

Door Dr Weiner,

Afril 13th.

Dur Jord licensee is all but signed hay with is the shadline.

All is going further with a west to Bally Tomarrow and a return engagement with G.J.

Thank Heaven, my X-rays showed a healed when Thanks to your good advice my heart is lighter in this regard at least. My best regards, Smearely

15832 Park Avenue Harvey, Illinois April 13, 1960

Professor Norbert Wiener Massachusetts Institute of Technology Cambridge, Massachusetts

Dear sir,

A friend and I have just finished reading your book CYBERNETICS and are quite interested in this new and unusual field. We inquired as to openings and opportunities in this field but we could find no one who had any idea on this subject. Our only hope, it seems, is to write directly to you for help and advice.

As your excellent book shows, Cybernetics is the blending of all the sciences into one homogeneous mixture. What subjects should a high school student take in high school and in college to be qualified for entrance in this field? What should he excell in? Is foreign language study necessary?

As to the subject of Cybernetics itself, we would like to know what the future is for this field. What are the chances of success that await a future "cybernetician"?

We have thoroughly enjoyed your book, although much of the mathematics involved went over our heads. The basic theory behind it seems quite simple to understand; at least we think that it is. Could you give us any advice on the building and constructing of Cybernetic machines?

Finally, could you refer us to any reference material that would be of interest to someone interested in Cybernetics? I hope that some of these works will be of your authorship because I have found your method of presenting facts and figures a lot more readable than so-called "readable" textbooks and manuals.

I wish to remain

Sincerely yours,

Bill E. Elliott

THE UNIVERSITY OF WISCONSIN

COLLEGE OF ENGINEERING
MADISON 6

DEPARTMENT OF
ELECTRICAL ENGINEERING

April 13, 1960

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

Dear Dr. Wiener:

In reading your monograph "Random Processes in
Non linear System" I find your use of the Brownian
movement of interest in characterizing a non linear
system. I am a bit puzzled however in your statment
"certain non linear system". I would be most interested

to know more explicity the types of non linear systems you had in mind. It appears to me that any system which is subject to saturation is sensitive to the mean square

value of the random input. Would this not rule out

the applicability of Brownian response Characterization.

Sincerely yours,

Charles H. Murrish

Instructor - Electrical Engineering

Charles H. Murrish

CHM/jef

SAM WIENER JR

ARTIST DESIGNER

431 EAST STATE ST

WESTPORT CONN

CAPITAL 7-1524

13 April 1960

Dear Professor Wiener,

I dont know if this interests you, but thought I would give it a try, having first sent Wiener's theory to a mathematician friend in California who couldn't take time off from the Orion to dope it out. I like to fiddle around with math or logic problems but my knowledge is something less than primitive... but I do think this one is interesting.

$$2n^2-1$$

$$2n^2-1$$

$$\frac{2n^2-1}{7}$$

Is it true that all numbers 2n2-1 are either primes or divisible only by 7 and a prime, and is it further true that if 2k2-1 is not a prime (is divisible by 7) then 2(k/1)2-1 is a prime. Also is it true that these numbers are never divisible except by 7 and primes larger than 7.

Sincerely yours,

Sam Wienes



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130 SIXTH STREET, N. W. · ATLANTA 13, GEORGIA · TRINITY 5-9211

April 13, 1960

Professor N. Wiener Massachusetts Institute of Technology Cambridge, Massachusetts

Dear Professor Wiener:

Some of my friends, thinking of your interests in applying cybernetical theory at the social level, suggested that I send you the enclosed. It is a copy of the last chapter of my doctoral dissertation, in which I attempted to apply cybernetical concepts to the analysis of communication in disaster-stricken communities.

However successful this particular attempt may have been, it did convince me of the potential power of this approach in studying human behavioral systems from the individual to the societal level in conceptual terms which are comparable for the different levels of human systems and which provide important linkages with the study of non-human systems.

With cordial best wishes and respects, I am

Sincerely yours,

Harry B. Williams

Assistant Director for

Mental Health

HBW:mc enclosure

adul gd.

April 13, 1960 Mr. William M. Evan Bell Telephone Laboratories Murray Hill, New Jersey Dear Mr. Evan: I am certainly interested in anything that can be done to prevent World War III; although I am completely devoid of any single solution of the problem, I shall read your article and after that shall see if any ideas will come to me, but, frankly, I think that the fundamental impasse of modern civilization is too deep to make any valid formula for its resolution possible, and I do not as yet see any great willingness on the part of either side to abandon those rigidities which if they are retained will permanently render a solution impossible. If we are to avoid war, it will be on the basis of accepting a world very different from that in which most of us suppose ourselves to be living, and a very rigid, disagreeable world at that. In other words, to be perfectly frank, I am expecting the worst perhaps not in the next 6 months, but very likely in the next 5 years. I am quite as well aware as anybody that World War III will mean the end of civilization and quite possibly of the human race, but to be conscious of the existence of a fatal disease in society does not mean to be able to find the cure. Sincerely yours, Norbert Wiener NW/emr

April 13, 1960 Mrs. Bruce D. Hainsworth 84 South Street Foxboro, Mass. Dear Mrs. Hainsworth: I am highly complimented by your interest in my novel, and under different circumstances I should be glad to accept your invitation. However, your invitation occurs at exactly the time when I have to make a trip to Detroit for which the invitation is of long standing. Moreover, I am under doctor's orders to cut my engagements down to once a month so that April is out and May will see me getting prepared for an eight-months trip to Europe. I hope you will understand why I am reluctantly compelled to turn down your very attractive offer. Sincerely yours, Norbert Wiener NW/emr

April 13, 1960 Mr. Melvin Kranzberg Technology and Culture Room 311, Main Building Case Institute of Technology Cleveland 6, Ohio Dear Mr. Kranzberg: While I am interested in the long run of doing a review of Pyke's book and an article of my own on related subjects, and while I am highly complimented by your interest in my book "The Tempter", I am loaded up for the immediately foreseeable future with responsibilities for books and articles which I have wished upon myself. It seems to me therefore that the best thing would be for you to get an independent review of that book and to wait for the article until the present load of work is off my hands. Whether this will be in 4 months or in a year, I can't really say at present. During this semester it is quite impossible. I hope you will understand. Sincerely yours, Norbert Wiener NW/emr

April 13, 1960 Mathematical Society of Japan c/o Faculty of Science University of Tokyo Japan Gentlemen: I have the most pleasant recollections of Dr. Takagi whom I met during my visit to Japan in 1935 and, I believe, also on several occasions in the United States and elsewhere. He did a masterly piece of work in bringing Japanese mathematics up to the point where it is fully abreast of the best work being done in any country, and I feel that we as well as you owe him a great deal of gratitude in this respect. He was a very friendly man and I enjoyed very much my contact with him. I greatly regret his passing. Sincerely yours, Norbert Wiener NW/emr

April 13, 1960 Mr. Melvin M. Weiner Solid State Electronics Engineering 54 Harvard Avenue Brookline 46, Mass. Dear Mr. Weiner: I am very interested to receive your article and to see that we agree in important matters concerning one of the vital issues of the day. Congratulations for writing it! Sincerely yours, Norbert Wiener NW/emr

April 15, 1960 Miss Frances V. Benner Special Assistant American Chemical Society Office of the Executive Secretary 1155 Sixteenth St., N. W. Washington 6, D. C. Dear Miss Benner: While I am highly complimented by the invitation you have extended to me to spend about one week making the circuit of the local sections of the American Chemical Society in Michigan, Indiana and Ohio in 1960-61, I am very sorry that I will be unable to accept this offer. I shall be abroad from June of this year until February 1961. The rest of the time I shall be completing a half year at Tech as Emeritus, and I feel that work at M.I.T. should have my full attention for that time. With a few engagements already lined up for 1961, I am very hesitant to take on any more. I hope you will understand my position and let me beg off. Sincerely yours, Norbert Wiener NW/emr

April 15, 1960 Prof. Victor H. Bruce Department of Biology Princeton University Princeton, N. J. Dear Prof. Bruce: Thank you for your invitation to attend the Symposia on Quantitative Biology, June 5 to 14, in Cold Spring Harbor this year. Although I find the programme highly interesting, I am unfortunately unavailable for the conference, as I shall be leaving for Europe on the 3rd of June. My very best wishes for a successful week! Sincerely yours, Norbert Wiener NW/emr

April 15, 1960 Prof. M. W. Duckworth Director of Extension Mount Allison University Sackville, New Brunswick Dear Prof. Duckworth: Although I am highly complimented by your invitation to attend your Summer Institute as a lecturer, I must regretfully decline your interesting offer, as I shall be leaving for Europe in June and shall not be back until Spring of 1961. As I see from the programmes of last year which you so kindly enclosed, you have a very fine adult education programme. My best wishes for another successful summer! Sincerely yours, Norbert Wiener NW/emr

April 15, 1960 Prof. B. N. Naumov USSR National Committee of Automatic Control USSR Academy of Sciences Moscow I-53 Kalanchevskaya ul. 15a USSR Dear Prof. Naumov: I am delighted at the possibility of meeting you and your colleagues in Russia this summer at the IFAC Congress. As I think I have told you, the condition of my health makes it necessary that my wife accompany me. I have a letter in my files from Mr. Pavel Tschyvekov, Director of the Publishing House for Foreign Literature in Moscow, stating that when I come to Russia some royalties from my book of "The Human Use of Human Beings" (and possibly "Cybernetics"?) will be at my disposal. Would they be enough to cover all expenses of my wife and myself not already covered by your invitation through the lecture I am to give? I should like my lecture to be on brain waves and self-organizing systems. This is essentially a piece of work in the field of nonlinear feedbacks. Thus it comes under the subject of your conference. Prof. Sokolov who is a physiologist in Moscow has been here recently and has told me something about an International Congress in June, which, I believe, will cover subjects in physiology. I am not sure whether that congress coincides with that on Automation, and I should be obliged to you if you would find out, if you can, if he is making any plans for me, and if so, if they are different from yours. Perhaps we could harmonize the two. Very sincerely yours, Norbert Wiener NW/emr

April 15, 1960 Dr. Sokolov Lomonosovskii pr. 14 ap. 540 Moscow, USSR Dear Dr. Sokolov: Many thanks for your kind letter of appreciation. I shall be in Moscow this summer at the Congress on Automation, and I am making arrangements for this with Prof. Naumov of the Academy of Sciences. I am not sure whether the Physiology Congress you talked about is the same as the Congress on Automation, but I should like to be present at that, too, if it is a different undertaking. I should appreciate it very much if I could receive a letter from you after, if you will, you have consulted Academician Naumov letting me know more definitely what plans you have in store for next summer. Sincerely yours, Norbert Wiener NW/emr



Dear Dr. Clemer, Spending the Easter holedays sking in Pontresina St. Harity. Since my stomach is healed exercise is permissible so Im making the most of the European Monday- Fridae celebration. Verhaps eeerything hoppens on the belt. This rest belowned to do some good; but without the Easter abservance) strely would have Jaunal wark. My best regards to Osemer. Smerely VKAIS-SCHNITTE RACLETTE V BUNDHERFLEISCH / FONDUE BOURGINGHON

THE DOCTORS MANGOLD

729 FIFTH STREET
YAZOO CITY, MISSISSIPPI

April 18, 1960.

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

Dear Professor Wiener:

It was very good of you to express an interest in my work and to offer me an interview. Unfortunately you could not see me during the period from November 16 to 23 and I have been unable to get away since then.

I don't suppose you read the chapters I sent you. I realize that you are probably often annoyed by overzealous authors who send you manuscripts and that you are afraid that they do so in order to coax a polite word out of you which they then misuse for publicity purposes. I had no such intentions. I felt that I had a few interesting ideas and wanted to consult some authorities to find out whether these ideas were original and of any value. My efforts in this respect have been unsuccessful. I have carried on without any assistance and am gratified that two publishers have accepted my work. The Philosophical Library Inc. called it"a work of merit and unusual scope". This does not deceive me. I realize that there are many shortcomings and that some of these could have been avoided by consultation with specialists in the various fields I had to invade.

So far I am still undecided about signing a contract. As the work deals rather extensively with Sartre I may first publish in France.

I do not want to waste your valuable time with an interview which may no longer interest you. I am therefore attaching a copy of the preface which in a few words can give you some idea of the book's purpose and scope. Please let me know if you have any further interest in an interview after reading this. If you do not, kindly just return the chapters I sent you on November 6, as well as the enclosed preface.

for postage.

Yours respectfully.

K. P. Mangold

[ans 6/29/60]

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

April 16,1960

Dear Professor:

I wish happy holidays for you and your family.

From Christmas to Easter I have been waiting for your answer; but now, I think you will not answer.

I see that you are not interested in the value of Π .

I want only to tell you, or better, to remember you that the information I have given to you about the value of M — excerps from my book, "The Exact Calculation of M " — must not to be reproduced.

Very truly yours.

J. Mora

3484 Jeanne Mance Montreal

April 18, 1960 Mr. Jason Epstein Editor Random House, Inc. 457 Madison Avenue New York 22, N. Y. Dear Jason: I have put off work on my new novel until I am in the clear with my revision of "Cybernetics" which will be completed in the near future. Then I shall get busy in preparing at least a scetch of it for Mr. Azimov. We are leaving for Europe early in June and won't be back till February 1961. I have an extremely busy schedule ahead of me including Russia, Germany, Belgium and Italy at least. It will be gratifying. but exhausting. In view of this, I would like to have the matter of the "Tempter" cleared up before we go. At the very least, I should like to know how the sales of the book are going. I don't like to ask favors, but if you could send me the check for the actual existing sales of the book before I go, it would greatly ease the trip. At any rate, I don't want checks following me about Europe so perhaps we can find a way of paying my money directly into my account at the Cambridge Trust Company, Cambridge, Mass. We shall be in New York for at least a couple of days about the 1st of June (my boat leaves on the 3rd), and Margaret and I want to see you people very much; both to talk over my books and even more to have an opportunity of renewing our friendship. Sincerely yours, Norbert Wiener NW/emr

April 18, 1960 Dr. Iago Galdston The New York Academy of Medicine 2 East 103 Street New York 29, N.Y. Dear Iago: It is good to hear from you again. I shall leave for Europe about the 3rd of June, and we shall have a day or two in New York to wind up all sorts of business before taking the boat. Can we get together? I hesitate to suggest one of those posh breakfasts which we have so often had at that big hotel (Iforget its name), but whether in that way or in any other, we don't want to let our contacts drop. My trip to Europe will take me to Sweden and then possibly to Finland from where we shall go to Russia where I shall participate in at least one scientific meeting. There is also a meeting for me to participate in at Hannover, Germany, and I shall spend the fall semester in Naples. Thanks for your appreciation of the book. I shall reserve all further discussion till we meet. Sincerely yours, Norbert Wiener NW/emr

April 18, 1960 hovo-alekierskaga 52 Moson I-278, USSR Mr. Pavel Tschyvekov Director Publishers of Foreign Literature Moscow, USSR Dear Mr. Tschyvekov: I shall be going to Russia this summer under the auspices of the IFAC in order to lecture at the International Congress on Automation at Moscow University. Would it be possible for you to check the amount of royalties resulting from the sale of my book "Cybernetics and Society" (The Human Use of Human Beings) and possibly from the sale of "Cybernetics"? As I read in your letter of November 25 1958, there are royalties waiting for me in Russia. As my wife will accompany me on the trip, I wonder if the money available for my use would be enough to cover my wife's travel expenses. Thanking you in advance for your cooperation, I remain Sincerely yours, Norbert Wiener NW/emr



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Jason Epstein, EDITOR

April 19, 1960

Mr. Norbert Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 38, Massachusetts

Dear Norbert:

Many thanks for your note. I am delighted that you and Margaret are planning such an exciting trip to Europe. I hope that we will have a chance to see you before you leave.

In the meantime, I have asked our Accounting Department to prepare a statement of royalties due you, which I hope will be ready before you leave. In any case, I have instructed them to deposit all future payments to your account at the Cambridge Trust Company.

Meanwhile, we both look forward to your visit here early in June, so that we can talk about the new book, and many other things.

Sincerely yours,

JE: t

- 122 BELL TELEPHONE LABORATORIES MURRAY HILL, NEW JERSEY CRESTVIEW 3-6000 April 19, 1960 Professor Norbert Wiener Department of Mathematics Massachusetts Institute of Technology Cambridge 39, Massachusetts Dear Professor Wiener: I very much appreciated your letter of April 13. My colleagues and I are also troubled about the impasse in which the world finds itself today, which is what prompted us to edit the book of essays on the prevention of World War III. We are also, to quote your letter, "devoid of a single solution to the problem." In all likelihood, no such solution is at present possible. Instead we are hoping to assemble a group of proposals some of which may, if ever implemented, jointly contribute to a solution. Then again, even if it is true that the disease from which modern civilization is suffering is indeed fatal, if we can find ways of prolonging the life of the human race, that in itself is worthy of human effort. It may be only a vain hope, but perhaps by prolonging the life of the "patient", the time gained may enable some future "doctors" to find a "cure". Sincerely yours, MH-122-WME-PH William M. Evan [aux 4/20/60]

the SOCIETY for the HISTORY of TECHNOLOGY

International Quarterly: TECHNOLOGY AND CULTURE

19 April 1960

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

Dear Dr. Wiener:

Thank you for your letter of 13. Of course I understand and appreciate why you are unable to review Pyke's book or write an article for Technology and Culture at this time.

However, I hope that you will be able to give us an article at some time in the future, and I further hope that you will not be annoyed if I write you at intervals of from 3 to 4 months in order to remind you of our existence and of our eagerness to have an article by you in Technology and Culture.

Sincerely yours,

Melvin Kranzberg

MK:sm

RD/8740

DIOGÈNE

Revue Internationale des Sciences Humaines

Le Rédacteur en chef

Paris, le 19 avril 1960

Professor Norbert Wiener
Dept. of Mathematics
Massachusetts Institute of Technology
CAMBRIDGE 39, Mass.

Cher Professeur Wiener,

Je vous remercie de votre lettre du 18 mars. Je comprends très bien que vos nombreuses occupations vous absorbent pour quelque temps. Si vous venez à Paris, j'espère que vous voudrez bien me téléphoner. Je serai ravi de vous rencontrer. Peut-être pourrons-nous organiser un déjeûner ensemble?

En me réjouissant de vous voir dans le courant de l'été, je vous prie d'agréer, cher Professeur Wiener, l'expression de mes sentiments les plus attentivement dévoués.

Jean d'Ormesson.

THE NEW YORK ACADEMY OF MEDICINE 2 EAST 103 STREET, NEW YORK 29, N. Y. TREPHONE TRAFALGAR 6-8200

April 20, 1960

Dear Norbert:

Thank you for yours of the 18th. By all means let's get together for breakfast here in New York. It is a good way to start a signal day.

That Posh Hotel isn't really so "posh" ** There, one gets fine service and one's moneys worth. Do let me know when we may expect that pleasure. I am reserving, subject to your further notice, June 3.

My cordial salutations to your lady.

Sincerely yours,

lago Galdston, M.D.

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

/hw

x The Plaga



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Dr. Heinz Götze

(17a) HEIDELBERG, den 19. April 1960 Neuenheimer Landstraße 28-30 Telefon 27901 Gtz/GW

Herrn

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

Sehr geehrter Herr Professor Wiener,

ich bestätige dankend den Empfang Ihres Briefes vom 11. April. Selbstverständlich respektieren wir Ihre derzeit besonders starke Belastung. Wir möchten Sie deshalb gern von allen redaktionellen Verpflichtungen so lange freihalten, wie Sie es wünschen.

Wir nehmen an, dass wir unter diesen Voraussetzungen Ihre Zusage als endgültig betrachten dürfen und freuen uns über Ihren Entschluss.

Mit verbindlichen Empfehlungen

Ihr sehr ergene

DB



OFFICE OF THE DEAN

SCHOOL OF SCIENCE

CAMBRIDGE 39, MASSACHUSETTS

April 20, 1960

Professor Norbert Wiener Room 2-276 M.I.T.

Dear Norbert:

The person I think you should get in touch with to find out whether anyone else has worked out a method like yours of locating a sharp spectrum line in the midst of a continuum of greater intensity than itself is Professor John Strong, Director of the Astrophysics Laboratory, Johns Hopkins University, Baltimore, Maryland.

Professor Strong and his colleagues have been working very actively on the utilization of Fourier transform methods for the study of infrared spectra.

Your new method sounds very interesting

Very sincerely yours, George R. Harrison

George W Harrison

GRH/ecg

indeed.



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Correspondence should be addressed to:
PROFESSOR SIMON LISSIM
55 MAGNOLIA DRIVE
DOBBS FERRY
NEW YORK

April 20, 1960

Dear Mr. Weiner:

It is with great pleasure that we write to inform you that the Council of the Royal Society of Arts of England, the President of which is H.R.H. The Duke of Edinburgh, has approved your name submitted by this Committee, for election as a Benjamin Franklin Fellow of the Society.

The Society, as I am sure you know, is the third oldest learned society in England, having been founded in 1754, and it has recently decided to make a very limited number of these very special appointments to commemorate the fact that Benjamin Franklin was one of its keenest and most active early members. Franklin appreciated particularly the Society's wide and practical objects, which are still "the encouragement of arts, manufactures and commerce", and its broad, international sympathies, and the accompanying copy of the Society's prospectus gives further information regarding these and other matters.

The Committee hopes that you will accept this nomination and they will be grateful to you for advising us of your decision. We, in turn, will then advise the Council of the Society in order that the election may be made effective.

Most sincerely yours,

Mr. Norbert Weiner Massachusetts Institute of Technology

Cambridge, Massachusetts

[ans 4/26/60]

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REPLY TO

OCNBE

20 April 1960

SUBJECT:

Technical Paper

TO:

Dr Norbert Weiner Massachusetts Institute of Technology Cambridge, Massachusetts

Attached is a technical paper summarizing theoretical information pertaining to the derivation of transfer functions in a multiple input system. This study is forwarded in the hope that the recipient may have the resources to produce a general purpose computer program for the application of this theory. Comments may be addressed to this Headquarters, attn: OCNBEE.

JACK S. ZEJGLED

Chief Science and Engine

Chief, Science and Engineering

Division

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1 Atch
Tech Paper, dtd March 1960,
"Multiple Input Dynamic System
Analysis" by Capt H. P. T.
Corley

1 form

[m2 7/28/60]

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April 20, 1960

Prof. E. R. Caianiello Instituto di Fisica Universita di Napoli Napoli, Italia

Dear Prof. Caianiello:

As time is drawing near to make preparations for my trip to Europe, I remember that in your letter of December 29, you mentioned that you will be in the United States around June this year. Are your plans definite as to when you will be here? I should very much like to see you and talk to you before I sail if this is at all possible.

Our boat leaves from New York on the 3rd of June. (Will you be here before then?) We shall go to Sweden, from there to Finland, and go over to Russia, where I shall attend the International Congress on Automation, June 25-July 5. As you know, I shall have to be back in Germany in September, from where I shall leave to spend a few months at your University.

The work on brain waves is going very well, and wesshall have a great many interesting things to discuss, when, and I hope it will be possible before I leave, I shall have the pleasure of seeing you.

With best wishes for a successful trip to this country, I remain

Sincerely yours,

Norbert Wiener

NW/emr

[aus 5/4/60]

MEDFORD 55, MASSACHUSETTS

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

My dear Professor Wiener:

I am writing to inquire if you would consider returning to your alma mater, Tufts University, to give one of the University Lectures next October or November. These addresses by outstanding people in a variety of fields are scheduled throughout the academic year. I suggest the Fall, specifically, and a Tuesday evening if possible. We pay an honorarium of \$150.

The University Lectures are for the benefit of the academic and surrounding community. We are much interested in your recent excursions into new fields of endeavour. A possible subject might be "Creativity in Science and in Art". I assure you there are many students and faculty at Tufts who would be most pleased to hear you speak to this topic.

I hope you will give this possibility serious consideration. We should be most honored to have you visit Tufts in this capacity.

Very sincerely yours,

Julian K. Knipp

Milan X trupp

Professor of Physics

le 21 avril 1960

Prof. M. Frechel
2, rue Emile Faguet
Paris lh
France

Mon cher collegue:

Je suis tres fier de recevoir votre invitation si amicale de participer comme membre correspondant dans l'Institut International des Sciences Theoriques. C'est un grand honneur que j'accepte avec grand plaisir et je vous remercie pour les termes amicaux de cette lettre d'invitation.

Comme vous savez, je serai cet ete en Europe. J'arrive en Suede pendant la seconde semaine en juin. Je vais participer dans le International Congress on Automation qui aura lieu du 25 juin a 5 juillet a Moscou, et puis je vais prendre part a un congres en Allemagne (Hanovre) dans le mois de septembre. Il me parait donc tres probable que j'aurai l'occasion de visiter Paris et Bruxelles. Je serai a Naples en octobre et je resterai la jusque le mois de fevrier 1961 pour travailler avec M. Caianiello, professeur a l'universite de Naples.

Vos idees sur les espaces de Banach ne me surprend pas. J'ai deja observe que de point de vue de la mesure, l'espace des courbes doit etre supplemente par des distributions a peu pres dans le sense de M. Laurent Schwartz pour voir les proprietes d'un espace compact. Il est quand meme tres interessant a voir l'espace de fonction definitivement oriente a l'egard des espaces de Banach.

J'espere que je puis ecrire davantage sur ces questions quand je suis moins occupe de mes preparations de voyage.

Votre bien cordialement,

Prof. John Strong, Director Astrophysics Laboratory Johns Hopkins University Baltimore, Maryland

Dear Prof. Strong:

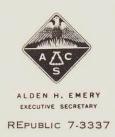
Dean Harrison has told me something of the work you are doing on the use of the interferometer in spectroscopy and particularly, of your interest in infrared spectra. As you may know, I have for a long time been myself interested in harmonic analysis, and I am actively using autocorrelation methods in the study of the harmonic analysis of brain waves. I find these methods peculiarly adapted to the discovery of narrow positive and negative lines in the spectrum in the presence of large amounts of noise; in particular, I have been able to locate it at about 10 cycles per sec. a brain wave line of the width of about 1/18 of a cycle and a similar dip of the same width about 1/9 of a cycle away. I have established the probable error of my observations, and it is less than 1/10 of the intensity observed.

Now the actual height of the line is about twice that of the surrounding continuous spectrum which extends over some two cycles or more, and the total energy of the line is about 1/20 or 1/30 of the total energy of the of rhythm band surrounding it. As a matter of fact, on the autocorrelation curve, while there is perfect and clear evidence of the narrow band, it is so weak that my colleagues at first sight had grave doubts of my ability to recover it.

Now the output of the interferometer is nothing but an autocorrelation, and I presume that your methods of work have made full use of this fact. My ability to pick out faint emissions of absorption bands in the presence of excessive noise can, therefore, be transferred to this other field. I am writing to ask you if you may not have thought of the use of this method for microchemistry by the discovery of such narrow bands at atomic spectra.

I have a further idea which may be useful in extending the precision of this spectrograph. Let us record the interference fringes either directly or through the use of a photograph as a sequence of electric potentials. We have an autocorrelation apparatus which can be used for such electric potentials and will enable us to obtain the autocorrelation of this interference pattern, or in other words the autocorrelation of the autocorrelation of the light. In this, instead of taking the square of the absolute value of the amplitude of the different lines, we take the fourth power. This can easily be a

Prof. John Strong -- 2 useful method of picking out strong lines from the messy chaos of weak lines. Probably some pre-filtering is necessary, but I see no difficulty in principle. What do you think of these ideas and, in particular, do they contain anything that is new? In view of your work, I doubt it, but I shall be very interested to hear from you. Sincerely yours, Norbert Wiener WN/emr



AMERICAN CHEMICAL SOCIETY

OFFICE OF THE EXECUTIVE SECRETARY

WASHINGTON 6, D.C.

1155 SIXTEENTH ST., N.W.

April 22, 1%0

Dr. Norbert Wiener Massachusetts Institute of Technology Cambridge, Massachusetts

Dear Dr. Wiener:

Thank you for your letter of April 15. The local sections in and around Michigan will be sorry to learn that they cannot have you as their guest speaker this coming season but will continue to hope that you may be able to visit them at a better time in the future.

Sincerely yours,

(Miss) Frances V. Benner Special Assistant

FVB/cb

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE 39, MASS.

DEPARTMENT OF MATHEMATICS

April 22, 1960

Professor Norbert Wiener Room 2-276 M. I. T.

Dear Professor Wiener:

Since you told me earlier this week that you would be free on Wednesday, May 25, the Department is planning a luncheon on that day, at 12:15 P.M., in Dining Room 1 at the Faculty Club. This will be in honor of the members of our faculty who reach retirement age this year, namely you and Professors Douglass, Struik and Zeldin.

We are very glad that you can be our guest on this occasion.

Very sincerely yours,

W. T. Martin

WTM/bas

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April 22, 1960

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

Dear Professor Wiener:

LEARNING THEORY AND BEHAVIOR, by Professor O. H. Mowrer has just been published and a copy is on its way to you with the author's compliments and ours.

We are aware of your interest in this field and feel that this book will prove useful to you. Your comments would be most welcome.

Sincerely yours,

W. S. Luter

W. G. Suter

Manager, College Sales

WGS:BB

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April 22, 1960 Mr. Bill E. Elliott 15832 Park Avenue Harvey, Illinois Dear Mr. Elliott: My old feeling with respect to young people who wish to go into cybernetics is that they should found themselves in general science and in mathematics before making the choice of this particular branch of work as a career. The really good ideas of the field are much more likely to come to people with a broad interest and a knowledge of more than one science than to those who direct their studies too narrowly. In other words, get your mathematics. your physics, your chemistry, and your biology so that you have a firm mastery over them and prepare yourself for electrical engineering, not making cybernetics your particular choice until perhaps your Junior year in college when you will have to make closer decisions. As to a book for general reading on the subject, why not look into my book "The Human Use of Human Beings", published in the Anchor Series by Doubleday. Sincerely yours, Norbert Wiener NW/emr

April 22, 1960 Mr. Manfred George Editor Aufbau - Reconstruction 2121 Broadway New York 23, N.Y. Dear Mr. George: Within a week or so I shall be through with my revision of "Cybernetics", and I could send you a few extra chapters if you wanted them. However, they are not of such pressing importance to you that I think it is not worth while to wait for the publication which will take place with Wiley this summer or fall. Sincerely yours, Norbert Wiener NW/emr

April 22, 1960 Mr. Gerald C. Teicher 237 E. Queen Street Hampton, Virginia Dear Mr. Teicher: There are chess playing machines now, but they only play games at the level of a moderate amateur. Checker-playing machines are already master machines. My chess playing friends anticipate that it will be a matter of from 10 to 25 years before the same sort of level will be reached for chess. The greater manifoldness of the chess game and the much higher differentiation of the stages of the game make progress in this area quite difficult. Sincerely yours, Norbert Wiener NW/emr

April 22, 1960 Mr. Sam Wiener, Jr. 431 East State Street Westport, Conn. Dear Mr. Wiener: Your result is not known to me, but then I am not a number theory man. To find a numerical form which is so close to one which contains nothing but primes, as you claim, would be a most extraordinary thing and until I find it established, I am very dubious. In fact, my incomplete acquaintance with the subject does not cover one single case where the result of this sort has been more than a conjecture. Go ahead with the work if you want to, but I warn you that you are going to have very rough sledding. Sincerely yours, Norbert Wiener NW/emr

BURDEN NEUROLOGICAL INSTITUTE

W. ROSS ASHBY, M.D., D.P.M.

WRA/AH.

STOKE LANE,
STAPLETON.
BRISTOL.

TELEPHONE: BRISTOL 65-3221/2

Professor N. Wiener,
Massachusetts Institute of Technology,
Cambridge,
Massachusetts,
U.S.A.

25th April, 1960.

Dear Professor Wiener,

I shallbe in Cambridge on ERIDAY, JUNE 17th, and for one or two days following, and hope I may have the pleasure of meeting you and discussing recent developments. Is this possible?

I enclose an off-print that, though somewhat trivial, does discuss the fundamental philosophy of Cybernetics, and I thought you might find it of interest.

Sincerely yours,

W. Ross Rohly

W.Ross Ashby, M.D., D.P.M., Director.

with complements and best wishes S. Ross holy

Computers and decision making

Sir.—The recent correspondence on this topic has shown that there are still many misunderstandings current, and some failures to keep abreast of modern knowledge. Since today we have a clear and coherent theory of the matter, I would like to help the growth of clarity

and simplicity by sketching its essentials.

The processes that interest us, and about which dispute has raged, are those (whether carried out by brain or digital computer) in which the end-product shows evidence of high selection. For instance, of all the ways in which a bookful of letters might be arranged, one set was actually produced by one Shake-speare showing evidence of very intense selection. And a computer has emitted a string of digits corresponding exactly with the first thousand digits of π . Most practical activities show this aspect of selection as an essential component (as Sommerhoff has shown extensively in his Analytical Biology, 1950). Roughly, getting right answers implies selection.

We now arrive at the simple postulate, valid for all systems, living or mechanical: Any system that achieves appropriate selection (to a degree better than chance) does so as a consequence of

information received.

For what is the alternative? Are we to accept as natural the examination candidate who starts giving the appropriate answers before he has been told the questions? Or the man who sends off his claim to the insurance company before the fire has broken out? Or the computer that starts printing the appropriate answer before the programmetape has been run in? Science knows nothing of such things; until such a phenomenon is clearly demonstrated the postulate must stand.

The arguments for the postulate can be given deeper and more rigorous formulation. The law of requisite variety* expresses the theme rigorously. It is closely related to Shannon's Tenth Theorem†, which says that the selection by which various "noisy" versions of a message are reduced to the correct version cannot be achieved unless a correction channel (or whatever agent performs the correction) transmits a certain quantity of information to the site of correction. Human beings and computers alike are bound by the fact that if they would achieve appropriate selections they must work either subject to the postulate—or by pure magic.

Once the postulate has been accepted,

* An Introduction to Cybernetics. By W. Ross Ashby. (Chapman and Hall, London, 1956.)
† The Mathematical Theory of Communication.
By C. E. Shannon and W. Weaver. (University of Illinois Press, Urbana, 1949.)

the strategy for decision-making follows inescapably. In simple and general terms it is as follows:

- (1) The would-be selector, whether living or mechanical, must first receive some quantity of information. This information is then to be used to narrow the field of uncertainty (among the various possible answers or outputs) to its minimum. The amount of narrowing is bounded by the amount of information.
- (2) After the information has been used up in reducing the field to its minimum, what remains is the "field of ignorance". Lacking further information, no further selection is justifiable. No arbitrary selection within it can claim superiority over any other method ("the random is as good as any other").

In other words, the basic formula for decision-making is: Use what you know to narrow the field as far as possible; after that, do as you please.

Sometimes it happens that there is still a demand for selection even within the field of ignorance. Some selection can always be performed (for example, by using a table of random numbers as determinant), but such selection has no better than a chance possibility of being appropriate. Sometimes the selection can be carried further by the provision of more information, and sometimes this new information can be obtained by the process of "making trials"; for a "trial" is not merely a shot at Success-it may be a process that progressively wins more information, and so makes possible a further appropriate selection.

Thus (still under the iron rule of the postulate) it may happen that the selection is achieved in stages: first the primary information is used to narrow the field of ignorance; then extra information is won by trials until the total information has reached the quantity necessary for the complete selection.

The "despair" mentioned by Mr. C. Strachey (Letters, 3 March) can now be seen in its proper proportion. Within the field of ignorance it is justified, for (by hypothesis) the primary information is exhausted, and everything must be tried. But the "everything" is only "everything within the field of ignorance", and this may be only a small, perhaps an exceedingly small, fraction of the whole.

The principles given above hold over both brain and computer, and over both the simple and complex cases. The complex case often breaks up into a sequence of selections, over each of which the postulate holds. A part of the selection now often becomes a selection of an appropriate "way of breaking up"; the postulate holds with equal force over this particular case.‡

In conclusion it may be of interest to glance at the reason why these simple principles have so long eluded us. I think the reason is that we have hitherto quite mis-estimated the quantities of information that go respectively to the computer and to the human being before they start their selective processes. In programming a computer we are acutely aware of how much labour it costs us, and we think the amount of information is very large; in fact it is small. The programmer, as a human being, however, is apt to be almost unaware of how much processing the human being has gone through-in evolution and in childhood—and he is apt to think the amount is small; in fact it is extremely large. After two thousand million years of evolutionary selection, followed by all the experiences of childhood and later training, he has accumulated a great store of information; with it he can perform feats of appropriate selection that far surpass those of today's computers, provided the problem is of a type for which his information is relevant. When this is so he can show to advantage.

Before he plays chess, for instance, he learns a lot about three-dimensional geometry by just moving about in the world; so rows, columns, and diagonals can be indicated to him on the chessboard with a flick of the finger. The computer, however, must have this particular three-dimensional geometry specified in detail. But let the chess become five-dimensional, say, so that both are equally void of primary information, and the human being's thought processes become as laborious and detailed as the computer's. In the same way, the average human being has accumulated a great deal of information about "continuity"; so, if the problem has this peculiarity, he has a flying start over the computer. The facts thus suggest that the human being comes to his work with a far greater store of information (as "pre-programming") than the computer.

If this difference be taken fully into account, both their activities, successes and failures, will be found to be in accord with the basic postulate. And so both are bound to follow the same basic strategy for decision-making.

W. Ross Ashby. Burden Neurological Institute, Bristol.

‡ These more complex cases are discussed in Chapters 17 and 18 of the new edition of Design for a Brain. (Chapman and Hall, London, 1960.)

April 25, 1960

American Automatic Control Council c/o Mr. W. E. Vannah, Secretary 330 West 42nd Street New York 36, N. Y.

Gentlemen:

I am enclosing Professor Wiener's application for the IFAC Congress and a check amounting to \$35.00.

As Professor Wiener received his invitation and application blanks rather late, and as he is going to leave for Europe the end of May, he would appreciate it very much if you could process the enclosed as soon as possible so as to give him a chance to get his Russian visa before he sails.

Please let us know if there is anything else he might have to do. Thanking you for your cooperation, I remain

Sincerely yours,

Eva-Maria Ritter (Mrs.) Secretary to Prof. Wiener If you do not intend to apply for the attendance at the Congress, please return this sheet either to your member organization or to the IFAC Secretrary, otherwise you would prevent another person from being admitted to the Congress.

This copy is for your files

APPLICATION SHEET

for attending the First International Congress of IFAC for Automatic Control

If you wish to attend the Congress you are kindly asked to complete the Application Sheet typewritten and to send copies to each of the undermentioned addresses:

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1. Surname: Wiener	2. First Name:
3. Position and Title: Professor of Mathematics, Ph.D.	4. Country: 4. Cou
5. Firm, Institution etc.: Massachusetts Institute of Te	
6. Address: Cambridge 39, Massachusetts,	USA
Department of Mathematics	
7. I speak the following languages*: English, Ru and I am willing to help interpreting at the Technical Sessions m	ainly in Section
1 (Theory) * 2 (Components) *	3 (Applications) *
8. I am author * / not author * of a paper to be presented at the Mo	scow Congress.
9. The following persons are accompanying me to the Congress wit	hout attending the technical sessions:
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EJ/L.

STUTTGART W, den 26. April 1960. Hasenbergsteige 3

Herrn Professor
Dr. Norbert W i e n e r
Massachusetts Institute of Technology
Department of Mathematics
C a m b r i d g e 39/ Mass.
U.S.A.

DURCH LUFTPOST !

Aleprin Trus

Sehr geehrter Herr Professor !

Ich danke Ihnen bestens für Ihr freundliches Schreiben vom 11. April. Es tut sowohl mir wie Herrn Dr. Bernsdorf sehr leid, dass Sie auf das Stichwort "Semantik" verzichten möchten, indessen können wir das gut verstehen. Ich übersende Ihnen infolgedessen einen neuen Vertrag nur für die "Kybernetik" und bitte Sie, uns eines der beiden Vertragsexemplare mit Ihrer Unterschrift versehen wieder zuzuschicken.

Mit den verbindlichsten Empfehlungen Ihr sehr ergebener

Anlage: 2 Vertragsexemplare.

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-STUTTGART W. den

Mitarbeiter - Vertrag

Herr Professor Dr. Norbert W i e n e r , Cambridge/ Mass., übernimmt für die zweite Auflage des von den Herren Dr. Wilhelm Bernsdorf und Prof. Dr. Friedrich Bülow, beide in Berlin, herausgegebenen Werkes

"Wörterbuch der Soziologie"

die Bearbeitung des Stichworts "Kybernetik" gemäss der mit Herrn Dr. Bernsdorf getroffenen Verabredung. Es muss ein Originalartikel sein; er darf anderweitig nicht verwendet werden.

8 2.

Der Verfasser wird das gesamte Manuskript seines Stichworts bis 31.Dezember 1960 an Herrn Dr. Wilhelm Bernsdorf, Berlin, abliefern und verpflichtet sich, diesen Termin pünktlich einzuhalten. Das Manuskript soll vollständig druckfertig und mit der Schreibmaschine geschrieben sein. Ort der Erfüllung des Vertrags ist der Verlagsort.

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Stuttgart, 26. April 1960. Erecinary Entry

CHAIRE DE CALCUL DES PROBABILITÉS ET PHYSIQUE MATHÉMATIQUE

II, Rue Pierre-Curie PARIS (5°) Paris, le 26 3 1960

Man cher wellegue

J'wiell he' lowke pur les lernes si amicaux de vot he letheden 23 Mars

Vous y failes allusion, pour terminer cur problème que je vous avais

rignale:

L'espace des courbes est-il un espace de Banach?

(Espace que j'appelle servent espace de Banach-Wierer-Hahn, qui, tous hois, l'out inventé indépendanment).

g'ai rouvent propose ce problème et dans ces des m'eis, annés, j'y avais havaille sons necès moi-même.

E'est après ma lethe que j'ai découver un conhe exemple d'après lequel la réponse est négative, quand on choisit d'une façon qui per per aut raissonnable les definitions de l'esque des combes, et soms cet esque : du produit par nataire, de la distance, de l'olément ventre et de la noine. Alors ancerne definition de la somme ne peut en faire un espace B. W. H. — quelque l'emps après ma lethe Dians en Mote tain C. R. présédent, je vous en envoye la démoustration j'ai aborde comb en une digaine de pages blanches da cty lographies. Mais comme vous recevez certainement beauvoir d'imprinés, ces pages ont pur

Dans me Note aun C.R., 1.950, 1960, p. 1837-38,
d'ai aboide' la question d'une autre façon. En utilisant em théoreme se Banach
et ma definition on type se d'insension, on voit que le même problème
aurait une réponse positive si le problème mivant, qui a son

intérêt propre, avait une réponse positive Comieron l'espant de combes continues orienteles, prouver de la definition que j'ai donn' dans ma Thère de la distance de 2 courble, Ell'espace classique C des finctions flas contintes un 01. D'aprè le the aim de Banach, on a $\Gamma = \Gamma_1 + \Gamma_2$, $C = C_1 + C_2$ on Ti, Ta und disjoint de même que C, et Ca el l'esthoneonosphe à Ci (i=1,2) En partientier, il fromreat arriver que 12 et a sorent vides (on 1, et (,) bela a-t-il hen! Antienen ort, peut on constiure une home omosphie entre la ospaces 17 et C? E'est la un problème qui pressent intérener soit vous - mono soit un de vos éléves. Vousaniez plus de de hail Dans ma Note aun C. P. De Georges Darmois qui élant Président de l'Institut International de Statistique vient de mousir. Heat remplacer provinciement par un des Vire-Presidents, l'italien Bolebrini. g'ai els norme: Via-President posovisone pou remplacer Boldrini. Je sui done moralement force de partirirer au procheció Congri de Statistique qui and hen an gapon. E'est dine que, probablement, je n'amai par le plansa De vous renembre pendant votre voyage en Europe. ge vous en enprime tous me, regnets Vote ben condulomas

Mr. Freikel

Institut international des sciences theoriques Palais des Académics, à Bruxelles Della orbita PARIS. le II avril 1960 Monsieur le Professeur N. WIENER Mon cher collègue, L'Académie Internationale de Philosophie des Sciences ne comprend plus actuellement que 33 membres titulaires en vie sur les 47 (dont quatre lauréats du Prix Nobel) qu'elle comprenait lors des dernières élections; de même elle ne comprend plus actuellement que six membres correspondants sur sept. Vous trouverez ci-jointe la liste complète des membres de l'Académie, tant vivants que décédés, le nom de ceuxci étant accompagné d'une petite croix. L'Académie entend remolacer ces derniers, dont deux Prix Nobel, par de nouveaux membres de même importance. J'ai le plaisir et l'honneur de vous informer que vous figurez au nombre des premiers élus. Je vous adres-se toutes mes félicitations, au nom de l'Académie, pour ce succès qui, d'ailleurs, honore plus encore l'Académie que vousmême. Toutefois, je vous serais très obligé si vous vouliez bien, - si possible par retour du courrier - m'informer si vous acceptez de prendre place dans notre Compagnie. Comme il est possible que vous n'ayiez que peu ou pas de renseignements sur notre Académie, qui est de fondation relativement récente, je vais, pour éclairer votre décision, vous donner quelques informations à son sujet. 0/00

Après un départ très brillant marqué tout spécialement par les grands colloques de Bruxelles et de Paris, l'Académie avait suspendu provisoirement l'organisation de réunions pour
se limiter à la publication de ses travaux. Pendant quelques années,
le Conseil Académique a mené d'assez longues et délicates négociations pour assurer l'autonomie scientifique et financière de l'Académie. Ce but étant enfin atteint, l'Académie a commencé par passer
à l'élection des membres de son Conseil Académique et m'a fait le
très grand honneur de me nommer pour trois ans, son Président. Au
point de vue scientifique, elle a pu aussi réunir un Symposium à
Rome, du Ter au 6 avril 1959, où quinze rapports ont été présentés
et discutés. On y a traité : de la finalité en biologie, de divers
aspects philosophiques de la physique, des limitations du formalisme
mathématique et de divers sujets de caractère méthodologique.

Notre Académie se propose d'étudier annuellement un sujet particulier dans un colloque restreint de spécialistes et tous les trois ans, un sujet plus vaste devant son Assemblée Générale et quelques invités.

Le manque de temps n'ayant pas permis d'organiser avec le soin nécessaire un colloque cette année, deux colloques sont prévus pour 1961, et traiteront l'un un sujet de biologie, l'autre, probablement, un sujet de physique. Vous recevrez ultérieurement des détails sur ces deux colloques.

Dans l'attente d'une réponse favorable, je vous prie d'agréer, mon cher collègue, l'expression de mes sentiments très distingués. et de mon he amical nouveluis

Le Président de l'Académie Internationale de Philosophie des Sciences,

the Frechet

Maurice FRECHET.

Membre de l'Académie des Sciences (Paris)

Membre étranger des Académies des Sciences
de Pologne et des Pays-Bas.

2, rue Emile Faguet PARIS ILe (France).

[aus 4/21/60]

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+ WHITTAKER, E. T.	constrain	Grande-Bretagne
BARZIN, M.	10140-00-10	Belgique
DALCQ, A.	(Biologie)	Belgique
+ DE DONDER, Th.	and the same of th	Belgique
DOCKX,S.	(Philosophie des Sciences)	Belgique
DOPP, J.	(Philosophie des Sciences)	Belgique
MANNEBACK, Ch.	(Physique)	Belgique
PAULUS, J.	(Sciences humaines)	Belgique
+ BAYER, R.	10100-00000	France
+ BOREL, E.	60 -17-10-10	France
de BROGLIE, L.	(Physique)	France
+ CAULLERY, M.	et de de co	France
+ COLLIN, R.	discinations	France
+ CUENOT, L.	aprilimental	France
DESTOUCHES, J. L.	(Physique)	France

DUBARLE, D.	(Philosophie des Sciences)	France
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FAURE-FREMIET, E.	(Biologie)	France
FEVRIER, P.	(Philosophie des Sciences)	France
SALMAN, H. D.	(Biologie)	France
VANDEL, A.	(Biologie)	France
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BROUWER, L. E. J.	(Mathématiques)	Pays-Bas
HEYTING, A.	(Mathématiques)	Pays-Bas
+ POS, H. J.	ration convenience	Pays-Bas
RAVEN, Chr.	(Biologie)	Pays-Bas
SIRKS, M. J.	(Biologie)	Pays-Bas
BERNAYS, P.	(Logique)	Suisse
BOCHENSKI, I. M.	(Logique)	Suisse
GONSETH, F.	(Philosophie des Sciences)	Suisse
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PORTMANN, A.	(Biologie)	Suisse
MONTALENTI, G.	(Biologie)	Italie

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COLLOQUES PHILOSOPHIQUES DE ROYAUMONT

Secrétariat : 173. bd Saint-Germain PARIS 6è

Paris, le 26 avril 1960

Monsieur,

Le Vème Colloque Philosophique International de Royaumont se tiendra au Centre culturel de Royaumont du dimanche 18 au vendredi 23 septembre 1960. Le thème choisi est La dialectique.

M. BERGER, directeur général de l'Enseignement supérieur, président du Comité des Colloques philosophiques, me prie de vous inviter à assister aux débats. Nous serions très heureux que vous acceptiez d'honorer le colloque de votre présence.

Suivant la tradition, le nombre de participants invités demeure peu élevé; une totale et entière liberté d'expression est de règle à tout moment. Des discussions fructueuses et sans contrainte peuvent ainsi s'instaurer entre spécialistes des mêmes questions. Le texte des conférences sera ronéoté et adressé à tous les inscrits avant le début du colloque.

Selon l'usage, les congressistes sont les hôtes du Centre culturel de Royaumont qui leur assure le séjour pendant toute la durée des travaux. Pour les frais de voyage, vous pourriez sans doute solliciter une aide de votre université ou d'un autre organisme avec lequel vous seriez en contact. De notre côté, il nous est difficile, même pratiquement impossible, de prendre le moindre engagement dans ce domaine.

Vous seriez très aimable de nous faire connaître votre réponse avant le 31 mai.

Nous vous communiquerons par la suite tous renseignements pratiques complémentaires.

Veuillez agréer, Monsieur, l'expression de notre respectueuse considération.

C. SALOMON-BAYET (Mme), Secrétaire du Comité.

(. Islomon . Vonget .

M. le Professeur WIENER
Mathématics Institute of Technology

CAMBRIDGE (Mass.)

U.S.A.

[aus 5/27/60]

April 26, 1960 Mr. William M. Evan -122 Bell Telephone Labs. Murray Hill, N.J. Dear Mr. Evan: I am fully in agreement with you as to the paramount importance of your objectives and as to the difficulty in achieving them. The main problem is to make people aware of the imminence of the dangers which are confronting us without at the same time paralyzing their abilities to think and to try to do something about it. I cannot help calling to mind the medieval Latin hymn of Bernard of Clairvaux: Ora novissima, tempora pessima sunt, vigilemus. Ecce menaciter imminet arbiter illa supremos, imminet, imminet, ut mala terminet. (The hour is very late and the times are most evil. Let us watch! Behold, the judge is upon us and threatens us. He on high -- he threatens, he threatens. so he may end the evils!) What we need is awareness and fear; not the fear that paralyzes their action but the fear that compels us to think very hard. Sincerely yours, Norbert Wiener NW/emr

April 26, 1960 Prof. Julian K. Knipp Physics Department Tufts University Medford 55, Massachusetts Dear Prof. Knipp: Many thanks for your invitation to give one of the University lectures at my alma mater next October or November. There is just one trouble: I shall be in Italy at the time and, as a matter of fact, I shall leave for Europe in June and do not return until January or February 1961. Under the circumstances, is there any way of putting off my lecture until the Spring term? I expect to return with a budget of new work which may be interesting to you people. Sincerely yours, Norbert Wiener NW/emr

April 26, 1960 Brig.-General David Sarnoff Chairman Royal Society of Arts John Adam Street, Adelphi London, W.C.2 England Dear General Sarnoff: I am highly honored by your nominating me for election to a Benjamin Franklin fellowship in the Royal Society of Arts, and it is particularly gratifying to me that it is you personally who signed the letter to me. Please put my name up for election and count on my sincere cooperation in supporting the future work of the society. Sincerely yours, Norbert Wiener NW/emr

PERISTALSIS CLUB

The 129th rumble of the Peristalsis was held at Dr. Gundersen's home on 27 April 1960. All were present except for Drs. Parsons, Taylor and Ingraham. Dr. Ingraham has had a caronary but, happily, reports tell of his convalescence. The first order of business was to request our host to dispatch a telegram of good wishes to Franc for a full and speedy recovery. M.I.T. Institute Professor Norbert Wiener, having entered and graduated from the University in his early 'teens, has been stirring the molecular broth of his and our brains for more than 50 years. He phased in the members by talk of Cuba, universals, virology, his forthcoming Terry Lectures at New Haven, a revision and extension of his book due in June, genes, the machines stamped with the image of its creator as man is with his, all during—

Cocktails

Soupe à la tortue verte

Sherry Sec, Pedro Domenique

Filet d'agneau à couronne

Pommes de terre à cornes, asperges, chou-fleur

Vouleaux 1957

Tourte Citron, merangué

Demitasse

Liqueurs

Dinner conversation was general and special. Host Gundersen toasted Professor Wiener in Norwegian who responded with same. Honorary membership was proposed for Dr. Wiener who replied graciously, noting that he was deeply "moved" by the peristaltic rush of good will. Like Newton who dispensed with St. Thomas, Aristotle and God, the unmoved mover, Dr. Wiener asked us to dispense with the concept life. The new industrial, social and psychological revolution is on the march behind the leadership of man as the learning machine. Man stamps his image on the game machine such as a checker-player which is programmed with all possible legal moves, rank of values, numerically rated. Assumptions, weighting of moves are altered by the machine as wins and losses are experienced. Forgetting of early unsuccessful and reweighting and remembering of successful experience is progressive.

Genetics may be such learning. On the phylogenetic scale germplasm learns how to make a heart and other organs, wings for birds, and learns nesting habits, all of which environment selects. This learning perpetuates the species as it is built into molecular arrangements which, once learned and acting, tend to draw untutored molecules into the same patterns. These are the spectra or harmonics of energy events.

We thus passed by easy stages from the checker playing machine to viruses, to genes, to biologic predictive behavior, and at last to the available hardware which imitates this. The keys are a non-linear transducer (eliminating time) and random function inputs (currents with bunched quanta magnified to random noise) which will follow curves with certain probabilities. Two boxes, the white and the black, for random in-and-outputs treated statistically, are returned to linear (orthogonal) transducers, i.e., re-establishing time, direction and space (predictability). Dr. Enders questioned mathematical assumptions at this point. Dr. Wiener explained that the set of boxes can be devised for any in-and output which is synthesizing observed energy events for the purpose of analysis. Specifications for such system exploratives are available.

Dr. Wiener then returned to the idea of self-organizing systems, compared brain waves in a simple way to the 60-cycle current and automatic regulation of wave length by generators in parallel, attraction between frequencies, a dramatic illustration: those large fireflies which tend to blink in unison over the swamps of New Guinea. They may be induced by intermittent lighting to change their tempo, as I suppose crickets' timing might be altered by sound as well as heat and as we know, two hearts may be made to beat in three-quarter time. Dr. Barlow's experiments with flicker effects in brain waves correlate with production of seizures in epileptics chancing to drive by a line of trees looking at the setting sun. Dr. Wiener has a hunch. The alpha brain wave system may be the mechanism which keeps the (hemi-) spheres in tune, not simply a scanning device, as I have heard.

Dr. Wiener closed his talk on an aesthetic note, the mathematical charms of the snowflake. These evanescent beauties of nature have infinitely variable individual actualities occurring in an absolutely universal form, oddly like an Ionian Cross. These are words traditionally used by theologians to refer to the incarnation of God (Omnia opera, Laudate, Domine), but the loveliness of the snowflake may be due to oscillatory symetrics. This and the harmonics of the (hemi-) spheres reminds the scribe of Dante and before him of Plato and before him of Pythagorus. The traditional relation between mathematics, music and theology all may be related to the brain's neural net—who or whatever may have devised that!

The doctrine of man as a thinking machine explains this by stating that Homo Faber's tools have made first Homo Sapiens' thinking machine and then his knowledge. Nearly 20 years ago Dr. Wiener and his associates divided behavior into active purposeful, feedback or predictive, and non-active or passive, nonpurposeful and non-predictive, in short, the complementarity of Bohr, i.e., must have random in- and output, and make it calculable. For several years since Walter's Machinae speculatrices, Elmer and Elsie, machines have learned, acted, taken in nourishment, fought and loved and had neuroses. The one characteristic of the living human brain which the thinking machine does not have is passive, nonactive nonpredictive deliberative behavior. This is conscious reflex delay. Let us say it corresponds in nature to "force at a distance," an inertia of energy events which formerly was called the force of gravity. In the individual human it is the youth who won the Joust of which Dr. Wiener spoke or David and Goliath. Inhibition changes the mathematical (probability) rules. As reported by human consciousness of consciousness, it is related to awareness of death by which one creates his personal perspectives of time and space.

As I now see my notes on Professor Wiener's talk through the bottom of my last glass of whiskey, I beg him to excuse my perspective on the fascinating things he said. I do hope all members during the summer when they look at fireflies will be sure who is winking at whom and be not drawn into any strange rhythms.

Until we meet in Henry Faxon's home on 26 October --

8/19/60 / MICROWAVE ROLE IN HUMANS CITED MOLECULAR CHANGE REPORTED TO SCIENTIFIC CONFERENCE -- RESEARCH VALUE SEEN By JOHN A. OSMUNDSEN New and possibly important biological effects of radio and radar waves were reported at a three-day scientific meeting that concluded here yesterday. One scientist told of producing "a profound molecular change" in human gamma globulin with specific wave lengths of radio waves in the high frequence to very high frequence, or VHF, range. Alterations so created in the molecules that constitute an important part of the body's defense apparatus were accompanied by at least a fourfold increase in their biological activity, the scientist said. "The changes can be produced under widely varying conditions of voltage, power, pulse width and pulse repetition rate, provided the frequence is suitable," according to Lieut. Col. Sven A. Bach of the Army Medical Research Laboratory in Fort Knox, Ky. This is believed to be the first report of a proven frequency-specific effect of radio waves on human chemistry. The finding is expected to have value as a research tool and may ultimately have clinical applications if the effects can be duplicated in living subjects. Dog Experiments Cited Another scientist reported findings indication that there might be an interaction in living things between microwave radiation in the radar range and ionizing radiation, such as X-rvs. This was suggested by experiments conducted at the University of Rochester in which dogs that had received large doses of X-rays were more sinsitive to the heating effects of microwaves from a radar than to increaded envoronmental heating to the same temperature. That finding might also suggest the existence of a new nonheating effect of mocrowave exposure, Dr. JoeW. Howland, who directed the word remarked. He elaborated on these results after delivering his report at the Fourth Annual Tri-Service Microwave Conference that was held in the auditorium of the New Work University Medical Center. Animals that had been chronically treated with microwaves over bong periods have shown an increased capacity to survive doses of X-rays that are lethal to 80 per cent of those exposed, Dr. Howland said. Vasmacular System Affected This may be a result, he said, of an accommodation to Physiological stress produced by microwave exposure or of the "expercising " that microwave radiation gives the animals' vasclar system, which is a target of X-ray attack. Although these two reports suggested possibly salutary effects of mictowave radiation on living things, the series of conferences was started in 1957 in an attempt to collect information that would define its biological hazard. Potential hazard from microwave radiation is believed to exist mostly on the heat the waves can produce in a person's body. Personnel of radar installations are constantly subject to exposure to this radiation, but no serious accidents have yet occured, according to Col. George M. Knauf who derects the tri-service program. Most concern has been sirected to the possible hazard of microwave radiation to the lenses of the eyes and genital region because circulation in those areas is not adequate to dissipate the heat that could build up dangerously before the victim was aware of being exposed.

One study of this problem disclosed the first indication of primary chemical changes brought about in the eye by microwave radiation.

W Hazards Are Assessed

Dr. Lorenzo O. Merola of Tufts University told the meeting of finding that the concentration of two chemicals, ascorbic acid and glutathione, drops in the eye soon after exposure to microwaves.

Another study being conkucted by Dr. Milton XXXXX ass Zaret and Dr. Merril Eisenbud of New York University is aimed at assessing the hazard of developing cataracts ant to other eye diserders among persons who work with mivrowaves. Preliminary findings syggest that the hazard is not great.

Dr. BachIs report appeared to gause more comment at the conference than almost any other, for the effect of radio frequencies on human gamma globulin in the test tube were clearly not a resutl of heating.

It was suggested b Dr. Bach that the increased biological activity of the moleculse as measured against a rabbit serum sensitized to them might have resulted from an unfolding of their structure, thus exposing more active spots.

Dr. Joseph H. Vogelman of the Capehart Corporation went on the to speculate that the effect was the caused by a kind of resonance between the frequency of the radio waves and the shape of the molecule. This would be not unlide the resonance shown by striking a spring with a hammer at just the right frequency to get the most bounce.

Such an action, he said could do the damage that apparently was done to Dr. Bach's gamma globulin molecules.

Noted French Naturalist

Jean Baptiste Audebert, French artist and naturalist who died in 1800, originated the use of gold-leaf to show the plumage of birds.

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TELEPHONE: COMMONWEALTH 6-5450

April 27, 1960

Prof. Norbert Wiener 53 Cedar Road Belmont, Mass.

Dear Prof. Wiener:

At the request of your secretary, we are enclosing herewith application forms for Soviet Russia for yourself and Mrs. Wiener. The forms are in triplicate. You will answer all questions on the form, and the application forms should be typewritten or legibly printed. Two photographs will be required for each applicant and must be signed across the bottom of the front of the photograph so as not to mar the features.

The following information will be required in order to obtain a passport: the date of entry into Russia and the means of transportation into Russia, the date of exit from Soviet Russia and the means of transportation. We would also require a list of the cities to be visited and the number of days in each city. The cost for deluxe arrangements while in Russia will be \$30 per day per person which includes hotels, meals, transfers, sightseeing and tour guide.

Since it will take from three to eight weeks to obtain a visa, the completed applications, sighed photographs and the passports should be sent to this office as far in advance of your intended departure as possible.

Yours very tauly,

Henry J. Schindhelm Travel Representative

HJS/han Enc. BARBER-COLMAN COMPANY

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

Dear Dr. Wiener:

At lunch today one of our vice presidents commented on the excellence of your remarks last Saturday. Several others have also mentioned that your ideas were extremely important in this changing age.

On checking my calendar I now realize that the proposed dinner date is to be two weeks from yesterday rather than the one week which I mentioned. However, I did tell you May 10, which is the proper date. I am looking forward to dining with you and Mrs. Wiener at the Cambridge restaurant which you suggested. I am asking Mr. Robert McCarthy of Barber-Colman Company who is also attending the Arthur D. Little course, to dine with us. We would also be delighted if Peggy would join us on May 10.

We realize that your preparations for the trip to Russia are time-consuming and therefore we will not expect the dinner to be lengthy.

Cordially,

BARBER-COLMAN COMPANY

Head, Operations Research

E. C. Varnum

cc: R. H. McCarthy

April 27, 1960

Houghton Mifflin Company 2 Park Street Boston, Massachusetts

Gentlemen:

As Professor Wiener is leaving for Europe in early June, he would appreciate your cooperation in checking your books with regard to sales and royalties due on his book The Human Use of Human Beings, both the English and foreign editions.

He would be gratified if you would find it possible to send him a check for the existing sales of the book before he goes to Europe so that he won't be followed about Europe by checks, but if it should be too inconvenient at the present time, perhaps a way could be found to deposit the money into Professor Wiener's account at the Cambridge Trust Company, Cambridge, Mass.

Sincerely yours,

Eva-Maria Ritter (Mrs.) Secretary to Prof. Wiener

Electrical Manufacturing

Design Engineering of Electrically Energized Machines, Appliances and Equipment

A CONOVER-MAST PUBLICATION . 205 EAST 42ND STREET, NEW YORK 17, N.Y.

April 28, 1960

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

Dear Professor Wiener:

It has been some time since our last, very brief, meeting. I have eften thought about it, although I must confess that our meetings prior to the last are far happier memories. I hope that this letter will be more welcome than my last visit - otherwise I would not presume to write it. And although I am hopeful, I must confess that I am writing with some trepidation.

I have just received a copy of your address to the American Association for the Advancement of Science, in Chicago, on December 27, 1959 - having tried to obtain it for the past four months. I must say it was difficult to get a copy, but I have one now, I have read it, and I am very much impressed. I still feel very strongly that our readers should have an opportunity to hear your concern - in your own words. I am enclosing a copy of an article that appeared in Product Engineering on January 18, 1960 - I aplogise for the poor copy, but you have undoubtedly seen the article before. I consider this an example of presentation and condensation which - I am proud to say - Electrical Manufacturing would never wish to do.

May I ask you again, whether you would consider granting us the privilege of publishing your work? Please do not think that I am presumptious or agressively perservaring. I am very concerned about the moral consequences of automatization, and I feel very strongly that these consequences must be brought to the attention of our readers. Nobody is as competent as the man who instituted the science of Cybernetics to foresee the consequences and to present them to the public. I do not want to excerpt from your speech - I believe that only you can present this subject as it ought to be presented. It is my job to give the best obtainable material to our readers - and, therefore, I am asking you again to allow us to present your knowledge.

I am taking the liberty of enclosing a reprint of an article I wrote for our last issue. I am doing so, being painfully aware of the fact that my own knowledge is very smallk and my contribution most inadequate. But even what little knowledge I have and the small contribution I am able to make has shown that our readership is anxious to learn about this subject. And although I am aware of the fact that most of your students and readers are far more distinguished and learned than I am, I am asking your permission to express my gratitute to you for having

givengme the chance to learn what I can absorb from your books. I would like to give others the opportunity to read your words. I believe that an article from you in our magazine would inspire many of our readers to seek out your books and learn.

May I hope that you will let me know your decision? And that you will permit us to render this service to our readers?

Yours very sincerely,

alice Many Helton

Alice Mary Hilton Associate Editor

AMH: AH Enclosure

[ans 5/1/60]

THE JOHNS HOPKINS UNIVERSITY

LABORATORY OF ASTROPHYSICS AND PHYSICAL METEOROLOGY

BALTIMORE 18, MARYLAND April 28, 1960

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

Dear Dr. Wiener:

It was very exciting to hear of your use of autocorrelation methods in the harmonic analysis of brain waves. It is possible that your methods of analysis may have some power that we are not yet using.

I am sending you two reprints of our work that delineate our methods of transforming interference to spectra. Also, I have asked Dr. George Vanasse and Dr. Ernest Loewenstein, who happen to be located in your community now, if they will call on you to explain our methods and determine if taking the square of the absolute value of the amplitude would promise help.

Sincerely yours,

John Strong

JS:hew

John Strong

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OFFICERS

RUFUS OLDENBURGER President

JOHN C. LOZIER Vice-President

WILLIAM E. VANNAH Secretary-Treasurer

April 29, 1960

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

Dear Dr. Wiener:

We have received your completed application sheet and registration fees for yourself and Mrs. Wiener. I know you will have an enjoyable 30-day visit in the Soviet Union and I look forward to discussing your observations when you return.

Because the serial number of your application sheet is not included in the serial numbers sent to me for application of our American delegates, I am a little puzzled. It appears that the National Committee of USSR for Automatic Control extended you an invitation to present a paper and to be an individual member of the Congress. Nevertheless, as Secretary-Treasurer of the American Automatic Control Council, I am happy to process your application and registration.

For clarification of the U.S.A. portion of the IFAC Congress Program, I would appreciate your describing to me how you will participate in the Program.

My European Editor, Derek Barlow, will attend the Congress. I would appreciate your cooperation in allowing him to interview you sometime during the latter days of the Congress.

Very truly yours,

William E. Vannah Secretary-Treasurer

V/c

cc: Dr. G. Ruppel

Dr. R. Oldenburger

Mr. D. Barlow

Application sheet no. 708

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JOHN C. LOZIER Vice-President

WILLIAM E. VANNAH Secretary-Treasurer

April 29, 1960

Mrs. Eva-Maria Ritter
Secretary to Prof. Wiener
Department of Mathematics
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Dear Mrs. Ritter:

The fact that you have sent copies of Professor Wiener's application sheet to both Doctor Ruppel and the National Committee of USSR for Automatic Control means that Professor Wiener's application has been properly processed.

Just as soon as we receive from Doctor Ruppel the registration cards, we will send one to you for completion.

Very truly yours,

William E. Vannah Secretary-Treasurer

/V/c

Arthur Herzog III 80 Irving Place, New York 3, N. Y.

April 30, 1960

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

Dear Dr. Wiener:

I'm extremely sorry I was not able to see you this week in Boston--I waited for you over in hour in hopes of catching you after lunch. Since I wasn't able to deliver the photos in person, I am sending them by mail under a separate cover.

Think Magazine is anxious to run the interview on you--you were sent a draft of it, which I hope you still have. The editor, however, would like one additional quote, in answer to a question I didn't have a chance to ask you when I interviewed you.

In the interview you explained very clearly some of the possible dangers to society that might result from the use of computers. The point, I think, was that machines might not be used for human ends, and that we should guard against this danger. What the editor would like to know is this: what are the beneficial possibilities of the machines? That is, if we do heed your warning, and concentrate on human uses, won't the machines be a social contribution?

I'm aware this sounds obvious. However, the interview is a little lop-sided on its pessimistic emphasis. To balance it, a word should be said on the fact that the machines are after all a tool, which can be used for good or ill.

We would be most happy if you would consent to dictate a paragraph to your secretary on some of the positive aspects of computers. If you don't care to do this, I will be in Boston on June 6 and will come see you, in order to get your view in person.

The magazine would, of course, show you the final version of the story before using it.

Thanking you, I am

Sincerely, An Huzo