interest to you. Will you consent to see him and give him the benefit of your sage counsel?

Always with remembrance of the good old days in Tsing Hua, I am

Sincerely yours,
Foot-Tan Ching

Remember
北院十八号 陳福田?

intend to bomb that day, for then the safest hide-out would be to sit on the most dangerous spot of that objective and he would be safe. Then too the cost of living has been high, and salaries are still very much what they were in the good old days in Tsing Hua Yuan. But you ought to come into contact with our young men — so wide awake so sensible, and so responsive. They all look forward to the time when they can throw themselves into reconstruction work, and they take themselves and their work seriously. Fortunately the Generalissimo and the government take a very sensible view on the subject of college education and have encouraged young men to continue their studies rather than waste their talent in shouldering arms in a country where man-power is never a problem. The young men are therefore thankful for the privilege thus offered them to

1140 Pratt Blvd.
Chicago, Ill.
June 25 1941

Prof. Robert Wiener
Mass. Inst. of Tech.
Cambridge, Mass.

Dear Prof. Wiener :—

I am a student of cyclical phenomena
and have developed an optical instrument
for determining periodicity in curves.

Prof. Harold Davis of Northwestern
University at Evanston, Ill. tells me he
believes the instrument you have invented
some few years ago is similar to mine.
Would you care to send me a discription
of your instrument, or if that is not
feasible, could you advise of a technical
publication where your idea has been described

yours very truly

Leon S. Mitelman

South Tamworth, N.H.
June 28, 1941.

Orson Welles, Esq.

c/o

Hollywood, California.

My dear Mr. Welles:

I recently attended a performance of your CITIZEN
KANE, and was very much impressed with the ating, writing, photographic
and sound technique, but particularly with the directing, and the way
in which it gave verisimilitude to the entire career of Kane and the
other characters, with their rise, culmination, and their fading into
inactivity and oblivion -- except in K's own case -- as they grow old.
In the past, I have had to collect the facts about a man's life for
a series of feature articles, and the reconstruction of a character
from the reminiscences of friends and associates is entirely as you
picture it. Besides your own acting, I was particularly impressed by
the medically accurate picture of senile cerebral arteriosclerosis
given by the actor portraying Kane's old associate in the hospital on
Welfare Island, and by the performance of the part of the cynical,
vulgar, sharp, loyal little Jewish business manager. These characters
are not stencils: they are taken from real life, and they stand on
their own feet, three-dimensionally.

I am writing to you, not only to express my appreciation, but to
call to your attention a very dramatic piece of history which may
lend itself to your techniques of narration and performance. I am
fully aware that a technique which is revolutionary on its first
introduction, may become conventional on its second repetition and a
cliche on its third. Nevertheless, you have been so prodigal of
innovations in your picture that I cannot think that you have intended
to lock the door on their future use.

The events wich I wish to suggest to you as raw movie material,
though I have been born too late to participate in them, are well
known to me, through my perusal of the documents, my personal conver-
sation with the minor figures, and my professional activities. In this
latter connection, I am professor of mathematics at the Massachusetts
Institute of Technology, have done a certain amount of electrical
engineering design work, and have spent much time in exploring the
mathematical justification of the work of Heaviside, the chief figure
of the events I shall relate. *I regard him as one of the really great figures of his
generation, and this is the general opinion of those competent to judge.*

These events concern the foundation of the American Telegraph and
Telephone Company (or is it Telephone and Telegraph). The chief figures
are:

OLIVER HEAVISIDE, 1850-1925. Born in poverty, lived in poverty,
died in poverty. Englishman, protegé of the engineer Wheatstone. Came
from a petty bougeois family, so quarrelsome and unappreciative of him
that at his death two different groups quite illegally tried to grab
his personal library and correspondence from one another, and to sell
them, with the result that part of the collection was where it belonged,
in the library of the Institution of Electrical Engineers in London,
— often containing volumes of sets represented in the first collection —
while the rest was bought up finally by B.A.Behrend, the American
electrical engineer, who finally presented it to the IEE.

Heaviside was self-taught, excitable, bitter, quarrelsome, and quite
deaf. As a young man, he worked as a operator on the lines of the
Great Northern Telegraph Company, in the Newcastle office, where many
uncollected written memoranda of his remain. Later he was an employe of
the Post Office, I believe, until his deafness caught up with him. He
lived in a respectably sordid part of Camden Town in London, attended
meetings of the ~~IEE~~, *Electrical Society (I am not quite sure of the name)* where he scarified those -- and there were many --
who lacked his engineering and mathematical acumen, and sent profound
and unintelligible papers to the Electrician, which without fully

understanding his genius, at least understood that he was a genius, and on the whole gave a good-natured tolerance to his eccentricities. These papers, completely unreadable to his contemporaries, constituted the mathematical Magna Charta of the modern telephone. They were privately *published* by Appleton in two three-volume collections -- Electromagnetic Theory, and Electrical Papers. These books occupied so much warehouse space to so little purpose that the firm destroyed them, with the result that they have become collectors' items, and that the needs of the working engineer have caused the reproduction in zinc-plate of at least three pirated editions -- one in China. *Copies of these reproductions, are a necessary nucleus of the library of every communication engineer of the present day.*

Heaviside was undersized, bearded, of slight physique, and except for his piercing eyes, restless with the strain of the double duty which a deaf man puts upon them, *were* utterly insignificant. His favorite sports, in so far as he had any, seem to have been walking and bicycling. *He seems to have been utterly self-contained, and though he had friends, admitted none to intimacy*

In his later years, after his Camden Town days, he settled in a little house in Torquay, in the West of England. I have heard, though I am not sure of the facts, that for a time he kept a second-hand book-shop there. It was to Torquay that the President of the Institution of Electrical Engineers, and on another occasin, B.A.Behrend, Vice-President of the American Institute of Electrical Engineers, made pilgrimage, to persuade Heaviside to receive the highest honors of these two societies, which they only did with the utmost difficulty. In both cases they had to appeal to his personal friendship for them *and to his unwillingness to hurt them* to make Heaviside accept honors which hade been tarnished for him by coming too late.

In his later years, weakened by poverty and the deprivations of the last war, Heaviside became almost helpless. A neighboring policeman, who regarded him with a good-natured contempt, brought him his daily milk and groceries. In this state, in 1925, Heaviside died as the

result of injuries sustained some weeks before in ~~H~~ a fall from a ladder.

Heaviside's works and letters abound in apothegms as biting as Swift's. On one occasion, after some particularly bitter attack on the narrowness of the Cambridge mathematicians of his day -- and the Cambridge mathematicians of his day were on the whole a weak lot -- he makes the statement that ''Even Cambridge Mathematicians deserve justice.'' This may not seem particularly biting, but I have not H's works at hand here, and I can not give more striking examples.

Besides Heaviside, the other protagonist of our story is:

MICHAEL PUPIN. Born a Serbian peasant. For details of his life, see the apologia, From Immigrant Boy to Inventor, which is a particularly nauseating panegyric of America as the Hope of Opportunity and of himself as the Self-made Hero. *It should be placed beside Bok's egregious effort and the autobiography of Mary Antin.*
Next in importance come:

THE FOUNDERS OF THE ATandT. These gentlemen are personally unknown to me, and I have no very clear idea of their dominating traits, singly and severally, but I take them to have been fine examples of the feral age of modern business: perhaps intelligent, ~~certainly shrewd, quite~~ *(not deliberately dishonest,)* possibly good fathers, husbands, and church members, but most certainly convinced that an idea, a dollar, and the public were all the rightful prey of the first entrpreneur with the enterprise to take them in.

As minor characters appear:

SIR WILLIAM HENRY PREECE, Chief Engineer of the British Post Office. Bland, charming, official, and not without a certain strictly limited intelligence. (He had a great deal to do with the Post Office's interest in Marconi.)Nevertheless a fool.
As Greek chorus I suggest:
B.A.BEHREND. Chief Electrical Engineer for Allis Chalmers. Born in Switzerland. Cultured, witty, charming, cynical, contemptuous of the skulduggery of business competition, but not unwilling to play

poker if poker was the game on the table. He was one of those who made
the pilgrimage to do honor to Heaviside at Torquay.

We must not forget:

Mr. C------ (Still alive and well.) The real inventor of the wave
filter and originator of the details of modern loading-coil technique,
as all his colleagues in the profession recognize. Not known outside
the profession.

You will observe that there is no woman in the cast. Unless there
was (or is) a Mrs. Pupin, there were no women in the cast. I can imagine
a woman egging on Pupin's colossal vanity, but without any documents at
hand, I have no right to assume that there was one.

Now for the story. In the late 'eighties, the telephone wasn't out
of diapers yet, and while it was useful for short distance communication,
its range was very short. There was however a speculative interest in
what should be done to increase its range. Preece, led probably by the
sound of the word ''capacity'', suggested increasing the electrostatic
capacity of the line. Heaviside as a telegrapher well knew that the
difficulty of the transoceanic cable was the excessive amount of this
very same capacity, which makes any sudden change in a message dissipate
itself over the entire ocean instead of appearing in the instrument at
the other end. Preece held Heaviside's career in the hollow of his
hand; but like the bourgeois Cyrano that he was, Heaviside did
not hesitate to damn Preece's folly with a very careful naming of
chapter and verse, and a very worldly-unwise choice of the most cutting
epithet and most damaging example.

Heaviside was not content to state what was wrong. He set it right.
He developed the theory of the distortionless line. If the four running
constants of a line are properly proportioned -- resistance, leakage,
capacity, and electromagnetic inductance, the line will transmit a sound
to the far end, weakened indeed, but not changed in character and

rendered unintelligible. In the ordinary line, the inductance is not enough to realize this balance. Heaviside pointed out the proper balance, and the means to obtain it. He suggested that at distances of the order of one mile, the line be interrupted by coils of copper wire with cores of powdered iron, of an inductance specified by him.

At this time, one of Heaviside's brothers was connected with the Post Office in a practical engineering function. Heaviside actually tried his device out on one of the longer English telephone lines. I suspect from Heaviside's writings that the experiment was furtive and unauthorized. Partly because the line was too short to make a decisive experiment, and partly because the trial was of too brief duration, the results were ambiguous. Heaviside never applied for a patent. Even if he had, by the time long lines came in in the early 1900's, his patent would not have had many years to run, and would not yet have brought him in one penny. As it was, it was ''dedicated to the public'', in legal phraseology, and neither was, nor was capable of becoming, the property of anyone.

In the early days of the telephone industry, the service of a city was analogous to its gas or electric light service: a local monopoly, capable of being joined in holding companies joining many cities, but also capable of being developed without any reference to other cities. Indeed, in many places it was not even a monopoly, but several companies strove with one another to acquire the local traffic. Even where the conditions were better, there was no compelling reason to organize the industry as a whole.

The AT and T was formed in 1900 to centralize the industry in the United States. This could be done on only one basis, that of long lines. Long lines were only possible then, and for many years later, until the invention of amplifiers, on the perfectly sound basis of Heaviside's loading coils. However, this method, though the invention of Heaviside, was the legal property of no one; and no company could dare to make the heavy speculative investment

needed for the installation of long lines without some protection from random competition, or in other words, without a monopoly.

Since the only true basis for such a monopoly was then a patent on loading coils, and since Heaviside had no legal papers to show his fatherhood of his intellectual child, it was necessary to find another daddy for the baby. Even though the original idea could no longer be patented, some subsidiary idea might be. This would serve two ends: the legitimate one of giving the A T and T rights in the new improvement, and the more questionable one of securing a basis of litigation which might scare competitors off the entire long line field, because of legal expense, the engineering ignorance and generally unpredictable behavior of judges and juries, and the prestige which A.T. and T. would have by having actually the first _patent_ in the field.

As to the details, there were two possible courses. One was to have the new developments made by an AT and T engineer, and the other was to buy an outside invention, if possible. The first would have been much cheaper in cash over the counter. On the other hand, in a lawsuit, some judge or jury might have been persuaded to look askance at a patent made inside the company. ~~On the other hand~~ Moreover, an invention bought from an out-sider for a good round sum in hard cash would look a lot more convincing than an invention bought as per contract of employment for the sum of one dollar from an employee hired by the year to invent for a fixed salary.

There was one point which Heaviside had not stated with full explicitness in his published work, although the evidence is pretty clear that he knew the answer. This was the spacing of the loading coils. Heaviside gives a mile as the distance, which is a practical working one. He does not, however, give the principle determining this spacing. Actually, this distance is only critical one way: it can not be too big, or it will suppress the higher tones of the voice. It

was here that the AT and T people secured their patent. They attacked

this problem from two directions.

Mr. C-----, who was then a young man in their employ, developed

the desired spacing theory. Furthermore, and this is his real claim to

greatness, he saw how the very imperfections of the line with too wide

a spacing could be used as the basis of a new invention -- the wave

filter. On the other hand, Pupin put in a claim for both these inven-

tions at the patent office. How he came to work on these problems I do

not know, nor whether it was entirely independent of stimulation from

the AT and T. At any rate, the matter came into interference proceedings

in the U.S. patent office:- proceedings to which Heaviside was naturally

not a party. Pupin won these, and the AT and T paid for his rights a sum

which I have seen variously stated as one half a million dollars and a

million dollars.

Observe now the position of the characters in our little drama. The

company had a valid patent, established as valid by proceedings which

had gone triumphantly against them, certainly covering the spacing of

the loading coils, which no man could say, until it had been fought all

the way to the Supreme Court, did **not** legally cover the loading coil in

each and every aspect. Anyone who should have bucked the AT and T on the

mere chance of a favorable decision in this matter would have been a

damned fool. Mr. C------ had a steady job with the company, a great

reputation and a great deal of sympathy in strictly professional circles

within and without the company, for it was known that his was the

sounder work. Pupin had a fortune, and the job of convincing himself

that he had really deserved it. Heaviside had nothing but a clear con-

science, and the freedom to say exactly what he thought.

He most certainly said it. He made fun of Pupin's work -- and it

certainly had plenty of weaknesses,-- and of Pupin's character -- and

that had plenty of weaknesses too. From the secure citadel of utter

poverty, and a minimum of wants, he said things that stung even the great

American Telephone and Telegraph Company -- becaused they happened to be

true. The Company tried to pay him for his early work. Undoubtedly there

were humane men in the Company, and I prefer to think that it was this

humanity, coupled with a guilty conscience and a knowledge of his ~~proto~~

profound poverty, that prompted the offer. We can not forget, however,

that a hostile Heaviside might have proved profoundly embarassing to the

AT and T, just in case some strong competitor might arise somewhere to

stick a knife in their ribs.

Heaviside, however, far from being flattered or intimidated by what was to

become the greatest corporation in the world, refused to accept one penny

exept as a payment for his invention, upon the acknowledgment by the

Company that he, and not Pupin, was the true inventor of the loading ~~co~~

coil. This however the Company could do under no condition. It would

with one stroke of the pen destroy all its monopolistic rights, and

render valueless its chief stock in trade. Thus we have the spectacle of

a single poor, deaf man negotiating with equal strength with a company

greater than many nations, and successfully defying it.

In this battle between a great company and a great man, Pupin

received the blows of both sides. Heaviside despised him as a fraud, and

the company despised him as a stooge. Outwardly, he was their wonder

inventor, and no doubt of his ability was to be tolerated either in

others or in himself; within, his fellow-engineers knew that between

Heaviside and C-----, Pupin's credit was pretty thin. Again and again

Pupin tried to prove himself by new attempts at invention and research,

but the power was not in him. Unable to advance, and the retreat to

modesty cut off by that accursed half-million, despised by the man whose

reputation he had wronged, despised within by those who surrounded him

with all outward signs of respect, -- who can doubt that his life was

a Hell within? With no new triumphs to justify the old, and nothing but the reality of the old one to prevent him from standing before himself a convicted fraud, is it any wonder that he began to justify himself before his own soul, to push further and further back into his childhood the roots of his great discovery? or that he tried with every means in his power to exorcise that mocking, contemptuous, impregnable spirit of a Heaviside? If you doubt that this was his inner course, you have but to read his own apologia.

Thus you have these two men, who never met, yet who for better or for worse modelled the course of each oter's life. On the one hand, you have Heaviside, deaf, poor, contentious, but master of his soul, soured and embittered, but gratified in his failing years, perhaps not so much by official awards and honors, as by the universal admission of his genius and power. On the other, you have poor Pupin, for whom riches and the extraneous honors of academies, the gloty of a popuar hero and the authorship of a book of national reputation, have not been able to replace or conceal an uncurable, irremediable insecurity. In Columbia University there is a great physical laboratory called by his name, dedicated by His Excellency Nicolas Murray Butler, President of the university, but Pupin's real monument is in the hearts of his colleagues, and it is built of contempt. In every true way, he died a lonely man.

My sources for this judgment, besides my own reading of Pupin's book and the published and unpublished works of Heaviside, are to be found in an extensive conversation with electrical engineers of the present and the past generations, within and without the Bell Telephone System, and in particular in the many meetings I had with the late B.A.Behrend, former vice-presidnt of the AIEE, who as you remember made pilgrimage to Heaviside at Torquay to confer upon him an honorary membership, which Heaviside was only with great difficulty persuaded to

accept.

Whether there is dramatic material in the events I relate, you can judge far better than I can. To me, however, it seems that the two careers of Pupin and Heaviside, separated in space but joined by fate, offer much that is dramatic. The tale should consist of episodes:- an Electrical Society meeting in London, in some lecture-room of gas-light and stale varnish, musty, fusty, and commonplace, with the bland, impenetrable Preece baited by the crank Heaviside; the furtive attempt at testing the loading-coils, and its failure:, a directors' meeting in New York; the bookstore in Torquay contrasted with an Academy meeting in Washington or an academic procession, and so on. A man like Behrend might perhaps be used as narrator and spectator.

If you have managed to read up to this point, and feel that I have been wasting your time, I am sorry. I have written this letter because I think that here is material, in a very raw form, which you might put to use. I have neither the ability nor the time to push this material further. To alter events, names, personalities, companies, inventions, yet preserve the verisimilitude of the situation and its spiritual meaning, and to express these through the medium and within the limitations of a given art, are things that belong to an expert like yourself. If you find nothing of interest in the bit of history I relate, don't even bother to answer this letter. If however it seems usable grist to your mill, I have no claims on it, and you are welcome to use it as you see fit. The only thing is that I should of course wish to be protected from the embarassment of a too literal and recognizable rendering of names, companies, and situations; but this, of course, you would do anyway.

I have heard that authors and producers are sometimes worried by people who volunteer material to them, and then later make it a basis

for claims and vexatious plagiarism suits. To clear up any annoyance in

this regard which the receipt of this letter may cause, I here state

that I freely hand this material to you, to be used or not to be used as

it may please you, with or without your communicating with me, and that

I waive any claims on the whole of it or on any part.

In any case, I wish again to express my thanks for the very ~~pleasa~~

pleasant evening I have spent witnessing your performance.

Very truly yours,

Norbert Wiener.

P.S. If you wish to verify either my own bona fides or the authenticity

of the incidents here related, I suggest that you turn to Professor

Eric Temple Bell, of the California Institute of Technology in Pasadena.

June 29, 1941

Professor Norbert Wiener
Sandwich, New Hampshire

Dear Wiener:

Thank you for calling me yesterday. I hope now
that everything is arranged. The topic is "Operational
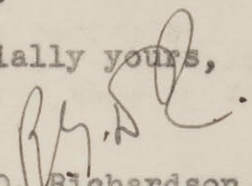Calculus Methods in Problems of Mechanics".

I understand that you wish to give the talk in
two sections. It doesn't seem feasible to have a lecture
on Saturday morning, July 12. None of the three morning
lecturers want to omit their regular work. I suggest
therefore two or three alternatives; if none of these
appeal to you, I shall try again to get Tamarkin to forego
his lecture at 9:45.

(1) Give one talk at 3:30 p.m. on Friday,
(You would be the guest of the University between the
lectures) and one on Saturday at 3:30 p.m. (2) Give two
lectures on Saturday afternoon with a half hour interval
between during which refreshments will be served.
(3) Give a lecture for one and a half hours (or more) on
Saturday afternoon.

It is likely that Poritsky will come on the 19th,
Goodier on the 26th and Nadai additionally on one of those
two dates. Theodorsen is scheduled for August 9.

I hope to hear from you very soon regarding your
choice of alternatives. We feel greatly honored and
pleased that you are participating in this endeavor of
ours. We shall value your suggestions.

Cordially yours,

R.G.D. Richardson,
Dean.

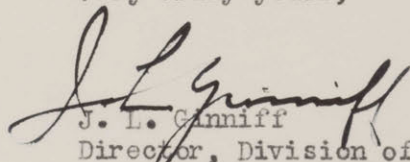RGDR:E

IRVING V. A. HUIE
ADMINISTRATOR

July 2, 1941

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

Subject: Official Project No. 165-2-97-22
"Computation of Mathematical Tables"

Dear Professor Wiener:

We shall appreciate your comments on the computational program outlined in the enclosed memorandum from Dr. Arnold N. Lowan, supervisor of the above project.

Very truly yours,

J. L. Ganniff
Director, Division of
Community Service Programs

Enclosure:
Memorandum from Dr. Lowan

July 1, 1941

MEMORANDUM

TO: Manager, Research and Records Programs District Office

SUBJECT: Elliptic Functions
          O P 165-2-97-22
          "Mathematical Tables Project"

        Our project has under consideration a very extensive program of
computing Elliptic Functions for both real and imaginary arguments. Spec-
ifically we are planning to compute three volumes of the functions am u, sn u,
cn u, and dn u.

        In Vol. I, the functions are to be computed for moduli k, ranging
from 0 to 1, at intervals of 0.01. Also the values of the same functions,
corresponding to the complementary moduli k' $= \sqrt{1-k^2}$ are to be given in
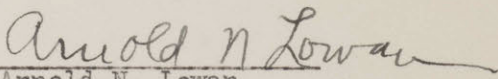the same volume.

        In Vol. II, the functions are to be computed for values of m $= k^2$
ranging from 0 to 1 at intervals of 0.01.

        In Vol. III, the functions are to be computed for values of
$\theta =$ arc sin k, ranging from 0° to 90° at intervals of 1°.

        In all of the above three volumes the argument u is to range from
0 to K (or K') at intervals of 0.01. All entries to be given to ten places.

        The contemplated method of computation depends on the so-called AGM
(arithmetico-geometric means) scale. This method would generate as a by-
product not merely the values of the quarter periods K and K' but also the
material necessary for the computation of complete Elliptic integrals of the
second and third kinds.

        Will you please request Prof. Norbert Wiener, Massachusetts Institute
of Technology, Cambridge, Mass., to comment on the advisability of carrying
out the above program.

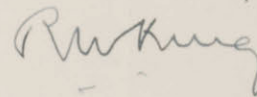   Arnold N. Lowan
                                        Project Supervisor

ANL:LS

DR. NORBERT WIENER,
Massachusetts Institute of Technology,
Cambridge, Massachusetts.

Dear Dr. Wiener:

I am just acknowledging receipt through
Mr. Brockett, Secretary of the Academy, of your letter
of July 2nd to Dr. Jewett. Dr. Jewett is away from the
city trying to catch a few days of much needed rest but
he is expected to return early next week at which time
he will doubtless be ready to go to the mat with you.
If his few days away from the office have renewed his
strength, as I trust they have, you will probably find
him a worthy adversary.

                              Yours very truly,

                              R W King

RWK:JT

Copy to P.Brockett

July 8, 1941

Professor Norbert Wiener
Sandwich, New Hampshire

Dear Wiener:

    I hope that some people will come down from
Cambridge for the lectures late this week. I am en-
closing some copies of a tentative schedule which you
may use. Perhaps you can have one posted in the M.I.T.
building. The lectures should prove of great interest
to some of our friends in the industries.

    When you come to town you may go directly to
the University Club, where arrangements are being made
for a room for you. We are looking forward with great
pleasure to seeing you.

                        Sincerely yours,

                        R.G.D. Richardson,
                             Dean.

RGDR:L

July 10, 1941

Dear Wiener,

Would you make me a real pleasure? Send me a copy of our joint paper. I shall talk about the whole subject of higher derivatives in the „Stanford conferences" round August 10. — I think you sent the best copy of the MS. to the „Transactions" as we decided.

I think the Russians fight better than expected — let us have this little hope.

I hope that you have pleasant holidays.

Sincerely yours

G. Polya

Yuk-Wing Lee

Kensington House
Lane 30 House 20 Seymour Road
Shanghai, China
July 25, 1941

Dear Dr. Wiener:

I had no idea that the little incident which occurred
not far from Tsing Hua four years ago would develop into such a gigantic
conflagration. I earnestly hope that it will not spread any further.

Betty and I have constantly thought of you, and have
often wondered when we would see you again. I have neglected my
correspondence with you terribly and cannot offer any good excuse except
perhaps that we were pretty much upset when our plans, hopes and "rice
bowl" were shattered to bits by the skice (combination of skunks and lice,
a name given by Betty to our "friendly neighbors"). The shock, particularly
its financial aspect, was almost but never actually beyond our ability to
bear. We were able to use our wits to meet the situation.

As funds were needed for the prosecution of the war, Tsing
Hua cut its faculty salaries. With the depreciation of the value of the
Chinese dollar, I found it impossible to continue with the University.
Our way out was the establishment of a business. As you know, collecting
Chinese antiques was my hobby at T. H. Turning it into a business was
not particularly difficult. Business has been good and we have been
living on it.

My original idea was to have this business tide us over
the Sino-Jap conflict. But as the conflict now enters upon its fourth
year, I still see no signs of an early settlement. This makes me restless-
ly looking for an opportunity to go back to the sort of work I was trained
to do. I have been offered several positions as engineer, but without
exception there was always the same bug in it - Salary incommensurate
with the cost of living.

I am writing to Dr. Bush to ask him about the possibility
of finding me a position. I understand that he is now at the head of
almost all scientific research for U. S. national defense. If he should
find it possible to put me to work under your supervision, it would make
me extremely happy. This is my hope. However, I do not wish to specify
anything so as to facilitate matters. I am willing to undertake any sort
of scientific research even if it is not in electrical engineering, provided
of course it is within my capacity. I have no doubt that you would be
willing to do whatever possible to help me. I would appreciate your getting
in touch with Dr. Bush as soon as you can.

Entry into the U. S. is not an easy matter for Chinese, but I have obtained some favorable information from the American Consulate General in Shanghai. I asked Mr. Sawyer, who is in charge of the visa section of the consulate, about the possibility of my entry into the U. S. to accept a position with a well-known institution to do scientific research work. He told me that I could be admitted under the following rule:

"Chinese desiring to come into the United States for training in well-known banking or industrial institutions for a temporary but protracted period should be considered as temporary visitors and not as students. In appropriate instances the institutions engaging then should obtain in their behalf from the Department of Justice a waiver of the contract-labor clause of section 3 of the Immigration Act of February 5, 1917." - ADMISSION OF CHINESE INTO THE U. S., JANUARY 1941, Department of State Publication 1542, page 10.

Regarding the interpretation of the word "training", Mr. Sawyer stated that whatever scientific research I would do could be considered as training for me. I see no hitch in the matter provided Dr. Bush is in a position to help me out.

We send you and Mrs. Wiener our best wishes and hope that you will have news for us very soon.

Sincerely,

Kensington House
Lane 30 House 10 Seymour Rd.
Shanghai, China
July 25, 1941

Dear Dr. Bush:

A recent issue of TIME stated: "At no time in history has one
man held the reins of so much scientific research". I am indeed happy to
hear of such extraordinarily good news about you.

Upon my return to China in 1933, I entered the China Electric
Co., Shanghai, as electrical engineer. A year later, Dr. Y. H. Ku, then
Dean of the School of Engineering, National Tsing Hua University, Peiping,
offered me the position of Professor of Electrical Engineering. I joined
the University and found just the sort of work I wanted. Besides teaching I
had time for research. We had Dr. Wiener and his family for a year. He
enjoyed it immensly and I believe he is still talking about it. Professor
Jackson was with us for a short visit. Professor Wildes came a year later.

During a student strike Wiener and I got together on electric
networks, and luckily, the outcome was an invention. This was subsequently
sold to the American Telephone and Telegraph Company for $5000 which Wiener
and I shared equally. Rights to our first two inventions were also acquired
by them for the same amount.

It was very satisfactory for me at Tsing Hua University.
Wiener, Jackson and Wildes all had very good opinions of our work. But luck
was against us. The Japanese struck in North China in July 1937. I was
caught in Shanghai as I was on my way back to Peiping after a visit with my
parents in Hangchow.

As funds were needed for the prosecution of the war, Tsing
Hua cut its faculty salaries. With the depreciation of the value of the
Chinese dollar, I found it impossible to continue with the University.

In 1938 I started a business in Shanghai. Collecting
Chinese antiques was my hobby while I was teaching in Tsing Hua University.
Turning this into a business was not particularly difficult.

My original plan was to have this business tide me over the
Sino-Japanese conflict. But as the conflict now enters upon its fourth
year, I still see no signs of an early settlement. This makes me restless-
ly looking for an opportunity to go back to the sort of work I was trained
to do. I have been offered several positions as engineer but without
exception there is always the same bug in it - salary incommensurate with
the cost of living. Many of my former colleagues have gone into other
fields of work for the same reason.

Present abnormal conditions in this part of the world have
forced me into a very difficult position. I have been wondering if you
could find a place for me among the many scientific projects under your
supervision. I am willing to undertake any sort of scientific research
even if it is not in electrical engineering, provided of course it is
within my capacity.

As to admission of Chinese into the U. S., I have obtained some information from the American Consulate General in Shanghai. I asked Mr. Sawyer, who is in charge of the visa section of the consulate, about the possibility of my entry into the U. S. should I be fortunate enough to receive an offer of a position from a well-known institution to do scientific research work. He told me that I could be admitted under the following rules:

"Chinese desiring to come to the United States for training in well-known banking or industrial institutions for a temporary but protracted period should be considered as temporary visitors and not as students. In appropriate instances the institutions engaging them should obtain in their behalf from the Department of Justice a waiver of the contract-labor clause of section 3 of the Immigration Act of February 5, 1917". - ADMISSION OF CHINESE INTO THE U. S., JANUARY 1941, Department of State Publication 1542, page 10.
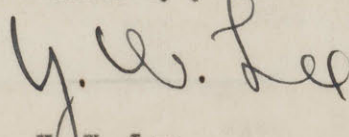
Regarding the interpretation of the word "training", Mr. Sawyer stated that whatever scientific research I would do could be considered as training for me.

In addition to the requirement mentioned in the above rule, I think a letter from you addressed to the American Consul General in Shanghai will be necessary for the issue of my visa. My wife could accompany me by securing a visitor's visa. I am furnishing you information concerning myself in a separate statement herewith enclosed.

I fully realise how busy you must be in these troubled times and shall appreciate whatever you can do for me.

With kindest regards, I am,

Sincerely yours

Y. W. Lee

Y. W. Lee

NAME   Yuk-Wing LEE

ADDRESS   Kensington House
                Lane 30 House 10 Seymour Road
                Shanghai, China.

DATE OF BIRTH   April 14, 1904

HEIGHT   5 Feet, 9 Inches

EDUCATION   St. John's University, Shanghai, China   1920 - 1924
                (Two years middle school, two years college)

                Entered Massachusetts Institute of Technology 1924
                S. B. in Electrical Engineering, 1927, M. I. T.
                S. M. in Electrical Engineering, 1928, M. I. T.
                Sc. D. in Electrical Engineering, 1930, M. I. T.

EXPERIENCE   1931 - 1932. Special Development Engineer
                United Research Corporation, Long Island City, New York.
                Work: Verification of the invention (U. S. Patent
                No. 2,024,900) by N. Wiener and Y. W. Lee, by design,
                construction and test.

                1933 - 1934. Electrical Engineer, China Electric Company,
                Shanghai, China. Work: Operation of Shanghai-Nanking
                radiotelephone and radiotelegraph system installed for the
                Chinese Ministry of Finance.

                1934 - 1937. Professor of Electrical Engineering
                National Tsing Hua University, Peiping, China.
                Work:

Subject	Year	Hours a Week	Textbook	Years Taught
1. Principles of Electrical Engineering	Sophomore	5	"Principles of Electrical Engineering" by Timbie and Bush	3
2. Electrical Engineering Mathematics	Junior	3	"Differential Equations for Electrical Engineers" by Franklin	3
3. Electric Power Transmission and Distribution	Senior	5	"Electric Power Transmission and Distribution", by Woodruff	3
4. Electrical Communication Networks	Senior	3	"Transmission Circuits for Telephonic Communication" by Johnson	3

Subject	Year	Hours a Week	Textbook	Years Taught
5. Advanced Electrical Communication Networks	Senior	3	"Communication Networks", by Guillemin	2

Subject	Year	Hours a Week	Textbook	Years in Charge
6. Electric and Magnetic Measurements Laboratory	Sophomore			2
7. Electrical Engineering Laboratory Reports	Sophomore Junior Senior			1
8. Seminar (Electrical Communications)	Senior			2
9. Thesis(Electrical Communications)	Senior			1

NOTE: Term subjects: 1-6; Year subjects: 7-9.

1938 - . Engaged in business.

PUBLICATIONS

"Synthesis of Electric Networks by Means of the Fourier Transforms of Laguerre's Functions", Journal of Mathematics and Physics, Vol.XI, No. 2, June 1932, p. 83-113.

"Calculation of the Capacitance Between Two Wires of a Three-Conductor Cable", Transactions of the A.I.E.E., Vol. 48, Jan. 1929, p. 195-197.

Two papers on a.c. machine transients (with Dr. Y. H. Ku) in the Tsing Hua Science Reports. At present I have no access to these Reports for the exact titles and location.

A paper on electric network parametric transforms (examples) in the same Reports. See remark above.

INVENTIONS

"Electrical Network Systems" (with Dr. Wiener), U. S. Patent No. 2,024,900, December 17, 1935.

"Electrical Network Systems" (with Dr. Wiener), U. S. Patent Application Serial No. 89,336, filed July 7, 1936.

"Electrical Network Systems" (with Dr. Wiener), U. S. Patent Application Serial No. 91,360, filed July 18, 1936.

Rights to all three inventions have been acquired by the American Telephone and Telegraph Company.

Remarks

I have no political affiliations whatsoever.

Married - Wife Canadian - No children
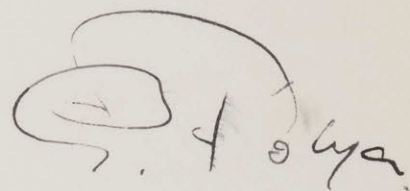
July 29, 41

Dear Wiener:

I asked you July 10 — to send me a copy of the MS of our joint paper or, if you have no copy, the MS itself. I have no answer yet, so I must suspect that my letter got lost or something like that. Therefore, I write again; may I repeat my request?! You see, I have to talk about the subject on August 12, and to have the MS would considerably easy my preparation.

Sincerely yours

G. Polya

THE NEW SCHOOL
FOR SOCIAL RESEARCH
66 W TWELFTH ST   NEW YORK

Profesor Norbert Wiener
Department of Mathematics
Mass. Inst. of Technology
Cambridge (Mass.)

Sehr verehrter Herr Profesor,

           Empfangen Sie vielen Dank
für Ihren liebenswürdigen Brief vom 2.7. Der Junge
hat sich unterdessen bereits bei Profesor Phillipo vor ge-
stellt und ist jetzt in der Summerschool. Für den Herbst
ist ihm ein Stipendium von der Littauer Stiftung
zugesagt, so dass er seinen sehnlichsten Wunsch in
M.J.T. zu studieren erfüllt sieht.

      Ich würde mich ausserordentlich freuen mit Ihnen über
Wahrscheinlichkeitstheorie und Statistik zu sprechen. Über
den August bin ich zu erreichen: c.o. Goetze, 2
Maplewood Rd, New Haven, Conn. Tel 8 5800.

        Ihr aufrichtig ergebener

           Gumbel

31.7.41.

Mass. Inst. of Technology

Cambridge, Mass.

August 4, 1941

Dear Colleagues:

The importance of maintaining the morale on the eastern front
is obvious to us all. Our British scientific colleagues have
already taken action in this direction by sending greetings
to the Academy of Science of the Soviet Union. We believe that
a similar step here is in order and therefore ask that you in-
form us whether your signature be added to the enclosed state-
ment to be sent to the Soviet Ambassador here for forwarding
to the Soviet Union.

Sincerely yours,

N. Levinson

D.C. Spencer

D.J. Struik

A copy of this was sent to you about 10 days ago
but we have not heard from you. Knowing you as we do
we figure that you realize the necessity of bolstering
Russian morale but that, with summer vacation office
facilities, the letter was mislaid. Therefore we
are sending you another copy with some of the
signers to date.

N. L.

We, the undersigned mathematicians of the United States, send
our greetings and express our heart felt sympathy to our col-
leagues of the Soviet Union in their struggle against Hitler
fascism. What the future of mathematics would be in a Hit-
ler-dominated world we know from the unprecedented destruc-
tion of mathematics in Germany after the advent of Hitler.
We are deeply impressed by the heroic stand of the Soviet
peoples and know that the mathematicians of the U.S.S.R. are
doing their part in this supreme effort.

The bonds between the mathematicians in the United States
and the Soviet Union are particularly strong since during the
past two decades the center of world mathematics has steadily
shifted to these two countries. We know many of you person-
ally and more of your through your scientific writings. We
know that you are fighting alongside your fellow-countrymen
in their brave struggle against the invading tyrant and we
assure you that we here are doing everything in our power
to aid all peoples struggling against fascism.

With best wishes for a successful struggle against the
evil forces of fascism, we remain fraternally, your colleagues
in the United States.

G. Bliss	G. Miller
L. Carlitz	M. Morse
A. Dresden	G. Pall
W. Feller	J. Ritt
P. Halmos	J. Roberts
N. Levinson	D. Spencer
H. Levy	N. Steenrod
W. Martin	D. Struik

O. Zariski

STANFORD UNIVERSITY, CALIFORNIA

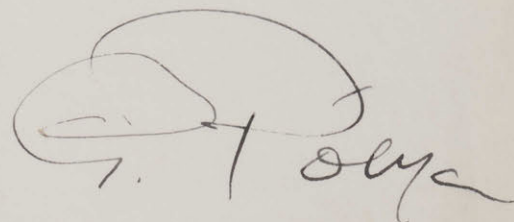August 12, 1941

Dear Wiener:

Many thanks for your letter and the MS with first and second copy. I gave the first copy to Hille for the „Transactions" as we decided.

The MS came just in time to help me to prepare my lecture which was scheduled for to day. I talked on successive derivatives in general and gave at the end the proof of case I from our paper; it was very well received. By the way, Szegö found a new proof for the same case; maybe a trifle more complicated than that in our paper but equally very nice. It remains to be seen whether his method gives more or less in the cases II and III.

It is a pity that your talk in Chicago is scheduled for September 6 — the day on which my return ticket to Providence expires. The news from Russia are bad today and those from France perfectly foul — espérons quand-même!

Sincerely yours

G. Polya

DEPARTMENT OF MATHEMATICS

August 12, 1941

To the Chief Consultants
　　of the War Preparedness Committee

Dear Colleagues:

　　　　If you have any reports of experience or any recommendations
which can appropriately be presented at the Chicago meeting, will you
be so good as to send them to me?

　　　　My address from now until a few days before the meeting will

be

　　　　　　74 Mt. Prospect St.
　　　　　　Bridgewater, Mass.

　　　　　　　　　　　Sincerely yours,

　　　　　　　　　　　Dunham Jackson

DEPARTMENT OF MATHEMATICS

August 12, 1941

To the members of the Subcommittee on Research
of the War Preparedness Committee

Dear Colleagues:

It is a long time since I have written to you as a Committee.
Circumstances have seemed temporarily at least to make it appropriate
for us to meet such problems and experience as might come to us indiv-
idually, rather than to attempt any formal concerted action.

There will be an opportunity however at the Chicago meeting
to report on our experience and any recommendations growing out of it.
I shall be most grateful for any suggestions that you can offer in this
connection.

My address from now until a few days before the meeting will
be

74 Mt. Prospect St.
Bridgewater, Mass.

Sincerely yours,

Dunham Jackson

August 16, 1941

Dear Professor Wiener,

Dr. Spencer has just told me how kindly you have spoken in favour of my appointment as lecturer at the M. I. T. for next year, and I wish to tell you that I feel extremely grateful for the interest which you have been good enough to take in me, and which I deeply appreciate.—

I am looking forward to

the pleasure of seeing you
whenever I can do so
without troubling you, and
I am, Dear Professor Wiener,
with Kindest regards

Very sincerely yours

R. SALEM. —

Aug 18, 1951

Dear Professor Wiener:

I feel that I have
had too bad luck with you. First
you came to Providence precisely the
day when I was out. Then your
lecture took place during my vacations.
Again, I have hoped to visit you at your
summer place, but have had to
take over Tamarkin's class in partial
diff. equ., which keeps me pretty
busy. Finally I thought to meet you
in Chicago, but it looked as if it could
become impossible for me to attend the
meeting.

Anyway, I hope to see you
sometimes in September, when the summer
cure is over. There are many things,

I wanted to learn from you, in particular
in connection with your stochastic work.

I understand that some of the your plans
have come to nothing, and that you have
had some trouble. I regret it very much,
both for the possibility of an interesting research,
and for your nerves.

Well, probably you are as much
surprised and pleased by the splendid show
the Russians as I am. It keeps my
spirits up, and I am as optimistic as could
be. And the scanty news from Europe we
have tend to support this optimism. It is
my belief that the teutonic morale already
is shaken.

With all good wishes for your work
and for you personally

Yours

W Feller

Arthur Rosenthal, 1314 South University Avenue
                  Ann Arbor (Michigan),
                  August 18, 1941.

Dear Professor Wiener:

        I am writing to you, as you are in charge
of some mathematical part of the defense work. If there would
be any possibility for me to use my mathematical knowledge for
this purpose, I would be glad to do so. I may mention that I
have special experience in cryptoanalysis having been working
at deciphering in the first world war.

        I immigrated to this country in March 1940
(after a stay in Holland), received my first papers in July
1940, but - of course - I am not yet an American citizen.

        Whether this last circumstance would be an
obstacle to my activity in the defense work, I do not know.
In such a case, having no appointment at present, I would be
glad to substitute an other mathematician who is called to
defense work or to military service, at any University or
College.

        When I came to this country, I was invited
by the University of Michigan as a research-fellow and lectur-
er for one year. This fellowship could not be continued, be-
cause it goes to another Department every year. Therefore I
am looking for a new job and I would appreciate it very much,
if you could kindly help me to get any such opportunity. For
your further information, you find enclosed my career.

        Thanking you very much in anticipation,

        Yours very sincerely,

        Arthur Rosenthal.

<u>C a r e e r.</u>

I, Arthur R o s e n t h a l, was born at Fuerth (Bavaria) on February 24, 1887. Schools: "Humanistisches Gymnasium" at Fuerth and Munich; University of Munich, 1905 - 1909. There: Dr.phil., July 1909 (with Prof.F.Lindemann). Bavarian Examination for teaching mathematics and physics, fall 1909. Assistant of Prof.H.Burkhardt, Technische Hochschule Munich, fall 1909 - spring 1911. Further studies at University of Goettingen 1911 - 1912; there as a substitute of Prof.Felix Klein, direction of his seminar. "Privatdozent" of Mathematics at Munich University, July 1912. "Ausserordentlicher" Professor at Munich University, 1920. "Planmässiger ausserordentlicher" Professor of Applied Mathematics at Heidelberg University, 1922. Having refused a call to Giessen University, promoted to "Ordentlicher" (= full) Professor of Mathematics at Heidelberg University, May 1930, and besides, Director of the "Mathematical Institute" of Heidelberg University. Dean of the Faculty of Science, Heidelberg University, 1932/1933. Retired at Heidelberg University (Professor Emeritus) July 1935. Member of the Heidelberg Academy of Science 1930 - 1937 (retired July 1937). In the concentration-camp of Dachau November - December 1938. Emigrated from Germany to Holland (Amsterdam), July 1939. Immigrated to the USA on March 12, 1940; first papers received on July 24, 1940. Research-Fellow and Lecturer at University of Michigan, March 1940 - February 1941.

August 21, 1941,
Institute for Advanced Study,
Princeton, N.J.

Dear Professor Wiener,

I thank you heartily for your kindness which
you have shown me during my stay at your place.   I am very
sorry that I could stay only for a few days.   After visiting
Maine, I came back to Princeton yesterday safely.   Erdös,
Stone and Hochschild are still in New England, and they will
drive to Chicago across the upper part of New York State.

White Mountain is indeed a wonderful place, and I
enjoyed my stay there very much.   The sky was clear and blue,
the weather was cool and confortable.   I like mountains, and
this was indeed the first time I saw mountains ever since I
came to this country.

I was very glad to see your family as well as many
mathematicians of White Mountains.   Please extend my cordial
regards to Mrs. Wiener.   Hoping to see you at Chicago, I am

Yours sincerely,

Shizuo Kakutani

P. S.   Here I enclosed some of the recent
Japanese stamps, issued for the memoy
of National Parks in Taiwan (= Formosa)
Please convoy these stamp to Mrs. Wiener
and Mrs. Ingham.

August 22, 1941

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Wiener:

I feel particularly sorry
to trouble you once more with Mathematical Reviews,
but I am afraid that in all your work you forgot
that you have for review two papers, as follows:

2731.   Infeld, Leopold. On the Theory of
Brownian Motion. Sent October 2.

3482.   Mayer, Joseph E. and Montroll, Elliott.
Molecular distribution. Sent January 31.

I know, of course, that you are very busy with defense
work but we can not omit reviews of these two papers,
for it gives a bad impression of the efficiency of our
journal if we are so very late in publishing reviews
of important material. I might remark in this connec-
tion that the Zentralblatt is still being published and
we are particularly anxious to avoid cases where the
German journal is more prompt than we are. I therefore
want to ask you to send us the two reviews as soon as
possible or at least to return the manuscripts in order
to enable us to redistribute them to some other reviewer.

With best greetings, I am

Very sincerely yours,

O. Neugebauer

N:S:M

607 Marcy Avenue
Brooklyn, New York
August 27, 1941

Dr. Norbert Wiener
Dept. of Mathematics
Mass. Inst. of Technology
Cambridge, Mass.

Dear Sir:

I should like to know if it is possible to obtain reprints of your papers on mathematics and physics which have appeared in many of the le ading foreign and American scientific and technical journals.

I have long taken a profound interest in your work, Dr. Wiener, and I should be deeply grateful for any of your published material that you may care to send, at cost or gratis.

I have written to you once before, sir, but did not receive a reply.

May I assure you a reply will be most appreciatively received.

Very truly yours,
Arthur Kirche, M. Sc.

75 Glen Bourne Rd
Arlington
El. 9559

August 28, 1941.

Dear Wiener,

This is to inform you that your joint paper with Pólya has been accepted for publication. It is a beautiful piece of work and is causing much interest here at Stanford.

With kindest greetings,

Cordially yours,
Einar Hille

Dear Professor Wiener,

It was very considerate of you to take the trouble of stopping at
at this place to see me. I am indeed most appreciative for the consid-
eration you showed me. After you left saturday, I realized that I
didn't mention anything definite about the actual work I've done with
the books that you and Mr. Levinson so generously sent to me. The time
we spent in the visiting room was so short and your unexpected call was
so surprising that it left me overwhelmed, and I just couldn't get myself
to collect all the ends. In fact, I haven't even calmed down yet. Words
are a poor vehicle to convey my gratefulness for your sincere interest.

Last year I went through Goursat's volume I very carefully and
found it exceptionally useful and also interesting. It is not as difficult
as one might suppose when first looking at it. I particularly liked the
chapters on the Rieman plane.. Much more is given on this subject in
Osgood's book but I still don't know German well enough to read that
Lehrbuch. I tried one of the papers by C.L. E. Moore on Riemannian space
but I did not understand it at all. Another Paper I'm very much interest-
ed in -inasmuch as I understand part of it- is one written by you and Dr.
E. Hopf in German. I have it all translated into English and as I'm
studying Integral equations at the present time I hope to get a thorough
understanding of your paper, "Uber eine Klasse singularer integralglei-
chungen", real soon. As I see it the Integral equations are of tantamount
importance and it is necessary to get a good hold on them before attempt-
ing anything else.

To be specific, what would you suggest that I do? Shall I just write and keep you informed as to how I am progressing, or would you rather that I send you some problems that I've solved? Or better still, have you some problems that you'd like to have me work? To do the research work, as you suggested, I know I should be able to read most of these publications that I have here, and I immediately see that I'm not ready for them yet.

Two years ago I worked on Elliptic Integrals and was almost overcome by the length of some of those integrations. I have one here that took some 14 pages of work to solve. The particular problem I have in mind is one that involves the area of any oblique cone. It isn't that I found the elliptics difficult - in fact, they are much easier than differential equations - but, its the length of the problems that get me.

However, with your coming here and expressing your interest and so generously offering your help both in information and in material, I assure you that you have given me more incentive and impetus to carry this through than I need.

It is very probable that you are rather busy at present because of the opening Fall term at the university, therefore, I shall not be disappointed if I do not here from you soon. Meanwhile I shall continue with the integral equations and German. As for material that I may need I leave that entirely up to you.

Again I wish to say, "Thank you for your interest."

Most respectfully yours,

#1158

Frank J. Scimone

Kensington House
Lane 30 House 10 Seymour Road
Shanghai, China
September 3, 1941

Dear Dr. Wiener:

On July 25 I sent an air mail letter to you and one to Dr. Bush
regarding a research position for me in the United States. Censorship, both
British and Japanese, is now so unreasonable and strict that I do not know if
they ever reached their destinations. I am enclosing copies of these letters,
and if you have not seen the original to you, please send my letter to Dr. Bush
as soon as you can.

Since writing you last things have happened so fast in the
Far East that we are simply living from day to day. As more than 90 percent
of our customers are Americans, their evacuation, which is now almost complete,
has given us a severe setback. The recent freezing order coming on top of
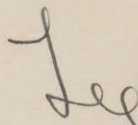this has practically killed what remained of our business.

We do not see any sort of future for us in Shanghai during
the next few years, and are therefore definitely and eagerly looking for a
way out. One might ask about opportunities in Chungking. This is well
answered by an article which I came across the other day. I am enclosing
this. I believe you met the author in Peiping.

We are in a spot where anything might happen anytime, and
would therefore appreciate your assistance in expediting any step which
might lead us toward our objective.

In view of the uncertainty of mails, please use Pacific Clipper
and ordinary post simultaneously to insure delivery of your letters to us.

We send you and Mrs. Wiener our best regards.

Sincerely,

No. Carolina State College
Raleigh, No. Carolina
September 6, 1941

Dear Professor Wiener,

I understand that there are more jobs available
at the present time than there are people to fill them.
Of course, I am now at Raleigh, but I am not too well
pleased with my work there. Now that most men have been
placed, I though that at this last moment there might
be available a job where there are some advanced courses
being taught, and research being done.

If you should know of any position that is still
to be filled will you please let me know immediately.
I hope that you will not feel that I am asking for too
much, and that I am not inconveniencing you in any way.
I am also writing to Professor Franklin in the event
that this letter does not reach you in time.

With kindest regards to everyone from Sara and
me.

Sincerely yours,

Abe Gelbart

MANNING
TRAVEL BUREAU INC.
MYLES STANDISH HOTEL
KENMORE SQUARE, BOSTON

FOREIGN AND
DOMESTIC
TRAVEL
ALL CRUISES

September 15, 1941

Professor Norbert Weiner
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Weiner:

During a recent conversation with Dr. Green
he mentioned that you might be interested in
going to Buenos Aires some time during the winter
or spring.

We are bonded and authorized travel agents
and would be glad to offer our services in arrang-
ing your trip. All tickets are sold by us at
tariff rates and there is no service charge.

For the past few years we have had the pleas-
ure of making reservations for Professor Arthur C.
Hardy and if we can render any service to you in
connection with your contemplated trip to South
America, we shall be very happy to do so.

Yours very truly,

MANNING TRAVEL BUREAU, INC.

By Helen E. Manning

HEM/HCL

THE INSTITUTE FOR ADVANCED STUDY
SCHOOL OF MATHEMATICS
PRINCETON, NEW JERSEY

September 15.–16., 1941.

Dear Norbert,

before doing anything else, I want to apologize for having been so blockheaded in Chicago, and so slow in understanding the various — really very beautiful — examples of ergodic transformations which you were suggesting. I have read now your and K. Mahlers paper in Vol. 6 of the Journal of Math. and Phys. (1926/27), and combining this with ~~the~~ my recollection of your remarks, I think that I have now a reasonably clear picture of the situation.

I also want to tell you, how much I enjoyed our discussions at Chicago — I only regret that they ~~must~~ must always be so brief and so haphazard.

———

I understand now, that you propose to use any number- theoretical function (or "array")
$$f(n) \quad , \text{ defined for } n = 0, 1, 2 \cdots ,$$
to define a measure in the "infinite dimensional torus" T of all points
$$\xi = (x_p \, ; \, p = \cdots -2, -1, 0, 1, 2 \cdots) = (x_p) \Big| \begin{array}{l} \text{(the } x_p \text{ being} \\ \text{real numbers),} \end{array}$$

for which the "shift"

$$\xi = (x_p) \longrightarrow S\xi = (x_{p-1})$$

is a measure conserving transformation, in the following way:

Let for a finite number of (different) indices $p_1, \cdots, p_k$ certain (real number) intervals $I_1, \cdots, I_k$ be given. Then

$$J = \underset{(p_1)}{I_1} \times \underset{(p_2)}{\bar{I}_2} \times \cdots \times \underset{(p_k)}{I_k}$$

is the set of all

$$\xi = (x_p)$$

with

$$x_{p_1} \varepsilon I_1, \cdots, x_{p_k} \varepsilon I_k.$$

Now You define a measure μ in T by

$$\mu(J) = \lim_{m \to \infty} \frac{1}{m} \left(\begin{array}{l} \text{Number of all } n = 0, 1, \cdots, m-1 \text{ for which} \\ f(n+p_1) \varepsilon I_1, \cdots, f(n+p_k) \varepsilon I_k \end{array} \right).$$

This measure has all desired properties — provided that everything goes well.

In particular for every continuous function

$$\mathcal{F}(\xi) = \mathcal{F}((x_p)) \equiv \phi(x_{p_1}, \cdots, x_{p_k})$$

we have

$$\int_T \mathcal{F}(\xi) d\xi = \lim_{m \to \infty} \frac{1}{m} \sum_{n=0}^{m-1} \phi(f(n+p_1), \cdots, f(n+p_k)).$$

You now consider the particular function

$$f(n) = \rho(n) \equiv (-1)^{\text{(Sum of the dyadic digits of n)}}$$

The numbers

$$\sigma(i) = \lim_{m \to \infty} \frac{1}{m} \sum_{n=0}^{m-1} \rho(n)\,\rho(n+i)$$

are thus "correlation coefficients"

$$\int_T x_0\, x_i \; d\xi = \sigma(i),$$

or equally well

$$\int_T x_j\, x_i \; d\xi = \sigma(i-j).$$

———

As I now understand Your work loc. cit., the Fourier ~~analysis~~ analysis which You obtain, could also be obtained by applying the spectral theory of unitary operators to the "shift" - operator:

$$U \mathcal{F}(\xi) = \mathcal{F}(S\xi)$$

$$(S(x_p) = (x_{p-1})).$$

You and Mahler obtain very interesting results on the "correlation coefficients" $\sigma(i)$: You prove:

I) $\qquad\qquad \sigma(i) \ \text{not} \to 0 \quad \text{for } i \to \infty,$

II) $\qquad \dfrac{1}{m} \sum_{i=0}^{m-1} |\sigma(i)|^2 \to 0 \quad \text{for } m \to \infty.$

Now if

$$\mathcal{F}(\xi) \equiv x_0,$$

then clearly

$$\sout{\mathcal{F}(\xi) = } U^{-i} \mathcal{F}(\xi) = \mathcal{F}(S^{-i}\xi) = x_i,$$

so (Hilbert-space inner product!)

$$\sigma(i) = (\mathcal{F}, U^{-i}\mathcal{F}) = (U^{i}\mathcal{F}, \mathcal{F}).$$

Therefore **I)** means, that the "shift" S is <u>not</u> strongly mixing, while **II)** is a necessary (but not sufficient) attribute of weak mixing.

I suppose, that S is ergodic and even weakly mixing, but **II)** establishes neither — for that one would need more, than the "correlation coefficients" $\sigma(i)$. One can prove with I) and II), that S cannot have a <u>pure</u> point spectrum.

I was able to derive the necessary combinatorial methods for the general volume-computation in T with μ, but have not pushed it far enough yet to prove the ergodicity or even the ~~weak~~ weak mixing property of S.

Can You establish these?

———

I cannot see, however, that the non-differentiabilities, which You prove loc. cit.,

have any bearing on the non-differentiability of the spectrum of the unitary "shift" operator

$$U F(\xi) = \cancel{F(0\xi)} F(S\xi).$$

In fact, one of your examples loc. cit. [1] leads to the non-differentiability in your sense — while it gives, as you point out, statistically independent variables

$$\dots, x_{-2}, x_{-1}, x_0, x_1, x_2, \dots$$

in

$$\xi = (x_p),$$

and consequently a "shift" S which has notoriously a continuous (spectrum) of the differentiable type. (operator)

Accordingly I do not see what devices there are, to prove that the

---

[1] The "array" ▪▪ $1, -1$ (once) $1, 1 ; 1, -1 ; -1, 1 ; -1, -1$ (twice) $1, 1, 1 ; 1, 1, -1 ; \dots ; -1, -1, -1$ (four times) ▪▪▪ $1, 1, 1, 1 ; 1, 1, 1, -1 ; \dots ; -1, -1, -1, -1$ (eight times) . . . .

(operator) spectrum is not differentiable. (Except, of course, when the ~~strong~~ strong mixing property is absent. But one of your objectives was just to get a strongly mixing ~~~~ shift with a non differentiable [operator] spectrum.)

———

"I would be greatly interested in anything you can tell me about these or any other questions, connected with the above $f(n) = f(n)$, or any of the more elaborate examples you had in mind in Chicago.

Hoping to heare from you soon,
I am cordially yours

John,

September 17, 1941

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Wiener:

I have not kept you as intimately in touch with the situation here this summer as I planned. Life has been altogether too strenuous. I think on the whole we have every reason to congratulate ourselves on the results of the experiment. We are now laying plans for next year. Synge will be with us the first semester and Prager the second. There will be courses given by Bergman, Tamarkin, and Feller in addition. I hope that you will be able to come down to give us a lecture sometime during the first semester. We must not impose upon you, but you know very well that you are always welcome in our little circle here.

As you may know, President F. W. Willard of the Nassau Smelting and Refining Company was Chairman of the committee appointed by the National Research Council to make a survey of research in industry, and he suggested last spring that the National Research Council take some cognizance of the attempt by Brown University to meet one of the needs pointed out by Dr. Thornton C. Fry in his report to that committee concerning mathematics in industry. However, the National Research Council at that time took no action concerning our experiment here.

Recently, however, the problem has been proposed to the National Research Council by the National Science Fund Committee to which the problem came up from another angel (including the request from Professor Courant about which you perhaps know). While that interest came too late to forestall our appointment of an Evaluating Committee, the National Research Council did ask Dean Eisenhart (who is a good friend of mine) and Professor W. H. Kenerson, formerly a member of our staff, to sit with our Evaluating Committee. We had originally hoped that the Evaluating Committee would be appointed by the National Research Council.

This committee together with Eisenhart and Kenerson met here on Friday and Saturday, August 29-30, and we shall await with interest their report which we hope to have within six or eight weeks. I shall not burden you with any
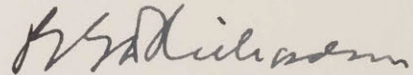
large fraction of the material that we have assembled here,
but I shall send you a document or two which have not al-
ready been sent to you. I know that you will be interested
in seeing what steps are being taken to put America forward
in this sector in which we have lagged.

In my contacts with people, while there has been
occasional doubt as to whether we can make the project
worth-while, there has been a good deal of enthusiasm ex-
pressed. The few whom I have known earlier as expressing
doubts have now expressed enthusiastic approval.

The enclosed copy of a new pamphlet will give you
some of the facts in regard to our program for the summer
and our plans for next semester. We should value suggestions
of any sort which you care to make. I hope that I shall
have the pleasure of seeing you some time soon.

Sincerely yours,

R. G. D. Richardson,
Dean

RGDR:M
Encs.

Lock Drawer 6
Fortress Monroe, Va.
September 19, 1941

Professor Norbert Wiener
Massachusetts Institute of Technology
Cambridge A, Massachusetts

Dear Professor Wiener:

Someone has made off with my reprint of the Homogeneous Chaos,
and I need it now both for research and defense. I wonder
if you could ship me another.

Perhaps with it you could include the report on computing
machines Tukey and I were asking for.

My regards to you and Mrs. Wiener.

Yours very truly

Brockway McMillan

Brockway McMillan

53 Cedar Road
Belmont, Mass.
September 22, 1941

Dr. Frank B. Jewett
President of the National Academy of Sciences
2101 Constitution Avenue
Washington, D.C.

Dear Dr. Jewett:

It is with great regret that I read of your prolonged ill-health, and with great pleasure that I hear that you are now coming into shape again. I am sorry to continue to disturb you on Academy matters, particularly after your very kind letter, which I sincerely appreciate. Nevertheless, I feel that I must do so.

The Academy operates in at least three distinct roles, and to my mind these roles are not compatible with one another. It is at least a quasi-official agency of the United States Government, entrusted with the advice of the Government on scientific matters. It is the custodian of certain journals and funds for research. It is a self-perpetuating society of restricted membership, considering the gift of that membership as a high honor on the recipient, among other honors and prizes which are also within its gift.

As a government agency, it is distinguished from most others by possessing a personnel concerning which no other department of the government has any say, either as to term of office, or as to appointment. The corps of officers of the Army, the Navy, and other related services share the long term of office of the Academy; but their apointments are much more definitely regulated by Congress. This is likewise true of the judiciary. I know no other important case besides the Academy in which Congress, after apointing an organization as a government agency, has completely left it to its own devices, and has conveyed a continuing authority upon a self-perpetuating and (in the strict sense of the word) irresponsible body of men.

This is somewhat glazed over by the fact that Congress has incurred

no financial responsibility for the Academy, either in the matter of salaries or otherwise, and that the Academy is maintained by dues. However, the fact remains that the Academy is accustomed to regard itself as a government agency, to ask diplomatic privileges for its official representatives in their travels, and in other ways to speak as the scientific mouthpiece of the United States of America. As such, we have a government agency which bestows titles of honor; which is based on the principle of superordination and subordination, not of functions in an organization, but of personalities; and which in many other ways is in glaring contradiction with the declared principles of the United States of America as well as the actual practice in which these principles principles are embodied in the government at large.

With the second function of the Academy, that of the custodian of certain journals and funds for research, I have no quarrel, providing that the Academy accepts a position simply on the same level as that of other agencies with a like custodianship. I have no sympathy whatever with the Science Fund idea, which seems to me an excellent means to discourage independent gifts to science, and to stifle all work not pleasing to whatever group is at the moment running the scientific politics of the country. I say this with full respect to the personnel now in charge of the fund. When they go, the overcentralization of scientific funds will remain.

As to the third purpose of the society -- the conveying of honors -- I have no sympathy at all. I have always regarded exclusiveness as an attribute chiefly of use in selling unwanted junk to parvenus. I do not wish to belong to any scientific organization which has more than one grade of membership, nor to one in which that grade of membership is not available to every person with a sincere interest in the field. We all judge the ability of others, but I have no desire to see my unsolicited opinion of a man published with official sanction to

injure either him or his competitors, nor will I accept such an unsolic-
ited and officially published opinion of myself nor of anyone else. This
would apply to the best available opinion, from which, either because
of organized electioneering by influential colleges, government depart-
ments, and commercial laboratories, or because of the general fallibility
of a group of persons none too well-informed concerning the work of one
another, I have found the official judgment of the Academy to differ
quite appreciably. As a young man, I have felt far too much of the weight
of the unsolicited disapproval or sanction of the elders of science to
wish to have any connection with a body of self-appointed judges. Every
time a new member is appointed, an unnecessary gift of prestige or posit
position is made to one man; and this gift comes from the one place from
which it can come: from the pockets and reputation of someone at a more
remote institution or with less influential friends. I am afraid that I
can not be reconciled to injustice even by becoming its beneficiary.

As to medals, prizes, and the like, the less said of them the
better. The heartbreak to the unsuccessful competitors is only equalled
by the injury which their receipt can wreak on a weak or vain personal-
ity, or the irony of their reception by an aging scholar long after all
good which they can do is gone. I say, justly or unjustly administered,
they are an abomination, and should be abolished without exception. So
long as I am a member of the American Mathematical Society, I shall work
against the acceptance of a single penny of gift to be spent on medals
or prizes, and for the liquidation of those prize funds already estab-
lished. I can not in honor continue in an organization devoted in prin-
ciple to their support.

I do not wish to speak in detail of the many ~~detailed~~ faults I have
had to find with the Academy -- of the bad catering, of the tedious and
expensive dinners, of the general atmosphere of select and costly pompos
pomposity which has hung over the meetings, of the camp-followers of the

press and the camera, of the excessive age of most of the new members --
first, because you have taken strong steps to improve these situations;
and secondly, because they do not touch the essence of my attitude,
which is, that I am profoundly suspicious of honors in science, and of
select, exclusive bodies of scientists, and that I do not like to see
the relations of my country to science committed to the care of such
a body. With these convictions, I can only resign from the National
Academy of Sciences, and rectify the error, commited under the well-
meaning appeals of my friends, which I committed in accepting membership
in it. I herby do so resign.

I wish to express to you, Mr. President, my thankfulness for your
consideration, and my willingness at any time to undertake as a private
individual any work, scientific or other, which I can perform in behalf
of my country.

Very respectfully yours,

Norbert Wiener.

195 Broadway, New York.

September 24, 1941.

DR. NORBERT WIENER,
Massachusetts Institute of Technology,
Cambridge, Massachusetts.

My dear Dr. Wiener:

When Dr. King acknowledged your letter of July 2nd
I anticipated that a short rest would put me back in A-1
shape. This turned out not to be the case however.

The long strain of continuous work on National
Academy of Sciences and National Defense Research
Committee matters had carried me lower than I realized.
Further, the continued calls on my time and strength
throughout the summer precluded any extended period
of complete relaxation. As a result I am only just
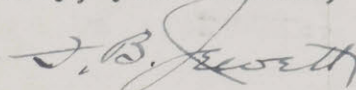now beginning to feel fit again.

Shortly the Council and the Academy will meet
for the Fall session. This will be the first oppor-
tunity for action on your letter as I have no power
to act alone. If you still adhere to your intention
to resign (which I hope you do not) I shall, of course,
present your letter for action.

While I still feel you are making a mistake
and that you can render a better service by staying
inside the Academy and using your influence to make it
conform more nearly to what you think it should be, I
realize that you alone must judge your own desires.

I am sorry I have not been able to dig up a
problem which would show you the value I see in a body
like the Academy even though it is not all I myself should
like to have it. However, one can not always produce
white rabbits out of a hat on demand.

Whatever your final decision, believe me to be,

Sincerely, your friend,

Frank B. Jewett
President.

JT

23rd September, 1941.

Nor
Dr Robert Wiener,
Massachusetts Institute of Technology,
Cambridge, Mass.

Dear Wiener,

Thank you for your letter. I am sorry to hear of your father's death, but glad that the rest of you are well. I cannot give your message to my wife, as she is at present in Moscow as correspondent of the "Daily Sketch".

I have been working on problems arising in connexion with human life at high pressures. Some of the results are not for publication at present. The most generally interesting one which I have been allowed to publish is that both oxygen and nitrogen become quite tasty at pressures around 7 atmospheres. The mathematics involved will ultimately be very fierce. You will remember the problem which I gave you. This turns out to be an over-simplified.... as often the case, the new complication allows an approximate solution which did not seem possible before. I am also involved in problems on the moments of probability distributions, which are, of course, much more in your line. I wish you would some day devote a few weeks to the outstanding mathematical problems here, some of which are adumbrated in Cramer's Cambridge Tract.

Unless Unfortunately I can do very little for your Chinese friend. I am not persona grata with the authorities of this country, although I have done work for a number of departments during the war. Hence a recommendation by me would probably do more harm than good. I don't think that at the present time we have any major psychiatric problems, except perhaps among certain highly placed persons. The ordinary people don't like air raids, and don't pretend to, but cases of neurosis or psychosis arising from them seem to be very rare. Nor am I in touch with any of the people who are dealing with such matters. So I don't see what I can do for him.

I agree with your remarks about the war, and particularly the need for giving help where it is most needed. The most important thing you can do is to plug the fact that at the present moment the Soviet Union needs it most, and that about half the anti-Soviet propaganda we got before the war June '41 was made in Germany.

I am sorry that you have abandoned your novel. The fact that you personally do not think it good enough may not be relevant. Naturally you would like to produce something as slick as the spectrum of a function.

But human life is a good deal more non-linear than anything which mathematic
have dealt with so far. So I hope at least that you will not burn the
typescript. I for one would be pleased to read it one day, from what I can
remember of its first chapter.

    Life here is not at all intolerable. There is enough food for most
people, including myself, but of course it is more monotonous than in peace
time. The rationing of clothes suits me very well, as it gives me an
opportunity to wear garments which i should not have dared to otherwise. Of
course if the Nazis continue to advance into Russia, things will be pretty
unpleasant for everyone, including you in the long run. But at the moment
we are having a lull.

    Remember me kindly to your wife and daughters,

                    Yours sincerely,

                    J B S Haldane

(48 Highlamd Street,
Cambridge, Mass.)

September 24, 1941.

Professor Norbert Wiener
Massachusetts Institute of Technology
Combridge, Mass.

My dear Norbert:

I want to thank you again for the delightful letter
which you contributed to the great bookful presented to me
on my retirement.

Re-reading the volume many. times this summer I find
myself turning to your letter with especial pleasure. I am
proud to be able to say that I was your earliest mathematical
friend, and I am proud of your graceful expressions of our
growing and deepening friendship.

Here's hoping you will have a grand time in ×××× South
America.

M ost sincerely yours,

E.V.H.
Edward V. Huntington.

Fine Hall, Princeton,N.J.
September 25,1941.

Dear colleagues:

        I have received the following cable from
Moscow:

        "Issue of Jubilee volume Recueil Mathematique
postponed for six months. Kindly inform earlßer invited
Hadamard Levi Civita Weyl Courant Szego Mises Einstein
Polya Lefschetz Neumann Morse Struik Birkhoff Wiener
Veblen. Editor expect wire from whom when expect manu-
script."

            (signed)   SCHMIDT.

                    S. Lefschetz.

JOE LOUIS

Heavyweight Champion
of the World

Greenwood Lake, N. J.
September 27, 1941

Dear Dr. Werner:

I have been reclassified by the Selective Draft Board, and I expect to be called into the service of my country. This may cause me to retire from the ring.

But before I retire, I want to put up one more fight — the best of my career — to help my people.
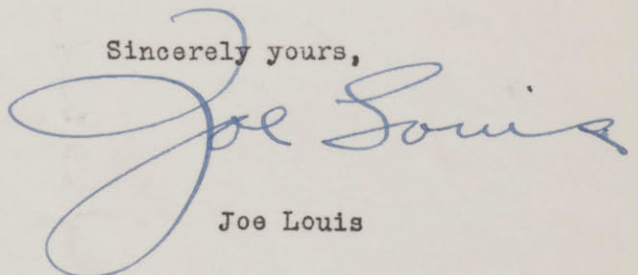
The hardest fight I ever had was against prejudice and intolerance. My people know what I mean. They are all fighting their way up, and I want to open the door of opportunity a little wider for them. The fight I propose to make will not be staged in an arena against one particular opponent but out in the open across the country. If I could get a "gate" as big as I've ever seen in the Yankee Stadium and turn it over to the Department of Race Relations of the Federal Council of the Churches of Christ in America for the splendid work that Department is doing on behalf of the Negro people and better relations with their white neighbors, I'd feel like a real champion!

I propose to start the "gate" with my own contribution, and I want you to subscribe for a box, a ringside seat or other reservation. This is one purse which does not have to be shared with promoters or managers. Every cent will be used to better the condition of my people and in creating better human relations in America.

Will you cooperate by sending your cheque or money order, in any amount, payable to Frank H. Mann, Treasurer, and mail it today? If you help me win this time, I'll feel that I've won the greatest fight of my life.

Thank you.

Sincerely yours,

Joe Louis

Joe Louis

COPY

September 30, 1941

Dr. Warren Weaver
Rockefeller Foundation
49 West 49th Street
New York City

Dear Warren:

Last spring Van Bush wrote me about a young man named Matthew Hopkins who had discussed with him some ideas regarding radio devices and circuits for navigation, fire control, automatic direction of bombing, etc. He said that Hopkins appeared to be somewhat of a genius though without much formal training. He suggested that Hopkins come up to the Radiation Laboratory with the thought that he might be useful and that he might arouse some interest in his projects.

Hopkins was hired by the month as a technician, in which capacity he has not been too satisfactory because he has a tendency to do things the way he thinks they ought to be done instead of following orders, which is rather fatal in the kind of a job for which he was hired.

Today Hopkins came to see me and showed me for the first time the ideas on which he has been working. Apparently he has not disclosed them to the people in the Radiation Laboratory except in a few details and to two persons who are not concerned with this sort of thing. He came to me for advice as to whether there was anything which he could do to get consideration of his ideas and, if they were favorably received, some opportunity to put them to trial.

So far as I could see, his thinking is sound and he has worked things out in very considerable detail. His work includes a number of electrical mechanisms for computation of components, integration of accelerations, automatic selection of random codes to get around static or jamming, servo-controls, etc. If his devices can really do what he says they can, he appears to have something.

I think that unquestionably his ideas, if valid, would have more application in your Section than in any other and in any case you would be more competent through training, experience and recent thinking than any other N.D.R.C. group to evaluate his ideas.

On the chance therefore that he may really have something or that he may be more useful to your Section than where he is, I would be glad if you three persons would spend some time with him to let him explain what he has, the next time the three of you have occasion to be in Boston. My own impression is that he may have something interesting but that there may be difficulties or objections which he does not foresee. At any rate, Van Bush, who is more competent than I in this field, thought that it was worth while to consider what he has, and the particular way in which he is being used here has not given any chance for evaluating his ideas.

(Perhaps I should modify this last statement because I think that, at Van Bush's suggestion, he sent some of his drawings to Mr. Eastham who is in charge of the microwave navigation system. Apparently this led to no action but I doubt whether the drawings alone would have told a very intelligible story).

I would be glad therefore if the three of you will plan to go over Hopkins' plans with him at an early opportunity and, if you wish, I will arrange the appointment with him when you are next here.

Very sincerely yours

KTC/L   Karl T. Compton

cc: Prof. N. Wiener
    Prof. S.H. Caldwell

Sept. 30, 1941
Princeton, N. J.

Dear Professor Wiener,

Thank you very much for the nice discussions which I could have with you at Chicago. I also very much enjoyed your lecture on measure in statistical mechanics.

I am still working on measure preserving transformations and flows. Professor von Neumann recently obtained a example of two measure preserving transformations which are spectrally isomorphic but not pointwise isomorphic. But the problem whether the shifts in infinite product (which are clearly spectrally isomorphic) are pointwise isomorphic or not is not yet settled.

Here, I am sending you the picture which I took at Judson Court. Please extend my cordial regards to Mrs. Wiener.

Yours truly,
Shizuo Kakutani