#### SOCIETA' ITALIANA DI FISICA

Via Saldini, 50 - M I L A N O - Tel. 29.21.78

MILANO

14.4.1958

Illustre Professore,

nel pubblicare e diffondere il bando dei Corsi di Fisica che si ter
ranno a Varenna nella prossima estate, deside
ro portgere a Lei, che così cortesemente ha
voluto accettare l'invito di tenere un ciclo
di lezioni, il più vivo ringraziamento mio e
del Consiglio di Società.

Sono lieto di poterla incontrare a Varenna e intanto le porgo i saluti più cordi<u>a</u> li,

> Il Presidente della Società (G. Polvani)

> > [ms 5/14/58]

# INTERNATIONAL SCHOOL OF PHYSICS

Under the auspices of the MINISTRY of EDUCATION and the NATIONAL RESEARCH COUNCIL

# SUMMER COURSES 1958

VILLA MONASTERO

### VARENNA SUL LAGO DI COMO

This year, 1958, thanks to contributions from the Ministry of Education, the National Research Council, the National Committee of Nuclear Research, the Ford Foundation, New York, the Massachusetts Institute of Technology, Cambridge, Mass. (U.S.A.), the Universities of Milan and Naples, and Authorities, Companies and private individuals of the Province of Como, the following Summer Courses will be held at Varenna in the Villa Monastero, the use of which has been kindly granted by the Ente Villa Monastero.

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Physics of plasma and astrophysical applications.  General theory of the plasma; Streited deviction:  2) Subjects treated					
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of the course of the Astrophysical Observatory of Arcetri (Florence)  of the course	3) Official lecturers	für Physik - Göttingen (Germany)  T. C. Cowling, Leeds University - Leeds (Great Britain)  R. Gallet, National Bureau of Standards - Washington D. C. (U.S.A.)  A. Gilardini, Laboratori Sindel - Rome (Italy)  B. Lehnert, Tekniska Hogskolan - Stockholm (Sweden)  H. C. van de Hulst, Universiteit Leiden - Leyden (Netherlands)  P. C. Thonemann, Atomic Energy Research Establishment - Harwell,	of Technology - Cambridge, Mass. (U.S.A.)  D. Gabor, Imperial College of Science and Technology - London (Great Britain)  Y. W. Lee, Massachusetts Institute of Technology - Cambridge, Mass. (U.S.A.)  B. Mandelbrot, Université de Lille - Lille (France)  W. A. Rosenblith, Massachusetts Institute of Technology - Cambridge, Mass. (U.S.A.)  N. Wiener, Massachusetts Institute of Technology - Cambridge, Mass.	poli - Naples (Italy)  F. Dyson, Institute for Advanced Study - Princeton, New Jersey (U.S.A.)  L. J. Gårding, Universitetet Lund - Lund (Sweden)  R. Haag, Princeton University - Princeton, New Jersey (U.S.A.)  W. Heisenberg, Max-Planck-Institut für Physik - Göttingen (Germany)  G. Källén, Köbenhavns Universitet - Kopenhagen (Denmark)  T. Kato, Tokyo University - Tokyo (Japan)  H. Lehmann, Universität Hamburg - Hamburg (Germany)  W. Pauli, Eidgenössische Technische Hochchule - Zurich (Switzerland)  A. S. Wightman, Princeton University - Princeton, New Jersey	<ul> <li>G. Bernardini, Centre Européen des Recherches Nucléaires - Genève (Switzerland)</li> <li>J. M. Cassels, University of Liverpool - Liverpool (Great Britain)</li> <li>M. Cini, Università di Roma - Rome (Italy)</li> <li>G. Puppi, Università di Bologna - Bologna (Italy)</li> <li>W. E. Thirring, Universität Bern -</li> </ul>
5) Director's address   Prof. Generatorio Astrofisico Ascrofisico ARCETRI (Firenze) (Italia)   Istituto di Fisica Teorica Via A. Tari, 3   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teorica Via Benedetto XV, 5   GENOVA (Italia)   Istituto di Fisica Teoric		of the Astrophysical Observatory	sor of Theoretical Physics at the	sor of Theoretical Physics at the	Prof. Bruno Touschek, at the Department of Physics of the University Rome
7) Opening of the course .  8) Closing of the course .  9) Number of students .  10) Total fee to be paid by students to the management of the school for attendance, hotel accommodation and full board  10) Total fee to be paid by students or with members  10) Total fee to be paid by students to the management of the school for attendance, hotel accommodation with other students or with members  11) Total fee to be paid by students to the management of the school for attendance, hotel accommodation with other students or with members  12) Monday, 21 st July, 9,30 a. m.  13) Monday, 21 st July, 9,30 a. m.  14) Monday, 21 st July, 9,30 a. m.  14) Monday, 21 st July, 9,30 a. m.  15) Monday, 21 st July, 9,30 a. m.  16) Monday, 21 st July, 9,30 a. m.  17) August in the afternoon.  18) Monday, 21 st July, 9,30 a. m.  19) Monday, 21 st July, 9,30 a. m.  20) Monday, 21 st July, 9,30 a. m.  21) Monday, 21 st July, 9,30 a. m.  22) Monday, 21 st July, 9,30 a. m.  23) Saturday, 9th August in the afternoon.  24) L. 25.000, if the student has single room accommodation;  24) L. 25.000, if the student shares room accommodation with other students or with members	5) Director's address	Osservatorio Astrofisico ARCETRI (Firenze)	Istituto di Fisica Teorica Via A. Tari, 3 NAPOLI	Istituto di Fisica Teorica Via Benedetto XV, 5 GENOVA	Istituto di Fisica dell'Università Piazzale delle Scienze, 5 ROMA
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8) Closing of the course . 9) Number of students . 40.  10) Total fee to be paid by students to the managered attendance, hotel accommodation and full board Saturday, 5th July in the afternoon. 40.  Saturday, 19th July in the afternoon. 40.  Saturday, 19th July in the afternoon. 40.  L. 25.000, if the student has single room accommodation; L. 20.000, if the student shares room accommodation with other students or with members accommodation with other students or with members accommodation with members	7) Opening of the course .				
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### GENERAL INFORMATION

- A) In addition to the Courses which are listed above seminars on questions related to the basic subjects of the different courses will be held by visiting scientists.
- B) The lectures, seminars, conferences and discussions will be held generally in English or French.
- C) The organization and direction of the Courses is entrusted to the Directors.
- D) Those wishing to attend a course should send not later than 28 days before the beginning of the course (i. e. resp., before May 25th, June 8th, June 22nd, July 20th) an application to the Director of the Course, furnishing the following information, which should be set out clearly and legibly: 1) Christian name and surname; 2) Date and place of birth; 3) Present address; 4) Degrees and other qualifications obtained, with name of university in each case; 5) Present professional activity; 6) List of publications in Physics (and for the 1st Course 1958 also in Astrophysics); 7) Standard of knowledge of English and French written and spoken; 8) Whether intending to stay at Varenna unaccompanied or with members of family and, in the former case, whether willing to share a room with other students. The applicant should send, together with his application, a note of reference from a University professor of Physics, or in case of the first course of 1958, from a university professor, expert in information theory, testifying the applicant's interest and preparation for the activities of the School.
- E) Each application will be considered by the President of the Italian Physical Society and by the Director of the School on the basis of the information submitted, with regard also to a fair distribution of the places available among students of various nations. The decisions on the admittance to the School will be made known to the applicants within 7 days of the expiring of the date fixed for the sending of applications (i. e. resp., June 1st, June 29th, July 27th).
- F) Students will oblige in arriving at Varenna in the afternoon of the day preceding the opening of the Course (i. e. resp., in the afternoon of June 22nd, July 6th, July 20th, August 17th) and calling at the Hotel Victoria (Piazza del Municipio di Varenna) for lodgings, and receive information and papers concerning the Course.
- G) Accomodation for the students will be provided in rooms with 1 or 2 beds either in the guest quarters of the Villa Monastero or in hotels at Varenna near the Villa. Meals will be had at the Villa itself or at a hotel in Varenna.
- H) Fees as per 10) should be paid not later than 5 days after the beginning of the course (i. e. before 28th June, 12th Juli, 26th July, 23rd August respectively) to the management of the School, at Varenna, in Italian currency. A very limited number of scholarships may be granted to students whose economic conditions might otherwise prevent them from attending the School.
- I) The School will do everything possible to find suitable accommodation in local hotels for members of families accompanying the students. It should be noted, however, that, in view of the holiday season, local possibilities are limited. Members of student's families may avail themselves of the catering arrangements being organized for the School. All expenditure involved in the hotel accommodation, board etc. for student's relatives will be payable separately. These expenses, covering full service similar to that enjoyed by the student, will be about 3500 Lire per person per day and are to be settled directly with the hotel management.
- J) For further information regarding the School, applicants should write to the Director of the Course.

Milano, 31st March 1958

THE SECRETARY OF THE SOCIETY
G. C. Dalla Noce

THE PRESIDENT OF THE SOCIETY
G. POLVANI

THE DIRECTORS OF THE SUMMER COURSES
G. RIGHINI, E. R. CAIANIELLO, A. BORSELLINO, B. TOUSCHEK

April 14, 1958 Mr. Charles F. Phillips, President Bates College. Lewiston, Maine Dear Mr. Phillips: I am very appreciative of your invitation to the Convocation at Bates to receive a citation, and of the good will in which it is meant. However, I find it necessary to protect my engagements for the future for the scientific work I can do effectively, and not to dissipate them in any sort of public appearance. These public appearances have been and are a great strain for me, and cut seriously into my energies for further work. You will appreciate the fact that in a policy of this sort it is necessary to be positive and definite, as every acceptance of an invitation makes it more difficult to refuse others of the same sort. There therefore must be some stage at which I have the courage of my convictions and refuse all further invitations. This stage has come now, and after I have cleared my docket of those invitations to which I am already to some degree committed, I shall accept no others. I hope you will understand my position. Sincerely yours. Norbert Wiener NW: AD





Professor Morbert Weenin Shyarture of Marhumatici Massachuster Institute of Technology Cambridge Massachuster

Lawton Oklahoma Professor Norbert Winin Cambridge, Massumin Dear Professor Wiener: This note is to tell you That I have somewhat belatedly read your seems antobrographical brook, I am a Markmorrew and forms in more menting and informative. Surgem. Ewing 4 4 8 2 4 5 5 1111111 Officials Officials Whitesa

Zapret, 15.11.58 Tehr geehrter Hen Professor! Laupe hate ich gesøgert, noch enmal tu schreiben, abet tie haben mir mit Ihrer tutvort so eine Freude gewacht, dar ich Thuen doch dafür danken modtet. Tie kønnen sich nicht vorstellen, vie sehr ich mir Trinsche, noch einen Vervandten zu haben son unserer gansen familie Tiener bin ich die Einsige ribrig geblieben. Tie das möglich var, das ist ein ganter Roman, und die Erlebnisse der true Frank erscheinen nur dagepen rie ein Kinderspiel. Van - sie ist gestorben und icht fin am Leben geblieben. Und so bilde ich mir lie, dad ich doch noch einen Vervanden habe, und ih deuke oft an tie und stelle nin The Familie vor und vie hie leben und damit Lie dock eine Vorstelling haben, ver Thuen aus Europa so dumme Briefe schreift, schicke ich ein Bild, da ist mein Mann, mein Hand und ich. Mein Mann hat vor längerer Zeit eine Reihe von Artikeln ister Lie geschieben, die in niner hierigen tadacit schift erskrieuen rind. Etous virde mich Schrecklich interessieren: ist is rahe, das he auch

Kriminal romane scheifen? Einwal las ich da: miter in einer Zeitroup, da var auch the Bild dabei. Rønute ich die Tricht is bersetzen? (Po viel englisch kann ich schon.) Das voire doch eine Seusa = How, ein Roman des berühmten Professors Viener. ther genup, ich verde schou seh prob sein venu he sich nicht ister meinen Brief argeree. I'm Lie es also bitte wicht Heralichest The Gertrud Matanic'

Zagreb, Dolac 8, Jugoslavija









1. Norbert Wiener

Massachusetts institute of Technology Lambridge 39, Mass.

Department of Mathematics

u. J. A.

1706

April 15, 1958

Dear Dr. Wiener:

The meeting with Wayne State student leaders has been arranged for Wednesday evening in the University Room of the Student Center at 5050 Cass Avenue. Dinner will be served at 6 p.m. to be followed by an informal discussion on "Student Responsibility".

If you can attend this meeting I will come for you and Dr. Riesman no later than 5:45 p.m. tomorrow evening. If you desire to contact me phone the Student-Faculty Council office, TE. 1-0100 Ext. 36, and leave a message.

Sincerely yours,

Donald Peteet

## INTERNATIONAL BUSINESS MACHINES CORPORATION 590 MADISON AVENUE NEW YORK 22, N.Y.

OFFICE OF
THE DIRECTOR OF RESEARCH

April 15, 1958

Professor Norbert Weiner Massachusetts Institute of Technology Cambridge 39, Massachusetts

Dear Professor Weiner:

International Business Machines Corporation has recently completed the construction of new facilities for Research, Manufacturing and Education at San Jose, California. In connection with the dedication of the Research Laboratory it has been decided to hold a conference on the topic, "Communication of Scientific Information", all day May 26, and the morning of May 27. Attached is a program of this seminar. The seminar will include invited papers covering the categories of the definition of the communications problem, present state of the art for the development of suitable devices, and topics of general information theory.

I am very pleased to extend to you an invitation to attend this seminar. We are making provision for our guests to lodge at Ricky's Motel the evenings of May 25 and 26. At the conclusion of the seminar at noon May 27, you are also invited to attend the dedication ceremonies of our new facilities, if you so choose.

In order that we may adequately plan for your comfort, will you please advise us if it will be possible for you to attend, at approximately what time you will arrive at Ricky's, and whether you care to stay for the plant dedication which follows this scientific seminar.

Sincerely,

E. R. Piore

ERPione.

ERP:cs Attachment

# CONFERENCE ON COMMUNICATION OF SCIENTIFIC INFORMATION TENTATIVE PROGRAM

	Speakers	Subjects
Monday a.m.	J. B. Wiesner	Communication of Scientific Information in a University Environment
	E. de Grolier	Problems in Scientific Communication
	I. J. Good	How Much Science Can You Have at Your Finger Tips?
Monday p.m.	C.E. Shannon	Communication Channels Serving Multiple Inputs and Outputs
	E.E. David	Recognition by Machines of Human Speech
	M.M. Astrahan	The Role of Large Memories in Scientific Communication
	H.P. Luhn	A Business Intelligence System
Tuesday a.m.	A. Newell	Chess as a Problem of Communication of Instruction
	N. Rochester	Communication with Theorem Proving Machines
	P. Elias	Computation in the Presence of Noise

HARVARD MEDICAL SCHOOL
DEPARTMENT OF PSYCHIATRY

PHILIP SOLOMON, M. D.
Asst. Clinical Professor of Psychiatry
Physician-in-Chief

BOSTON CITY HOSPITAL

Please reply to
57 Chatham Street

Brookline 46, Mass.

Telephone BE 2-3435

April 15, 1958.

Prof. Norbert Wiener, Massachsetts Institute of Technology, Cambridge 39, Mass.

Dear Prof. Wiener,

Psychiatry Service

Plans for the Symposium on Sensory Deprivation in Boston, June 20 and 21 continue to take shape in agreeable fashion. No major changes from the Revised Provisional Program which was sent to you in January are contemplated. You will receive the final program early in June.

In order to orient you regarding the 9 formal papers which will be presented, descriptive abstracts have been prepared by the authors and copies are enclosed herewith. It should be noted that the authors are at liberty to make changes at will before the Symposium takes place.

We look forward to having you and Mrs. Wiener at the Dinner and Pops Concert and hope you will be able to attend the Reception Thursday evening as well.

Very truly yours,

Philip Solomon, M. D

Symposium Planning Committee

Philip Kubzansky, Ph. D.

P. Herbert Leiderman, M.D.

Jack Mendelson, M.D.

Donald Wexler, M.D.
Philip Solomon, M.D., Chairman.

PS/11 Encl.

[ and 4/28/58]

#### Cognitive and Physiological Effects of Perceptual Isolation

by

#### W. Heron, McGill University

The experiments were carried out on sixty male subjects, all of whom had at least two years of college education. The subjects were kept lying down in a lighted, semi-soundproof cubicle. They wore diffuse goggles which prevented pattern vision and cardboard cuffs over their hands and forearms which limited tactual perception to some extent. Auditory perception was limited somewhat by the masking noise of an air conditioning system. The experimental situation has been described in more detail elsewhere (Bexton, Heron and Scott, Canad. J. Psychol., 1954, 8, 70-76).

Under these experimental conditions, the following effects were observed:

- (a) There seemed to be some decline in intellectual functioning. The subject's performance was poorer on certain tests given while the subject was in isolation and on other tests given immediately after he had emerged from the cubicle.
- (b) There was some visual dysfunction after isolation. After an initial period, in which the environment appeared to be in constant motion, there was a period in which the region around the fixation point seemed to be moving. In addition, straight lines appeared curved, and there were disturbances in the apparent front parallel plane. Tests of size constancy showed that the experimental subjects were abnormal in this respect.

In addition, during isolation almost all subjects reported vivid hallucinatory activity.

(c) EEG records showed that there was some slowing of the waves in the alpha band during the isolation period, and a tendency for delta waves to appear. These effects persisted for at least 3 hours after isolation.

An attempt is made to discuss the neurological basis of the effects.

#### Individual Differences in Reaction to Experimental Interference

#### with Reality Contact

by

Leo Goldberger and Robert R. Holt New York University, Research Center for Mental Health

According to the psychoanalytic theory of primary and secondary processes, logical, reality-oriented cognition (i.e., secondary process) is genetically dependent upon perceptual contact with the structure of reality ("reality contact"). Following the formulation of Gill and Rapaport the theoretical questions may be asked: To what extent does the adult develop a secondary autonomy from the environment? If a person's perceptual channels are interfered with, does a regression to the primary process occur? If so, how soon, to what extent and in what type of ego structure?

Our Ss were 14 male college students who took part in a program of research involving extensive personality assessment. A few weeks prior to isolation each subject was given a Rorschach test (scored for presence of primary process and its handling) and several tests of secondary process functions (e.g., logical reasoning, memory, attention span, and other intelligence tests ), the latter battery being readministered, with an alternate form, at the termination of isolation. Each subject was removed from normal reality contact by procedures similar to those used in the McGill experiments, except that our subjects had halved ping-pong balls glued over their eyes (making their field of vision homogeneous) and had constant white noise fed into their ears. Subjects were instructed to lie as motionless as possible and to describe their thoughts and feelings any time they wished. They were told that the experiment would last all day (8 hours), and that they could terminate it on request. The protocols of each subject's isolation behavior. verbalization and post-isolation interview were rated by two independent judges on a number of dependent variables (e.g., pleasant affect, unpleasant affect, primary process thinking, preoccupation with the idea of quitting, impaired secondary process thinking). Each of these variables was correlated with various personality measures.

Among the findings to be presented, the following may be singled out:

(1) The relatively short period of 8 hours was effective in producing most of the phenomena reported in the isolation literature; (2) Interferences with normal reality contact was on the whole perceived as stressful;

(3) Subjects were not consistently impaired on intelligence test functions—they might show impairment in one and improvement in another, depending upon the particular function involved and the complexity of the particular task;

(4) Significant correlations were found between a Rorschach index of mature handling of primary process and several isolation effects.

#### Theoretical considerations

by

#### Lawrence S. Kubie, M.D.

- (1) My working hypothesis is that in human psychology conscious symbolic processes constitute a relatively slow and weighted sample of the swift, continuous stream of preconscious processing which is the core of all human mentation, and that unconscious symbolic processes are pathological deviants from the conscious sampling. This places preconscious functions at the heart of all afferent, integrative and efferent activity: and the first and most basic question to ask about sensory deprivation is what its effect is upon this central stream of preconscious activity.
- (2) The repression of the central symbolic representation of perceptual processes is often confused with sensory deprivation. Therefore, in considering the conceptual and experimental approach to this problem, it will be important to be clear at all times about the difference between on the one hand the cut-off of afferent inflow (especially to the stream of preconscious processing) and on the other the repression of its partial symbolic sampling in conscious and unconscious processes.
- (3) Essential ingredients in human psychology are the mental recording of daily experience, its enduring storage, its accessibility to recall, its integration with appropriate autonomic and emotional reverberations, and its reproduction in memory and fantasy to guide us in the avoidance of future difficulties and in the anticipation and pursuit of future goals. Together these represent an algebraic summation of the concurrent influence of conscious, preconscious and unconscious processes. Therefore, for the exploration of the dynamics of normal and pathological functions it is essential to develop methods which can determine their respective roles with some degree of precision.
- (4) For the purpose of this symposium the influence of sensory deprivation on conscious, preconscious and unconscious processes, and on their interplay will be considered as this is manifested normally in all processes of attention, in learning, in states of hypnagogic reverie and in the approach to sleep. The influence of sensory deprivation will also be considered in relation to the induction of the hypnotic state, in analytic sessions, and in various other experimental and clinical maneuvers.

The Effect of Human Isolation Upon Some Perceptual and Motor Skills

by

Jack A. Vernon, Ph.D., Thomas E. McGill, M.A., Walter L. Gulick, Ph.D. and Douglas K. Candland, B.A. Princeton, University.

The present paper defines the conditions of sensory deprivation, the nature and procedure of tests, and the effects of sensory deprivation upon: 1. rotary pursuit ability, 2. color perception, 3. motor coordination, 4. mirror tracing, 5. depth perception, 6. body weight, 7. strength of grip, 8. galvanic skin resistance, and 9. delayed auditory feed-back. Sensory deprivation was seen to have a significant influence upon all of these tests except depth perception, strength of grip, and delayed auditory feed-back.

#### Physiological Aspects of Sensory Deprivation

Mendelson, J., Leiderman, P.H., Kubzansky, P., Wexler, D. and Solomon, P. Boston, Mass.

Study of the physiological responses to sensory
deprivation may help to clarify some of the behavioral phenomena
observed. This paper will report an investigation into several
physiological measures for subjects in a tank-type respirator.
Included will be: sleep-wakefulness patterns as monitored by
EEG recordings, cardiac rate, and catechol amine excretion.
These will be related to overt behavioral measures as well as
to selected psychological variables for both group and individual
data.

## Are there common factors in sensory deprivation, sensory distortion and sensory overload?

by
Donald B. Lindsley
Univ. of California at Los Angeles

Marked subjective states and behavioral disturbances are frequently associated with pervasive conditions of sensory deprivation, sensory distortion, as in the case of delayed auditory feedback, and sensory overload, developing in the presence of intense multi-sensory experiences. Because of its role in the sleep to waking process, and apparently also in attentive and perceptual functions, as well as in drive-motivational states, the reticular activating system would seem to be the kind of structure adapted for these varied functional roles. Recent surveys of the anatomy and physiology of the reticular formation, together with its connections with other parts of the brain, suggest possible ways in which the subjective and behavioral phenomena might be explained in terms of the ascending reticular activating system (ARAS).

Because of its strategic location at the cross-roads for most incoming and outgoing messages, and its apparent ability to sample all such activity and develop from it a more lasting influence, in the form of alerting and attention, the reticular system appears to provide a common mechanism for the above sensory conditions and their effects. Recent information suggests that the reticular formation is more differentiated and diversified in its functions than originally supposed. Differential response to different sense modes has been demonstrated. Interaction of two or more sense modes in the reticular formation, may lead to facilitation or inhibition. Without the ARAS, classical sensory pathways can conduct their messages to primary receiving areas, but discrimination or perception does not ensue.

The reticular activating system, together with the diffuse thalamo-cortical projection system, provides a mechanism capable of general arousal and alerting, and also a specific attentional mechanism. Linked with this system is a cortico-fugal system permitting interaction between cortex and the reticular system.

There is also a mechanism of centrifugal control which permits monitoring and

regulation of all sensory inputs. If one conceives of the reticular formation as a kind of barometer for both input and output level, a structure serving a sort of homeostatic function of adjusting input-output relations, then it is a short step to the assumption that it has an adaptation level. Psychologically this should be reflected in a suitably high or low level of attention or anticipatory set. However, with exceptional conditions of sensory deprivation, literally a void would be created with vigorous striving for the necessary stimulation which keeps the ARAS, and in turn the cortex, going on an activated basis so that one's past or present may be reviewed. Without such stimulation boredom and inactivity eventually prevail and ultimately sleep. With an excess of stimulation from two or more sense modalities, especially a sudden and intense barrage, from afferent and corticifugal sources as in startle or fear, blocking of the reticular formation may occur and behavioral immobilization and general confusion often results. Finally, in the case of delayed auditory side-tone, or other sensory distortion in time, the auditory feedback is mis-matched temporally with the traditional and habitual time-delays of the proprioceptive and tactile systems.

The consequence is that the motor system cannot perform adequately on a dual-time schedule, and there is a resulting conflict which shows up in the form of stuttering, markedly slowed down speech pattern, and secondary tension and striving which shows up in more intense speech.

In each of these conditions, sensory deprivation, sensory overload and sensory distortion, there is a circumstance which upsets the balance of the regulating system, namely ARAS. When this happens persistently, perception is disrupted, attention gives way to distractibility and interest to boredom, behavioral performance is either held in abeyance or becomes highly stereotyped, and non-adaptive.

The various concepts of neurophysiologic nature will be elaborated in an attempt to find a suitable common mechanism capable of explaining the facts of subjective and behavioral consequence to the three conditions described above.

#### The Cognitive Consequences of Early Sensory Deprivation.

by

Prof. Jerome S. Bruner, Harvard University.

The effects of early sensory deprivation may be viewed as an interruption in the normal construction of cognitive and neural models that serve to represent the structure of the environment for an organism. The irreversible effects may in some cases be accounted for by the development of learning and problem solving strategies based on inappropriately simple conceptual models. These inappropriate strategies may have the effect of preventing subsequent adequate learning.

#### Sensory Deprivation in Aviation

by

#### A.M.H. Bennett, M.B.

Lack of change in the physical surroundings of a man has been shown to produce a mental state which will render him unfit to make rapid decisions requiring concentration and precise judgment.

It was thought likely that conditions of flight in modern aircraft could produce a similar state of mind which might interfere with the aviators' control of his machine. Such conditions are solitude and inactivity in flight at high altitudes.

The effect of these conditions on a pilot will be discussed, and the types of reaction illustrated by reference to case histories.

### OBSERVATIONS ON ANACLITIC THERAPY DURING SENSORY DEPRIVATION

by

H. Azima, M.D., R. Vispo, M.D. and Fern J. Azima, M.A.

Previous observations by the authors had demonstrated the disorganizing and regressing effect of sensory deprivation on a variety of psychopathological states. From this observation it was inferred that the induction of regression was due, in part, to the resemblance of isolation setting to an anaclitic situation, and it was thought that by systematizing this situation a deeper regression and a less erratic disorganization may be initiated.

The therapeutic rationale of this procedure was based upon theoretical considerations, consisting partly of the following propositions: (1) that a partial regression to certain fixation points is a feature of all psychopathological states; (2) that by fostering the regression beyond these fixation points and by gratifying the primary frustrated needs progression may ensue.

Due to the nature of the procedure few patients till now have been put on anaclitic isolation. The patient is seen in daily interviews prior to isolation, with the main objective of producing a positive transference relationship. Subsequently the patient is put on isolation in a dark, quiet room, with hands and eyes covered, and on demand feeding and demand evacuation. Patient is seen by the therapist 3 times a day in 1 to 2-hour sessions, during which the therapist feeds the patient and encourages free association, fantasizing and dreaming. Psychoanalytic interpretations are given only to overcome negative transference fantasies. The procedure is terminated at the patient's will.

The detailed report of a borderline case will be presented, who showed marked regression to the oral level within 4 days of anaclitic isolation, and accepted willingly at the end a baby bottle filled with milk. This patient developed a depressive episode following isolation, the anaclitic nature of which will be discussed.

From McGill University, Department of Psychiatry and Allan Memorial Institute, Montreal.

April 15, 1958 Mr. J. H. Curtiss American Mathematical Society 190 Hope Street Providence 6, Rhode Island Dear Mr. Curtiss: Thank you for your letter of April 7th. As to the reprinting of Colloquium No. 19, I completely approve and am complimented by the request. I shall look over the minor corrections together with my colleagues who have a better eye for these things than I do and shall let you know in the not too distant future. Sincerely yours, Norbert Wiener NW: AD

April 15, 1958 Dr. A. Jayaraman, Editor Current Science Association Raman Research Institute Bangalore 6, India Dear Dr. Jayaraman: I wish you all success with the new periodical but I am a little hesitant about writing the article you request on cybernetics. The fact is that I have said my say on the subject, and the pressure to write articles has made me repeat myself to an extent that I am rather ashamed. Let me make the counter-suggestion that I send you a note of about the same length on the present status of integration in function space with its applications to quantum theory, to electrical engineering and to abstract mathematics. Let me know if this suggestion meets your approval. If so I shall follow it up with an article. Sincerely yours, Norbert Wiener NW: AD Tans 4/21/58]

April 15, 1958 Dr. Charles Van Buskirk, University Hospital, Baltimore 1, Maryland Dear Dr. Van Buskirk: Thank you for your letter of April 11th with details concerning my trip to Baltimore. I would appreciate it very much if you would be good enough to reserve a single room with bath for me on Friday night, and, since Mrs. Wiener will join me on Saturday, a double room with bath for Saturday night. I understand this will be at the Lord Baltimore Hotel, and the reservations will be for Max 2nd and 7nd reservations will be for May 2nd and 3rd respectively. I am not planning to use slides or movies for the lecture. Sincerely yours, Norbert Wiener NW: AD

April 16, 1958

Dr. G. R. Verma Department of Methematics Birla College, Pilani Rajasthan, India

Dear Sir:

Professor Wiener has received your letter of April 4th and wishes me to tell you that he has requested the Admissions Office of this University to send you and catalog and material regarding post doctorate scholarships.

It will be necessary for you to contact them for any teaching you may have in mind.

Very truly yours,

Secretary to Professor Norbert Wiener

384 Umehara
Wakayama City
Japan
April 17, 1958

Doctor Norbert Wiener Professor of Mathematics Massachusetts Institute of Technology Massachusetts

Dear Dr. Wiener:

Please pardon me to take the liberty of wthough I have no acquaintance with you.

One of your excellent works <u>Cybernetic</u> absorbing interest since I listened in your N H K in Japan on April 11, 1956.

We are now blessed to have the Japanese fine publication <u>Cybernetics</u>, and recently you volume <u>The Human Use of Human Beings</u> has captured my mind of scientific enquiry.

I am an assistant professor of linguistics in the University of Wakayama, majoring in communication theories.

I esteem it a great honor to say that the Japanese learned society is now very eager to learn your methodology specialized in your splendid book The Human Use of Human Beings.

So, may I ask you for your permission to let me translate your fine work into Japanese language?

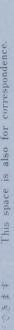
The circle of linguistic study in this country will be much obliged if you could allow me to have a Japanese edition of your excellent work.

Very truly yours,

Kenji Kissi

KK:my

[ans 4/25/58]



ここにも通信文を記載することができます

Kenji Kissi 384 Umehara Wakayama City Japan

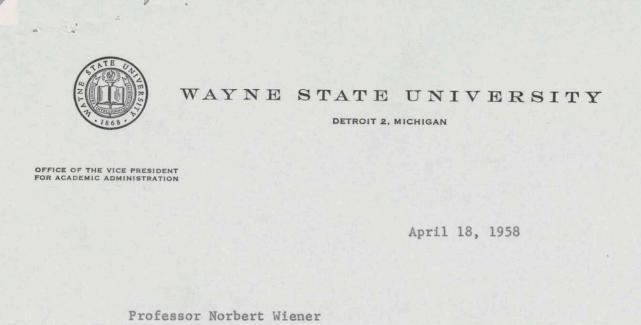
> Doctor Norbert Wiener Professor of Mathematics Massachusetts Institute of To Massachusetts U. S. A.

THE HADA

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この郵便物には何物も封入又は添附できません

Nothing may be contained in or attached to this letter.



Massachusetts Institute of Technology Cambridge 39, Massachusetts

Dear Professor Wiener:

Let me try to convey in writing what I hope was said to you many times in the past two days--that you made a significant impact on this campus. When I consider the time and energy and real enthusiasm that you gave to the Symposium I can only trust that we did not impose on your generosity. But as I continue to hear from students and faculty about the exhilaration, the ideas, the new clarity that you brought to the whole life of education, I am sure that it was worthwhile. Believe me, we are grateful to you.

I am enclosing a check for \$500 for your honorarium. As soon as you can send a statement of your other expenses you will be reimbursed for them. I will also send you copies of the various stories that have appeared about the Symposium in a few days. And if there is any follow-up work here that I can do for you, please let me know.

Meanwhile, my many thanks.

Sincerely,

James P. McCormick Assistant to the Vice President

Academic Administration

JPM: jg Enc.

# COPY

April 18, 1958

Editor
Time Inc.
Time and Life Building
9 Rockefeller Plaza
New York 20, New York

Sir:

Your article, "The Atom," TIME, April 21, 1958, is an abuse of editorial license. The position, obviously shared by TIME, is that people who advocate peace and an inhabitable earth are "fruitcakes," "motley," and "Communist." People should argue openly for peace; that it is part of current Communist propaganda does not make the idea wrong. It is a shame that mudslinging and McCarthyism has been chosen by you as a way of shouting down sincere men with serious ideas which ought to be debated cleanly.

Signed:

Mary Haves Education and Enterprise

Alterature on such subjects as how to budget your money, how to compensate for not growing tall, what to do about a dominating father, and discussion of choice in form of government.

The most basic difficulty in science majors which can be a crippling one lies in the medthods of teachingt in the five, six and seven year old group, or kindergarten, first and second grade. This difficulty must be corrected before we can get the caliber student that we need at high school and college level.

The public elementary schools teach children through a method best described as <u>learning through growth</u>. This method is based upon the idea that the mind and the body are one thing. Competition is banned and is considered a base urge to be subdued by learning and socialization. To this is added the current experimental method.

In mathematics it furnishes devices, such as beads, so that children can feel numbers, It furnishes pictures of birds, cats, and vegetables so that they can see them. They are asked to recognize numbers by the number of dots and lines.

Education and Enterprise page 10

they are asked to take seven apart and put it back together manually. Children are asked to make several associations with numbers before they memorize them, and are supposed to discover number relationships.

Children are asked to reason before material is presented with which to reason and at an age when the reasoning processes are not developed fully enough to support reasoning.

Everything must be meaningful as a sensory experience. The premise of the school is that children are taught to think and that thinking as such is transferrable for use to other material. The psychologist has proven that thinking in one subject does not help with thinking in another subject unless the material is closely related or the method is very similiar. The methods used in learning as described above appear to me to apply more to learning in behavior than they do to learning the mathematical process.

/ See Norbert Wiener The Human Use of Human beings, Houghton Mifflin Company, Boston, 1950: Scanning and feedback on p 69. and the Pavlovian reflex on 79-81.

Mary Hayes Education and Enterprise page 11

An effort is made to teach the multiplication tables to the fifth table. However, the teaching method does not allow them to be taught in ordered form. The sequence of numbers is lost, so necessary in original mathematical computation.

No one has as yet understood the magic of the mind. It works like an abacus in logarithmic process, filing relating, sorting, and bringing forth the answer needed by its own power. Mental images do not carry sensory conotation in their original impression. Sensory material requires relating to imagery if it is to be held in the mind and then it wears an emotional tinge.

Mathematics is a reasonable and rational science, and must be learned as such. I believe that the simple mathematical constants should be learned by rote before the reasoning processes establish themselves, because the mind relates of its own volition.l

See Norbet Weiner The Human Use of Human Beings. Houghton Miflin Company, Boston, 1950 page 73-74. Discussion of the digital machine

Where children are able to learn, I believe that the addition of single digit numbers in all combinations and the multiplication tables should be taught by rote learning w without writing to the point of reflex response before the age of seven, and earlier if possible. All sensory material should be dispensed with as it relates to mathematics. Reasoning should not be admitted until constant values and sequences are established.

Relating of wrongly learned mathematical material by t mind to reflex response can, I believe, permanently damage the learning process through ramification.

Normal competition cannot be considered some kind of appendage to the personality to be bandied about. It is a necessary part of the personality and it should be treated as such.

Competition is usually made up of two parts, love and aggression, which join forces in social form giving impetus to the individual to achieve greater things for himself, his family, and his community. In its most highly sublimated form it has given us those great saints of science and art and literature who have enriched the lives of all of us through their gifts to mankind.

Consider the position of our superior and very superior

#### BATES COLLEGE

Lewiston, Maine

OFFICE OF THE PRESIDENT

April 19, 1958

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

Dear Dr. Wiener:

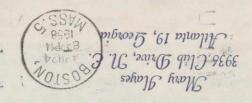
We are sorry that you cannot be with us June 6, for we were looking forward with great pleasure to having you on the Bates campus.

Sincerely yours,

Charles F. Phillips

President

BUIL® YOUR FU WISELY, SAFI U.S. SAVINGS







Mr. Norbert Wiener Houghton Mifflin Company Boston, Mass

Please forward

53 Cedar Road Belmont mass.

# CURRENT SCIENCE ASSOCIATION Raman Research Institute Bangalore-6

April 21, 1958

Dear Professor Wiener,

I am very thankful to you for your letter of the 15th instant and I am agreeable to your suggestion namely, that you contribute an article on "The present status of the integration in function space, with its applications to quantum theory, to electrical and engineering and to abstract mathematics".

I am very grateful to you for your kind acceptance of our invitation and I am certain the readers of CURRENT SCIENCE would immensely benefit by it and would welcome it with much enthusiasm.

The material may kindly be sent to me at your earliest convenience.

With deep regards,

Yours sincerely,

A. Tayaraman

EDITOR

BY AIR MAIL

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AEROGRAMME

NO ENGLOSURES





Professor Norbert Wiener

Department of Mathematics

Massachusetts Institute of

Technology

CAMBRIDGE 39, MASS

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Sender's name and address:—
The Editor
Current Accembe Assn
Bangalore-6

Ference Second

01

Professor Norbert Wiener Massachusetts Institute of Technology Cambridge, Massachusetts

My dear Prof. Wiener:

With 'little Latin and less Greek', an amatuerish verve for science and a somewhat frustrated ambition to be a linguist, I have been working in my leisure since college on a project I believe may in some degree interest you-having read several of your writings. I call it a project, but it is better called a dream; for what I have accomplished is infinitesimal as compared with what remains to be done.

In a word (or two) the project concerns what is classically called 'a philosophical language'. I am aware of the hundreds of wrecks that strew the beaches of history, and that many have concluded that the job was done, if anything is to be done, with the coming of Esperanto.

The job that I conceive has not been done, but needs to be done, and I think can be done. Esperanto-type schemes have endeavored to replace or supplement existing languages in all phases of life--seeking a limited vocabulary for easy mastery, universal or wide-spread familiarity of root-material and a fluent syntax. The job that remains is to go more deeply into meaning, for in their eagerness to get their scheme of the growing they have transplanted most of the seeds of misunderstanding that exist in the natural languages. As I believe you have made perfectly clear, we cannot hope for perfection with regard to communication.

However, it has struck me that sufficient work and thought could concoct a language—at least for use between experts in the various areas of science and learning—which would put into force some of the findings of symbolic logic, which would come closer to the ideal of mathematics and which, yet, would yet retain somewhat of the readability and speakability of a natural language.

Having only a faint imagining of the problems involved, I somehow conceive that such a 'language' might contribute to the development of the proposed 'translation-machine' which some of

your colleagues are at work on. An inter-language, at once looser and stricter than, say English and Russian, or whatever languages are being translated, might prove a key to simplification of the problems.

My forebears are Dr. Hogben and his scheme called <u>Interglossa</u>, Roget and to some degree Korzybski. But for the purposes I have outlined, I believe I have made important progress beyond them.

Briefly, the chief new principles are these:

(1) abandonment of traditional grammatical forms or categories

(2) indication of the function (meaningcategory) by the gesalt of the word

(a) qualities, and relations

(b) actions (c) shapes

(d) things (picturable)

Action words fall into two groups: very loose and very specific. The 'loose group' are few in number:

orte--communicate in any form este--sense (see, feel, perceive heat, et.) ogne--know, think, etc.

arme-give etc.

The specific group would be virtually infinite in number: their gesalt would would be consonant-diphthongs embracing the vowel: trope (to turn on a fixed spot); verge (to turn in a direction as on a curve), etc.

Quality words would consist of single consonants embracing a vowel--such that they might be reversed to indicate logical opposition: valo (valuable, value); lavo (worthless); kazo (cause); zako (effect)

Dimensional relationship would have an open syllable: an (at a point); ef (off a line); or (above a surface); in (in a solid); ut (during a period of time); etc.

This brief and crude outline will indicate that many a posteriori elements may be included in such a scheme.

But I am going to cut off here. My concern is to find out if there is anyone anywhere thinking and working along the same lines. I am writing to you, thinking you might be in a better position to have such information, and might put me in touch with him. With continuing admiration for your work, I would remain

Robert N. Yetter
Robert N. Yetter

100 Jackson Avenue Susquehanna, Penna.

April 21, 1958 Mr. E. R. Piore International Business Machines Corporation 590 Madison Avenue New York 22, New York Dear Mr. Piore: I have your letter of April 15th and thank you for the invitation to attend the seminar on May 26 and 27. While this interests me very much, I am afraid I must decline as my present commitments are such that my time is entirely taken up. Thank you again for having invited me, and I wish you every success with the dedication of the Research Laboratory. Sincerely yours, Norbert Wiener NW: AD

### UNIVERSITAS ZEITSCHRIFT FÜR WISSENSCHAFT

BEGRÜNDET VON DR. SERGE MAIWALD / WISSENSCHAFTLICHE VERLAGSGESELLSCHAFT M.B.H. STUTTGART

Herausgeber: Dr. H. Walter Bähr

> Herrn Professor Dr. Norbert Wiener

Institute of Technology
C am b r i d g e , Mass.

(14a) Stuttgart
Birkenwaldstraße 44 22. April 1958
Postfach 40, Fernsprech-Sammelnummer 92559
Dr. B. / ra.

Jelo

Sehr geehrter Herr Professor!

Die Sendeleitung des Berliner Rundfunks übermittelte mir den Wortlaut Ihres Vortrages "Semantik und Kybernetik", der am 20. Februar 1958 zur Sendung kam. Wir drucken in unserer Hochschulzeitschrift "Universitas" häufiger Rundfunkvorträge von Hochschullehrern und wissenschaftlichen Autoren.

Ich darf heute an Sie die Anfrage richten, ob Sie mit einem Abdruck Ihres Vortrages in der "Universitas" einverstanden wären. Sie würden von uns nach dem Erscheinen des Beitrages neben dem Honorar auch 50 sonderdrucke erhalten. Wir würden es dankbar begrüssen, diesen konzentrierten Auszug aus Ihren wichtigen Forschungen unseren deutschen Lesern an den Hochschulen zugänglich machen zu können. Das Einverständnis des Senders Rias Berlin zum Abdruck Ihres Vortrages liegt vor, so dass hierzu keine weiteren Rückfragen mehr erforderlich wären.

Mit den besten Empfehlungen

4. Lin

(Dr. Bähr) Herausgeber der "Universitas" Sent t Prof. Rosenblich not shocked.

#### Suggested Program for Research in Electroencephalography

- with an analysis over a sufficiently long time base to bring out the central frequency and the diphthenomenon in which the central frequency is separated from the general alpha band surrounding it. This will mean, if possible, original frequency modulation electroencephalograph records covering a duration of at least five minutes, and preferably considerably more. For the present, our goal in taking autocorrelations should give us delays running up by perhaps a 50th of a second interval to as much as 50 seconds. These should be taken not only for subjects showing a strong alpha rhythm but for subjects showing weak alpha rhythms in order that we may find masked alpha rhythms if they exist or that we may be reasonably sure that masked alpha rhythms are absent. Even in normal cases it would be highly desirable if we can know something of the medical, psychological and psychiatric history of the individuals in question.
- 2. We need to supplement these normal records by a carefully selected set of records in which there is some gross physiological abnormality or abnormality of behavior. In these records it is particularly necessary to keep good medical and psychological records. The data furnished by Dr. Chafetz concerning alcoholics gives us a good opportunity to start this sort of work.
- We need a similar analysis of records made under influence of various drugs or physiological changes. Here I suggest particularly the use of adrenalin, thyroxin and other hormonal agents, as well as the study of patients who have undergone surgery on their endocrine glands. If possible I should like records before and after surgery. I also suggest the study of tranquilizers such as serposil and its analogues of stimulants like benzedrine and the drugs like lycursic acid and mescalime which have, or are supposed to have, a considerable influence on the subjective time sense. Here, too, I should like a study of the effects of fatigue, and if possible of fever or depressed temperatures.
- 4. It is necessary to correlate our work with that of Hudson Hoagland on the subjective time sense. This means that we should have records both of the objective spectrum of the alpha rhythm and of the subjective time sense from the same individuals if possible at times when either the electroencephalogram or the subjective time sense are known to vary.
- b. We should have fairly complete runs of children of differing ages where if possible we trace the history of electroencephalograph frequencies not only in the statistical mass of data from varying individuals but in the history of each individual. This is most essential, as I believe the evidence is very good that chronological is not an adequate index of physiological or psychological age, so that without research of this character we may be building artificial statistical assemblages of data that are not precisely comparable.

- 6. Notwithstanding the intrinsic difficulties of the research, we should attempt to go into animal data in a more satisfactory way than has been possible for us to do as yet. Here we must make an effort to see what can be done with physiological methods of reducing the animal to a state of calm, and in particular with methods which involve a minimum of disturbance of the state of the individual by drugs and the like. Once we have made substantial progress in this direction it is quite possible that much more specific researches will open up, particularly with respect to the assay of drugs.
- 7. In all the work that will be done on the questions discussed, we wish to take both autocorrelation records and cross correlation records after delays of one or more hours.
- 8. In all the work we have already mentioned, whether with human beings or animals, if the opportunity offers itself for the use of implanted electrodes we should take advantage of this. Whether by using implanted electrodes or electrodes of the scalp, we should join up with the type of research carried on by Grey Walter and examine the autocorrelation and cross correlation rhythm of different parts of the brain.
- 9. We should, if possible, obtain records under various sorts of epileptic epileptiform conditions so as to ascertain the frequency and stability of rhythms not ordinarily found in the normal brain.
- 10. We should continue our researches for the effect on the brain rhythms of different sorts of flicker, visual, orbitory and electric, and should make as accurate a study as possible of the tendency of these flickers to modify the brain rhythms, and in particular to pull them into phase. Here we should make a detailed study of the after-discharge phenomena already investigated by Dr. Barlow.
- ll. We should if possible study other physiological rhythms by autocorrelation methods. Here I refer particularly to a long time study of electrocardiograms. Mathematically the work of Van der Pol has given us an excellent model of the pacemaker of the heart. However, his model without any further modification leads to a purely periodic phenomenon, so that it needs supplementation to give us a basis for the study of cardiac irregularities over a long time. We should also study electromyograms both for striated and for smooth muscle. I have been told that electrohysterograms, or studies of the electric potentials of the womb may yield interesting results.
- 12. As to some of the other physiological rhythms which are worth studying, we have those of the flashing of fireflies, the croaking of frogs or the song of the katy-dids and the like. On quite a different scale we have the study of the lashing of flagella or cilia. At the opposite end of the frequency spectrum we should make studies concerning diurnal and even yearly physiological rhythms.
- 13. Parallel with the various sorts of work which we have already mentioned we should develop the mathematical theory of rhythms in random processes. This is a field in which I have already made a beginning.

April 23, 1958 Mr. J. Lemaire Association Internationale de Cybernetique 13 que Basse Marcelle Namur Belgium Dear Mr. Lemaire: In compliance with your request of March 1st, foreign money order No. 1-564,761 amounting to 4.25 was sent to you on April 14, 1958 in payment of membership fee to the Second International Congress for Cybernetics. Sincerely yours, Norbert Wiener NW: AD

The London Mathematical Society Burlington House Piccadilly London, W.I. England

#### Attention of the Treasurer

Dear Sir:

In accordance with your request of March 6, 1958, foreign money order No. 1-565,762 amounting to \$6.00 was sent to you on April 14, 1958 in payment of my subscription to the Society.

Very truly yours,

Norbert Wiener

NW: AD

April 23, 1958 Mr. James P. McCormick Assistant to the Vice President Wayne State University Detroit 2, Michigan Dear Mr. McCormick: I have your very nice letter of April 18th and the enclosure of a check for Five Hundred Dollars, for which I thank you. It was indeed a great pleasure to speak at Wayne, and the friendliness extended to me will not soon be forgotten. An engagement of this sort is very rewarding, especially when it is so well received. I am enclosing the stub of my ticket, from which you will see that the fare was 280.40, tax excluded. In addition to this there was the expense of taxis from Belmont to the Airport and return amounting to \$ 9.00. Although meals were provided on the plane, since I am strictly a vegetarian it was necessary for me to purchase meals suited to my diet amounting to 5.00, making the total of additional expenses 14.00, or a grand total for all expenses of 2 94.40. Also enclosed is the receipt for the \$500.00. It was requested that this be returned in duplicate, but I received only one copy. Again my thanks for your kindness and cooperation in making my trip a pleasant one. Sincerely yours, Norbert Wiener NW: AD Enos.

NEW YORK UNIVERSITY INSTITUTE OF MATHEMATICAL SCIENCES 25 WAVERLY PLACE, NEW YORK 3, N.Y. TELEPHONE: OREGON 4-0734 April 24. 1958 Professor Norbert Wiener Mass. Institute of Technology Cambridge 39, Mass. Dear Professor Wiener: The plans for our conference on Shelter Island are gradually taking shape. As I had written to you, the main idea of the conference is to give mathematicians, who in some way or other are informed on mathematical questions of the quantum theory of fields, the opportunity to hear from leading physicists about the mathematical problems of this theory. Accordingly, we have scheduled talks by Wightman, an introduction to the problems of quantum theory of fields, and axiomatization of the notion of local fields, for Tuesday afternoon; by van Hove on renormalization theory on Wednesday morning; by Dyson on solvable problems in the theory of local fields in the afternoon, and one more talk perhaps by Haag. On Thursday morning we would like to hear a report by a mathematician on questions closely connected with the quantum theory of fields. Mackey will talk and, we hope, Stone on Segal's theory. On Thursday afternoon the organizing committee would be happy to have you talk to us. Naturally, we would like if you talked to us about questions involving the integration of functionals since this subject is of considerable significance in the quantum theory of fields and physicists, I am sure, would like to hear about this, even it the connection with the quantum field theory is as yet not explicitly visible. Would you be so kind as to give us the title of your talk. For the later afternoon we have scheduled a talk about the Feynman integral. Friday morning is reserved for unscheduled communications. We are looking forward to meeting you at the conference and hope that you will also find it worth while. Sincerely yours, K. O. Wedridy KOF:la K. O. Friedrichs [ ms 4/28/58] Toyokawa, 24 April 1958.

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

Dear Professor Wiener,

It is a long time since I saw you last at the meeting of your lecture and round table talk on Cybernetics held in Nagoya on 20 April 1956.

Last year when XIIth General Assembly of URSI was held at Boulder, Colorado, I went to Boston and visited you. Unfortunately you were away on vacation and could not have pleasure to see you.

Recently I received the letter of invitation to the Second Conference on Atmospheric Electricity to be held at Wentworth by-the-Sea, New Hampshire on 20 - 23 May 1958. To attend the Conference I shall go to Boston on 18 May and call on you in MIT in the morning of 19 May. I would like to see you and at the same time to visit Electronics Laboratories of MIT. I shall be much obliged to you if you make arrangement for my visit to laboratories.

Please return my best regards to Mrs. Wiener.

Sincerely yours,

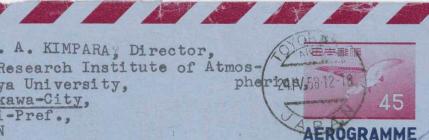
Prof. A. KIMPARA, Director.

bundan

the supply

[aus 5/14/58]

Prof. A. KIMPARA? Director, The Research Institute of Atmos-Nagoya University, Toyokawa-City, Aichi-Pref.,



JAPAN

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

この郵便物には何物も封入又は添附できません

Nothing may be contained in or attached to this letter.

TIME & LIFE BUILDING
ROCKEFELLER CENTER
NEW YORK 20
EDITORIAL OFFICES

April 25, 1958

Dear Dr. Wiener et al:

TIME's editors think that our readers will be interested in your comment apropos of our April 21 report, "How Sane the SANE?". We are, therefore, publishing part of your wire in TIME's May 5 Letters column. A copy of this issue will be sent to each of you as soon as it comes off the press.

Cordially yours,

Marie Barry For the Editors

Therie Bun

Dr. Norbert Wiener et al. Massachusetts Institute of Technology Cambridge, Massachusetts

mb/hs

Rudolf Vircham Medical Society in the City of New York Publication Committee PRESIDENT HENRY LAX, M.D. 1175 Park Avenue 160 EAST 72ND STREET COR. SECRETARY WOLF ELKAN, M.D. 57 WEST 57TH STREET April 25, 1958 TREASURER ARNOLD T. BENFEY, M. D. 50 PARK TERRACE WEST Professor N. Wiener Massachusets Institute of Technology Cambridge, Mass. Dear Dr. Wiener: We are glad to send you enclosed a transcript of the recording of your address delivered before our society in November 1957. As you will remember you kindly agreed to the taking of such a recording and indicated your intention of using the transcript as a basis for preparing a manuscript - to be published in the Proceedings of the society for 1957. We hope that the enclosed pages will serve this purpose, inspite of all the deficiencies, omissions, and distortions to be found in the text. This was our first attempt of this sort, and to deal with this particular subject matter proved to be beyond the capacity of the expert in medical transcriptions who's services we obtained. We would be very grateful for your comment on transcript, manuscript and publication. Thanking you again for your cooperation in making the publication possible, I am Very th

Mary Hayes 3936 Club Drive, N. E. Atlanta 19, Georgia

April 19, 1958

Dear Mr. Wiener,

I am writing a book on education
in which I am attempting to refute the
present educational philosophy. I am
coming into the philosophic field through
s system of dual dynamics based upon
psychodynamics. I am drawing from every
other field in order to strengthen my
theories. I would like to use several
references to your book, The Human Use
of Houman Beings. Provided of course, you
see the similiarity between what you have

Mary Hayes 3936 Club Drive, N. E. Atlanta 19, Georgia

said and what I have said. Also I realize that I am writing on a very controversial subject.

Please advise me if woutdo not approve of the material to which I have attached references.

Thanking you, I am

Sincerely

Mary Dayes

April 25, 1958 Professor Arthur H. Moehlman Texas Education Agency Austin, Texas My dear Professor Moehlman: Many thanks for your appreciative letter of April 11th. It is always good to hear of the work one has done earlier is still finding repercussions. Sincerely yours, Morbert Wiener NW: AD

April 25, 1958 Dr. Kiichi Murakami Industrial Engineering Dept. School of Technology Nihon University Surugadai, Kanda, Tokyo Japan My dear Dr. Murakami: Many thanks for your courteous letter of March 18th. It is a great privilege for me to be able to maintain my personal and scientific relations with my colleagues in Japan where the intellectual atmosphere is so lively and so much is being done. Sincerely yours. Morbert Wiener NW: AD

April 25, 1958 Professor Kenji Kissi 384 Umehara Wakayama City Japan . Dear Professor Kissi: My personal representative in Japan is Dr. Shikao Ikehara of the Tokyo Institute of Technology. I believe my book has already been translated into Japanese. In general Professor Ikehara has the translation rights of my books in Japan, and any negotiations concerning them should go through his hands. Sincerely yours, Norbert Wiener NW: AD

#### UNIVERSITÀ DI ROMA

#### ISTITUTO DI MATEMATICA FINANZIARIA E ATTUARIALE

Piazza Borghese, 9

Rome, April 26, 1958

Prof.Norbert Wiener
Massachusetts Inst.of Technology
Dept.of Mathematics
Cambridge 39, Mass. - U.S.A.

Dear Prof. Wiener:

I am very glad to know you will be at the Information Meeting at Come; I will be there at least for some days, and I am very pleased for this occasion to meet you and explore about our future programs.

Sincerely yours

(Bruno de Finetti)

## april 27th 1958

Dear Prof. Weiner, Thankyon for your kind letter of sympethy John had been working with the physiodogists in some private research before his death and for some years previously this was outside his official 48% which was "classified" in civil service jargon. He had been in negotiatiation with D' Sam Talkot of Johns Hopkins for funds to support hunself or us during his cornel · locence by working on this private research - before he vent uito hospital. Alies arrangement was and D' Sam Talbor agreed to pay the same amount on receipt of his manuscript (about & chapters of a book ) the outline of which is already published by bright latterson in a technical report entitled "an Elastic Tube Theory of Talse Fransmirrion and oscillatory How in Hammalian arterios. ho I have been left with only a years salary as a pension and two younger children to bring up. I was thankful to conclude this business in manuscipt dealing. and so you see I have little to offer you. But I would like to enclose a list of his Mathematical books thet I would be so grateful to know their harketables P.S. This artery flow work he did mostly for love or no monetary rusu Standard Methods III Edition by Wadsworth. Division of Laboratories and Research of the New York Dept. of Health. Condition - New.

Tables of Transcendental Functions by W. Flugge. Condition - New.

Different Geometry by Weatherburn. Condition - New.

The Momogram by Allcock and Jones. Condition - Good. The Theory of Group Representations by Murnaghan. Condition - Good.

Higher Algebra by Ferrar. Condition - Good.

Thermodynamics - Birtwhistle. Condition - Good.

Activity Analysis of Production and Allocation - Edited by Galling C. Koopmans. Condition - Fair.

Sampling Inspection Tables - H. F. Dodge, H. G. Romig. Condition - New.

The Advanced Theory of Statistics. Vol. I. - M. G. Kendall. Condition - Pair. Vol. II. Condition - Good.

Sampling Inspection by the Statistical Research Group, Columbia University. Condition - Fairly good.

Sampling Methods for Censuses and Surveys - F. Yates. Condition - Fair.

Tables of the Bessel Functions of the First Kind of Orders Zero and One - The Staff of the Computation Laboratory. Condition - Good.

Calculating Instruments and Machines - Douglas Hartree. Condition - Good.

Mathematical Physics - H. and B. S. Jeffereys. Condition - Fair.

Economic Control Quality of Manufactured Product - Showart. Condition - Fair.

Statistical Methods in Research and Production - Davies. Condition - Fair.

Statistical Procedures and Their Mathematical Bases - Peters and Van Voorhis. Condition - Fairly good.

Values and Intervals of the Orthogonal Polynomials Up To n=26 - D. B. Delury. Condition - New.

Quality Control by Statistical Methods - G. Hendan. Condition - Good.

The Differential Analyser - J. Crank. Condition - Fairly good.

Statistical Tables for Biologicals, Agricultural and Medical Research by Fisher and Yates. Condition - Good.

Examples in Mathematics, Mechanics, Navigation, and Nautical Astronomy, Beat and Steam, And Electricity for the Use of Junior Officers Afloat. Condition-Boor.

Orginary Differential Equations - E. L. Ince. Condition - Fair.

Applied Mechanics - J. H. Cotterill-Low. Condition - Fair.

Modern Development in Fluid Dynamics, Vol. I and Vol. II. Condition - Feir.

Bessel Punctions for Engineers, McLachlan. Condition - Good.

Functions of Mathematical Physics - Magness and Oberhettinger. Condition - Fairly good. Hydrodynamics - Lamb. Condition - Fair.

Differential Equations - A. R. Forsythe. Condition - Poor.

Tables of Generalized Sine - and Consine - Integral Functions - Staff of the Computation Laboratory, Part I - II. Condition - Good.

Tables of the Function Are Sin - Staff of Computation Laboratory. Condition - New.

The Theory of Bessel Functions - Watson. Condition - Pair.

The Annals of the Computation Laboratory of Harvard University, Vol. XII.

Condition - Fairly Good.

Mathematical Tables Vol. I - Committee for the Calculation of Mathematical Tables. Good. Modified Hankel Functions of Order One - Third - Staff of Computation Laboratory. Fair. The Tables of Natural Logarithms - Volumes I - IV - Federal Works Agency: Work Products Administration for the City of New York. Condition - Fair.

The Tables of Propitity Functions - Volumes I and II - Federal Works Agency, est.

Condition - Fair.

Tables of Sines and Cosines for Radian Arguments - Federal Works Agency ect. Condition - Fair.

Tables of Circular and Hyperbolic Sines and Cosines - Federal Works Agency eet.

Condition - Fair.

Tables of the Exponential Function - Federal Works Agency ect. Condition - Fair. Table of Sine and Cosine Integrals - Federal Works Agency ect. Condition - Fair. Tables of Sine, Cosine, and Exponential Integrals - Vol. I and II. Federal Works Agency ect. Condition - Fair.

Computing Mechanisms and Linkages - Svoboda. Condition - Fairly good.

An Index of Mathematical Tables - Fletcher, Miller, Rosenhead. Condition - Fair.

A Treatise on Solid Geometry - Frost and Wolstenholm. Condition - Poor.

Electronic Instruments - Greenwood, Holdam, Macrae. Condition - Good.

119587 April 28, 1956 Professor K. O. Friedrichs New York University Department of Mathematics New York City, N. Y. Dear Friedrichs: I want to talk about your functionals and about the techniques of developing random time series in terms of them. I also want to say something about the application of your functionals to the study of nonlinear electric circuits. Perhaps the title of my talk should be "The Friedrichs Functionals and Non-Linear Processes". Sincerely yours, Norbert Wiener NW: AD

April 28, 1958

Miss Mary Hayes 3936 Club Drive, N. E. Atlanta 19, Georgia

Dear Miss Hayes:

You are quite welcome to use the material from "The Human Use of Human Beings" which you have already mentioned in your little note. However, in order that there may be no misunderstanding, I request you to clear with my publishers, Houghton Mifflin Company.

I also think it may be of some interest to you to look up my other two books dealing with education, "Ex-Prodigy" which appeared with Simon & Schuster and "I Am A Mathematician" which appeared with Doubleday.

Wishing you success in your undertaking, I remain,

Sincerely yours,

Norbert Wiener

NW: AD

April 28, 1958

Dr. Philip Solomon 57 Chatham Street Brookline 46, Mass.

Dear Dr. Solomon:

Thank you for your letter of April 15th with its enclosure. Mrs. Wiener and I are looking forward to the dinner and Pops Concert on June 20th.

Sincerely yours.

Norbert Wiener

NW: AD

Cans 57/5/58]

April 28, 1958 Dr. Charles Van Buskirk University Hospital Baltimore 1, Maryland Dear Dr. Van Buskirk: Sime writing to you on April 15th I have made a few changes in my plans. I will now arrive in Baltimore on the Federal on Saturday morning, May 3rd. The train gets in at 7:30 A.M., which I presume is in plenty of time for my lecture at 9 o'clock. I would appreciate it if I could be met at the station, or if you would advise me where to go upon arrival. Will you also be good enough to cancel the reservation which you have made at the Lord Baltimore Hotel for Friday night and leave just the one for Saturday night for Mrs. Wiener and myself as has been arranged. Sincerely yours. Norbert Wiener NW: AD [aux 4/30/58]

## Michael W. Freeman, M.D. 401 David Whitney Building Detroit 26, Michigan

April 29, 1958

Professor Norbert Wiener, M. I. T. Cambridge 38, Massachusetts.

Dear Dr. Wiener:

It came to my attention that Dr. McGregor of Dow Corning is capable of making real small in diameter silicone tubes which is being tried to treat glaucoma patients. I thought that you might be interested in this investigation.

My personal feeling is that in most cases glaucoma is caused by a proteolytic enzyme. At least conceptionally, one could approach this problem from this point of view.

I arranged for John Wiley & Sons to mail you one copy of your book on Cybernetics for my son at Harvard. I would appreciate if you would be kind enough to inscribe: "To Michael Freeman at Harvard..." and have your secretary call him at Kirkland 7-6436, Eliot House I-34, and he will come to pick it up. If you can spare a few moments I would like very much for Michael to meet you.

I want to take this opportunity to tell you that we all enjoyed very much visiting with you on April 16 and 17. It was a rich experience for me and I gained much from talking with you on many subjects and especially on electroencephalography. Last week I visited the Partridge School, near Washington, D.C., for mentally retarded, and brain damaged children. I am enclosing a copy of Senator's speech in the Senate telling about this school. I mentioned about your work in encephalography and I was asked if I could obtain from you literature references or information on what you are doing. I told them the little I know about your work.

With kindest personal regards and very best wishes for your good health, I am

Sincerely yours,

April 29, 1958 Dr. R. M. McGregor, Assistant Director of Research, Dow Corning Corporation, Midland, Michigan. Dear Dr. McGregor: I understand that you are producing experimentally real small organic silicone tubes useful in studies of glaucoma treatment. I would appreciate very much if you could send me any literature or information on this approach to glaucoma treatment. If you will send me an extra set of papers I want to mail to Dr. Norbert Wiener, M. I. T., Cambridge 38, Massachusetts, who is interested in this subject. Thank you very much for your courtesy, I am Sincerely yours, M. W. Freeman, M.D. mwf/m

April 29, 1958 Professor P. B. Bon Room 14-N-313 Mass. Institute of Technology Dear Professor Bon: Many thanks for looking over the French trans-lation of my article. I have checked up your comments and you have done an infinitely better job than the original writer. This confirms the ideas that I have always had about the difficulty of translation, and in particular about the dangers which would come if we were to have anything like mechanical translation. I am quite certain that the best mechanical translator in the world would give a result far inferior to that of the man who originally did the work. Sincerely yours, Norbert Wiener NW: AD

April 29, 1958

Mr. Philip R. Mather 16 Arlington Street Boston 16, Massachusetts

Dear Mr. Mather:

Enclosed is Professor Wiener's check in the amount of Five Dollars and Fifty Cents for the dinner of the Speckled Band on May 2nd.

Very truly yours,

Secretary to Professor Norbert Wiener

April 29, 1958 Mr. Robert N. Yetter 100 Jackson Avenue Susquehanna, Pennsylvania My dear Mr. Yetter: The problem of artificial languages is not a new one and I doubt if it has any adequate solution except in a very limited sense. With a greater knowledge of languages the model of inflected languages such as Latin seems to be less compelling than it used to seem. I am distinctly doubtful not of the possibility of constructing artificial languages but of the question whether when they have been constructed and when they have settled down to a stable vocabulary and syntax they will be more useful or easier than languages now existing. The nominal construction of an artificial language is only a small part of the problem of creating one because such a large part of the real individuality of the language lies not in its grammar and its form of vocabulary but in its. usage in its means of augmenting its vocabulary as needed. In other words, it is a relatively easy matter to initiate something that we can call an artificial language, but it is a most difficult matter to make the substantial improvement over existing languages without a careful study of the use to be made of it and of the theory of language in general. For this reason I remain not hostile but profoundly skeptical. Sincerely yours. Norbert Wiener NW: AD

5/28 Brof Weener pays feel . ASSOCIATION INTERNATIONALE NAMUR, le 30 avril 1958 DE CYBERNÉTIQUE A. S. B. L. Secrétariat : Massachusetts Institute of Technology 13, Rue Basse-Marcelle CAMBRIDGE. NAMUR (Belgique) Tél. 279.83 Mr. President, We are pleased to inform you that as from May 1958, the International Association for Cybernetics will publish a quarterly review called "Cybernetica" containing articles of a scientific nature on subjects relating to the various domains of cybernetics. Through this publication the Association will be able to carry out the aims it has set itself and which are as follows: 1) To ensure a permanent and organized liaison between researchers whose work in various countries is related to different sectors of cybernetics. 2) To promote the development of this science and of its technical applications, as well as the propagation of results obtained in this field. Each number will be 16 x 24 cms in size and will consist of about 70 pages. There will be an average of four articles on varied subjects. Whenever there is sufficient material there will be a special feature called "Recent Publications" dealing with articles and other works connected with cybernetics. One page will be devoted to news of the activities of the International Association for Cybernetics. The columns of "Cybernetica" are open to all specialists in cybernetics and contributions from members of the Association, which at the moment group nearly 1,000 people from 33 countries, will be particularly welcome. We have the pleasure to inform you that the first number will include the following articles: - Editorial par M. Georges R. BOULANGER, Président de l'Association Internationale de Cybernétique. - MM. Norbert WIENER, Professor of mathematics at the Massachusetts Institute of Technology (Cambridge, U.S.A.), "My connection with cybernetics - Its origins and its future". Louis COUFFIGNAL, Inspecteur Général de l'Instruction Publique de France, Directeur du laboratoire de calcul mécanique de l'Institut Blaise Pascal (Paris), "Le symposium de Zürich et les concepts de base de la cy-" bernétique ". . . . / . .

.../.

John DIEBOLD, President of the John Diebold and Associates, Inc. (New York),

" Education for data processing - The real challenge to ma---

Aurel DAVID, Chargé de recherches au Centre National de la Recherche Scientifique (Paris),

"Réflexions pour un nouveau schéma de l'homme ".

Pierre AUGER, Directeur du département des sciences exactes et naturelles de l'U. N. E. S. C. O.,

"Si peau d'âne m'était conté ".

Articles will be published in French or in English, according to the wishes of the author.

The review of the Association can hardly fail to interest all those who are in any way concerned with the development of cybernetics and its applications.

The terms of the subscription for 1958 are as follows:

- members of the International Association for Cybernetics: 150, Belgian francs per annum;
  - non-members: 300, Belgian francs per annum.

Separate numbers of the review may be obtained on the following terms:

- members of the International Association for Cybernetics: 50, Belgian francs per number;
- non-members: 100, Belgian francs per number.

The review will be sent to you on receipt of the enclosed subscription form. Payment should be made by one of the modalities set out at the back of this one.

We beg to inform you that the membership fee of the Association has been fixed for 1958 at 200, Belgian francs for individual members and at 1,000, Belgian francs for organisms and commercial and industrial firms. All informations concerning the Association and a membership form may be sent when required.

We remain,

Yours faithfully,

The Managing Administrator,

J. LEMAIRE.

The President,

G. R. BOULANGER.

# ASSOCIATION INTERNATIONALE DE CYBERNÉTIQUE

A. S. B. L.

Secrétariat : 13, Rue Basse-Marcelle NAMUR (Belgique)

Tél. 279.83

No

Mr. Président,

NAMUR, le 30 avril 1958.

Massachusetts Institute of Technology

CAMBRIDGE.

We have the honour to inform you that on December 13th and 14th, 1957, the International Association for Cybernetics organized two International Meetings for Information on the economic and social implications of Automation.

It has been decided that the text of the lectures given on this occasion should be published in full, in view of their great interest. The programme was as follows:

- Exposé introductif par M. Georges R. BOULANGER, Président de l'Association Internationale de Cybernétique.
- M. Hyacinthe DUBREUIL (France),

"Les promesses de l'automation sont-elles valables?".

Miss Joan WOODWARD (England), Head of Management Research Unit at the South East Essex Technical College,

- "The effects of technical innovation on management organization".
- MM. Maurice LACHIN (Frace), Président de la Commission pour le plein emploi dans le cadre de l'automatisme du Comité National de l'Organisation Française,
  - " Vue d'ensemble sur les problèmes de reconversion de la main-
  - "d'oeuvre et sur le plein emploi dans le cadre de l'automatisme

" en Europe ".

Robert VAN EGTEN (Belgique), Ingénieur, Chef du laboratoire central d'électronique de la S. A. Fabelta,

"Solutions humaines aux problèmes humains de l'automation - "Hypothèses".

Robert CAUSSIN (Belgique), Administrateur-Directeur du Comité National Belge de l'Organisation Scientifique,

"Du travail individuel au travail automatique: le transfert des

" fonctions de l'homme à la machine ".

Max GOTTSCHALK (Belgique), Collaborateur scientifique à l'Institut de Sociologie Solvay,

<sup>&</sup>quot; Automation et réactions syndicales ".

.../..

Aurel DAVID (France), Chargé de recherches au Centre nationale de la Recherche scientifique,

"Conséquences sociales et humaines de certaines automatisa-"tions ".

Fred POLAK (Hollande), Professeur de sociologie à la Netherland's School of Economics de Rotterdam,

"Economic and social aspects of automation particularly with regard to future employment".

Emile DASSEL (Belgique), Professeur à l'Université Libre de Bruxelles, Directeur aux Grands Magasins "A l'Innovation",

"Les conséquences économiques et sociales de l'automation dans les entreprises de distribution ".

Lucien MEHL (France), Directeur des Stages de l'Ecole Nationale d'Administration,

"L'automation des activités tertiaires; ses conséquences éco-"nomiques et sociales".

Walther SCHEVENELS (Belgique), Secrétaire Général de l'Organisation Régionale Européenne des Syndicats Libres,

"Les syndicats européens devant l'automation ".

The printed volume, size 16 x 24, will comprise over 100 pages and may be obtained in May on the following terms:

- members of the International Association for Cybernetics ) 75, -B. frs participants in the International Meetings for Information )
- all other persons and organizations: 150, -B. Frs.

This volume puts at your disposal a great variety of information on the incidence in the economic and social fields of the introduction and development of automation.

May we draw your attention to the fact that all the subjects treated are of immediate interest today.

This publication may be obtained by sending back the enclosed order form, and payment may be made by any one of the modalities set out at the back of this one.

We remain,

Yours faithfully,

The Managing Administrator,

J. LEMAIRE

The President,

G. R. BOULLANGER.

### INTERNATIONAL ASSOCIATION FOR

13, rue Basse Luccelle Namur (Belgium).

ORDER FORM (1)

1	Review "Cybernetica".
	Name:
	Address:
	The undersigned agrees to take out subscription(s)(2) for the year 1958, at the pul- ce of 396, Belgian frames.
2, -	The Economic and Social Implications of Automation.
	Name:
	Address:
	The undersigned agrees to subscribe to copy(ies) (2) of the publication in book of the lectures given during the International Information Days on the economic and social implications of Automation. Price: 150, Belgian francs.
3	Documentation on the International Association for Cybernetics.
	The undersigned wishes to receive - does not wish to receive - documentation on the International Association for Cybernetics with a view to becoming a member.
	$\mathbf{x}$
The	e amount due will be paid without delay according to one of the modalities set out overleaf.
	(signature)
	(date)

tions only, please cross out the paragraph that does not apply.

(1) If you wish to receive the review only, or the volume on the social and economic implica-

(2) Please state the number of subscriptions or copies you desire.

## Modalities of payment:

- 1) By banker's order to account N° 77851 at the Banque de la Société Générale de Belgique, Namur, made out to the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).
- 2) By banker's draft made out to the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).
- 3) By international money order, made out to the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).
- 4) By transferring or paying in to the Postal Cheque Account N° 453, 56 of the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).

#### PROGRAMME.

Subjects dealt with at the Congress will be divided into the following six groups :

- 1. Information (information theory, computing machinery, etc.).
- 2. Automatic machinery (the application of cybernetics to machines).
- 3. Automation (the use of automatic machinery in industry and office work).
- 4. The economic and social effects of automation.
- 5. Cybernetics and the social sciences.
- 6. Cybernetics and biology.

#### GENERAL ORGANIZATION.

The languages used at the Congress will be French and English.

The programme will include plenary sessions and meetings of the various sections. A concluding conference will synthesize the general results of the Congress.

The plenary sessions will be held in the mornings. General lectures will be given on the subjects mentioned above.

The section meetings will be held in the afternoons. Papers will be read and discussed. There will be as many sections as are necessary to cover the maximum amount of ground.

The concluding conference of the Congress will be attended by the chairman and secretaries of each section.

The proceedings of the Congress will be published.

#### FEES.

All those wishing to take part in the Congress are invited to return the attached form, duly filled up, to the Secretariat of the International Association for Cybernetics, 13, rue Basse-Marcelle, Namur, Belgium.

The fees for attending the Congress have been fixed as follows:

- Members of the International Association for Cybernetics
   Non-members
   400 frs.
  - No fees will be charged to the authors of papers.

#### NOTICE TO AUTHORS OF PAPERS.

Authors of papers are requested to send the title and a summary of the paper to the Secretariat as soon as possible, and in no case later than June 1st, 1958. This summary should not exceed one type-written page.

#### OUTSIDE ACTIVITIES.

The second General Assembly of the International Association for Cybernetics will be held during the Congress.

A visit to the 1958 Brussels World's Fair will by arranged for the members of the Congress and their families.

In addition, a series of excursions will be organized for the persons accompanying the congressists but not attending the meetings.

Registration forms for membership of the International Association for Cybernetics may be obtained on request from the Secretariat, 13, rue Basse-Marcelle, Namur, Belgium.

#### INTERNATIONAL ASSOCIATION FOR CYBERNETICS

# SECOND INTERNATIONAL CONGRESS ON CYBERNETICS

# APPLICATION FORM

Please complete this form in block letters and return it, as soon as possible, to :

Secretariat

ASSOCIATION INTERNATIONALE DE CYBERNETIQUE
13, rue Basse-Marcelle
NAMUR, Belgium

SURNAME :	First name :	Members of the internatio
	respecto significa	to fees will be dadiged to fac
Rank and Profession :		
Nationality :	Language chose	n (French or English) :
et enitobossA, flanollaminte, es	y, of which the participant is a c	delegate :
	eventual registration as member	vicemetics with a view lawny
The participant will be accompar	nied by the following persons :	
Surname	First name	Relationship
1		
1.		
2	-	-
3,		
4.		

I am interested in the following subjects (1): TATOGERA JAMON AMERICAN Information / Automatic machinery / Automation / Economic and social effects of automation / Cybernetics and social sciences / Cybernetics and biology. SECOND INTERNATIONAL CONGRESS ON CYRERNETICS I shall present a paper on the following subject (1): Information / Automatic machinery / Automation / Economic and social effects of automation / Cybernetics and social sciences / Cybernetics and biology. APPLICATION FORM Title of the Paper: Please complete this form in block letters and return it, as soon as possible, to 13, rue Basse-Marcelle Fees. Members of the International Association for Cybernetics.............. 200,— Belgian francs. No fees will be charged to the authors of papers. I am paying the fee (1): by banker's order made out to the Association Internationale de Cybernétique, Account Nº 77.851 of the Banque de la Société Générale de Belgique, Namur (Belgique) ; by cheque made out to the Association Internationale de Cybernétique, 13, rue Basse-Marcelle, Namur (Belgique); through the Post-Office, by money-order made out to the Association Internationale de Cybernétique, 13, rue Basse-Marcelle, Namur (Belgique) ; through the Office des Chèques Postaux, Account Nº 453.56 of the Association Internationale de Cybernétique, 13, rue Basse-Marcelle, Namur (Belgique). I desire / do not desire / to receive literature relating to the International Association for Cybernetics, with a view to my eventual registration as member (1). 

(Sianature)

<sup>(1)</sup> Strike out when not applicable.

Information (information theory, computing machinery, etc.).
 Automatic machinery (the application of cybernetics to machines).

Subjects dealt with at the Congress will be divided into the following six groups

# Second International Congress on Cybernetics

NAMUR, September 3rd to 10th, 1958

Under the Honorary Presidency
of the Governor of the Province of Namur

A concluding conference will synthesize the general results of the Congress.

The programme will include planary sessions and meetings of the various sections

The International Association for Cybernetics is organizing the Second International Congress on Cybernetics in Namur, Belgium, from September 3rd to September 10th, 1958. This Congress falls within the range of activities proper to the Association, as defined in Article 3 of its statutes:

- « The aim of the International Association for Cybernetics is to ensure a permanent and
- » organized liaison between scientists whose work, in various countries, is connected with
- » any aspect of cybernetics.
- » The Association strives to advance the science of cybernetics and its technical appli-
- » cations, and to publicize the results obtained in this field. It will take all necessary

The feet for attending the Congress have been fixed as follows

» steps to achieve its objectives. »

# THE PURPOSE OF THE CONGRESS.

The Second International Congress on Cybernetics will again bring together people with a common interest in cybernetics, thus continuing the work of the 1956 Congress which was attended by 800 delegates from 22 countries. As in 1956, the organizers are unwilling to set too precise a limit to the range of subjects under discussion. On the contrary, they hope for the widest possible exchange of views and information.

# ORGANIZING COMMITTEE.

The Organizing Committee of the Congress is made up as follows:

**President :** Prof. Georges R. BOULANGER Belgium), of the Polytechnic Faculty of Mons and of Brussels University.

Members: René CLOSE (Belgium), Barrister at Namur;

Automatic Computation Laboratory, Institut Blaise Pascal, Paris;

John DIEBOLD (U. S. A.), Management Consultant, President of John Diebold and Associates, Inc. New York;

W. Grey WALTER (United Kingdom), Director of the Physiological Department of the Burden Neurological Institute, Bristol.

Permanent Delegate: Josse LEMAIRE (Belgium), Director of the Economic, Social, and Cultural Office of the Province of Namur.

### INTERNATIONAL ASSOCIATION FOR

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Asserted to the

CYBERNETICS. 13, rue Basse Marcelle Namur (Belgium).

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The undersigned agrees to subscribe to copy(ies) <sup>(2)</sup> of the publication in boo of the lectures given during the International Information Days on the economic and social implications of Automation, Price: 150, Belgian francs.				
3 Documentation on the International Association for Cybernetics.				
The undersigned wishes to receive - does not wish to receive - documentation on the International Association for Cybernetics with a view to becoming a member.				
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- 2) By banker's draft made out to the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).
- 3) By international money order, made out to the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).
- 4) By transferring or paying in to the Postal Cheque Account N° 453.56 of the International Association for Cybernetics, 13, rue Basse Marcelle, Namur (Belgium).

## ASSOCIATION INTERNATIONALE DE CYBERNÉTIQUE

1 1 1 0

A. S. B. L.

Secrétariat : 13, Rue Basse-Marcelle NAMUR (Belgique)

Tél. 279.83

No

Dear Sirs,

We have the honour to inform you that on December 13th and 14th, 1957, the International Association for Cybernetics organized two International Meetings for Information on the economic and social implications of Automation

It has been decided that the text of the lectures given on this occasion should be published in full, in view of their great interest. The programme was as follows:

- Exposé introductif par M. Georges R. BOULANGER, Président de l'Association Internationale de Cybernétique.
- M. Hyacinthe DUBREUIL (France),

"Les promesses de l'automation sont-elles valables ? ".

Miss Joan WOODWARD (England), Head of Management Research Unit at the South East Essex Technical College,

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MM. Maurice LACHIN (France), Président de la Commission pour le plein emploi dans le cadre de l'automatisme du Comité National de l'Organisation Française.

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Robert VAN EGTEN (Belgique), Ingénieur, Chef du laboratoire central d'électronique de la S. A. Fabelta,

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Robert CAUSSIN (Belgique), Administrateur-Directeur du Comité National Belge de l'Organisation Scientifique,

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Max GOTTSCHALK (Belgique), Collaborateur scientifique à l'Institut de Sociologie Solvay,

" Automation et réactions syndicales ".

. . . / . .

29 avril 1958.

NAMUR, le

Aurel DAVID (France), Chargé de recherches au Centre national de la Recherche Scientifique,

"Conséquences sociales et humaines de certaines automatisa"tions".

Fred POLAK (Hollande), Professeur de sociologie à la Netherland's School of Economics de Rotterdam,

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Emile DASSEL (Belgique), Professeur à l'Université Libre de Bruxelles, Directeur aux Grands Magasins "A l'Innovation",

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Lucien MEHL (France), Directeur des Stages de l'Ecole Nationale d'Administration,

"L'automation des activités tertiaires; ses conséquences économiques et sociales ".

Walther SCHEVENELS (Belgique), Secrétaire Général de l'Organisation Régionale Européenne des Syndicats Libres,

"Les syndicats européens devant l'automation ".

The printed volume, size 16 x 24, will comprise over 100 pages and may be obtained in May on the following terms:

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May we draw your attention to the fact that all the subjects treated are of immediate interest today.

This publication may be obtained by sending back the enclosed order form, and payment may be made by any one of the modalities set out at the back of this one.

We remain,

... / . .

Yours faithfully,

The Managing Administrator,

The President,

3

G. R. BOULANGER.

J. LEMAIRE

ASSOCIATION INTERNATIONALE
DE CYBERNÉTIQUE

A. S. B. L.

Secrétariat : 13, Rue Basse-Marcelle NAMUR (Belgique)

Tél. 279.83

No

Dear Sirs,

I am pleased to inform you that as from May 1958, the International Association for Cybernetics will publish a quarterly review called "Cybernetica" containing articles of a scientific nature on subjects relating to the various domains of cybernetics.

NAMUR, le

29 avril 1958.

Through this publication the Association will be able to carry out the aims it has set itself and which are as follows:

- 1) To ensure a permanent and organized liaison between researchers whose work in various countries is related to different sectors of cybernetics.
- 2) To promote the development of this science and of its technical applications, as well as the propagation of results obtained in this field.

Each number will be 16 x 24 cms in size and will consist of about 70 pages. There will be an average of four articles on varied subjects. Whenever there is sufficient material there will be a special feature called "Recent Publications" dealing with articles and other works connected with cybernetics. One page will be devoted to news of the activities of the International Association for Cybernetics.

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The review of the Association can hardly fail to interest all those who are in any way concerned with the development of cybernetics and its applications

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- non-members: 100, Belgian francs per number.

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I beg to inform you that the membership fee of the Association has been fixed for 1958 at 200, Belgian francs for individual members and at 1,000, Belgian francs for organisms and commercial and industrial firms. All informations concerning the Association and a membership form may be sent when required.

I remain,

Yours faithfully,

The Managing Administrator,

semain in

J. LEMAIRE.

# ASSOCIATION INTERNATIONALE DE CYBERNÉTIQUE

NAMUR, le

29 avril 1958.

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We should be most grateful if members of the Association who have already published works on subjects connected with cybernetics, or who would like to contribute an article to our review, would return to us, as soon as possible, the second form enclosed with this letter.

We remain,

Yours faithfully,

The Managing Administrator,

J. LEMAIRE.

The President,

G. R. BOULANGER.

# ASSOCIATION INTERNATIONALE DE CYBERNÉTIQUE

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NAMUR (Belgique)

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We remain,

Yours faithfully,

The Managing Administrator,

LEMAIRE.

The President,

G.R. BOULANGER.

# INTERNATIONAL ASSOCIATION FOR CYBERNETICS.

13, rue Basse Marcelle Namur (Belgium).

# Review "CYBERNETICA".

Publications by Members.

I, the undersigned							
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The text of these articles:							
<ul><li>(1) is enclosed with this form;</li><li>(1) will reach you no later than</li></ul>							
hereby declare that I fully authorize the International Association for Cybernetics to publish these articles in the review "Cybernetica" entirely free of copyright.							
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		(signature)					

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#### INTERNATIONAL ASSOCIATION FOR

CYBERNETICS.
13, rue Basse Marcelle
Namur (Belgium).

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# ASSOCIATION INTERNATIONALE DE CYBERNÉTIQUE A. S. B. L. Secrétariat :

Tél. 279.83

13, Rue Basse-Marcelle
NAMUR (Belgique)

No

Dear Sir,

We beg to recall you our letter of February 20th last relative to your membership fee for 1958.

We have decided to maintain the same conditions as during the previous year, that's to say 200, Belgian francs.

We should be so glad if you could settle this fee, as soon as possible, in order to benefit of the different advantages reserved to our members.

Yours faithfully,

The Managing Administrator,

J. LEMAIRE.



April 30, 1958

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

Dear Dr. Wiener:

Right now we are in the process of preparing advertising and sales promotion material for the POPULAR MATHEMATICS series to which you are a contributor.

I wonder if you could furnish us with a sharp picture of yourself, which we would like to consider for use in our brochure. If you have more than one, our preference is for a relaxed informal pose. A smiling expression would be ideal. Since the picture would be reduced to a rather small size, the actual size of the print is not too important. Even a wallet size shot would serve provided it is sharp.

The circular we are now working on for POPULAR MATHEMATICS is on a very tight schedule; and for this reason, we would be grateful if you could send any available picture just as quickly as possible.

Cordially yours

Alan Rosenberg,

Sales Manager

AR:mb

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE BALTIMORE I, MARYLAND OFFICE OF THE DEAN April 30, 1958 Dr. Norbert Wiener Professor of Mathematics Massachusetts Institute of Technology Cambridge, Mass. Dear Professor Wiener: Enclosed herewith is a check for \$170.00 as an honorarium for your participation in the seminar on "Man and His Environment". The faculty and students wish to express their appreciation for your excellent presentation. Sincerely, Jon o Stare William S. Stone, M. D. Dean WSS:vs Enc.



INDUSTRIAL LIAISON OFFICE

CAMBRIDGE 39, MASS.

April 30, 1958

Dr. Norbert Wiener Room 2-276

Dear Dr. Wiener:

As I promised you recently when we met in the Faculty Club, I am sending you herewith my copy of Masterpieces of Korean Art, the booklet describing the exhibit soon to open at the Boston Museum of Fine Arts.

I hope that you will read carefully the historical introduction, which is well written by one of the best scholars on Korean culture in this country, Mr. Gregory Henderson.

I should like to have the book back after you have finished with it. In case you would like to have a copy of your own, they are being sold at the Boston Museum at a price of \$4.00.

Sincerely,

William R. Weems, Director

Industrial Liaison Office

WRW:bb Enclosure

Eshelet may 7 t June 15

00 7.930

[ my 5/19/58]

1. margaret E. Nienes - 53 Ceder Rd. Belmont - 9/7/94 - Nife 2. no Choise Date y hintly member 200.27, 1894 Bate 1 RETIREMENT PLAN FOR STAFF MEMBERS Date of Employment 1919 of the massachusetts institute of technology • cambridge 39, massachusetts THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY PENSION ASSOCIATION and the SUPPLEMENTARY RETIREMENT PLAN FOR STAFF MEMBERS OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY April 30, 1958 To the Members of the Retirement Plan for Staff Members: An important benefit of the Retirement Plan for Staff Members is the provision for death benefits before retirement benefit payments begin. This feature of the Plan is described in section 6 on page 6 of the booklet on the Plan dated August 1, 1957. In section 9 on page 9 of the August, 1957, booklet you will find the information on beneficiaries, and in section 11 on the same page mention is made of special forms for designating beneficiaries. The enclosed white card will provide the required information to the trustees. For your convenience, sample wording for the designation of the beneficiaries and of the method of payment of the death benefit appears on the reverse side of the white card. The lump sum death benefits that would accrue under certain circumstances are shown in section 15 on page 11 of the booklet. An annuity payable during the lifetime of the beneficiary with payment certain for a predetermined number of years provides that benefits will be continued until the time of the beneficiary's death if that is later. Under the option of installments for a definite period of years not exceeding twenty years, the payments will cease after the designated period but may be continued within the designated period to a second beneficiary or to the estate of the original beneficiary. It is important that the records of the trustees of the Plan include your wishes with respect to your beneficiaries to whom benefits would become payable and the plan by which they should be paid under this death benefit provision. The selection you make now of your beneficiary and the method of payment will not affect your program later on when you do retire The new form, enclosed, will supercede any previous information you have provided; please complete this form and return it in the enclosed envelope before June 1. If you wish in the future to change your beneficiary designations or the method of payment, you may obtain a form for this change at the Personnel Office, Room 24-104, or at the Accounting Office, Room 24-211. If you need further information, please call Mr. W. A. Hokanson, Bursar, Room 4-106, Extension 3343. Sincerely, membership no. 188 Joseph J. Snyder Treasurer

April 30, 1958

Scientia L-6300 Via Margoni 3 Milan, ITALY

Gentlemen:

Enclosed is my manuscript on "Time and the Science of Organization". This has been checked over and certain corrections have been made in the translation.

Sincerely yours,

Norbert Wiener

NW: AD Enc.

#### "SCIENTIA.

Via Roncaglia, 4 - ASSO (Como)

Cher Monsieur,

je me permets nov vous rappeler que je suis encore dans l'atter 257 de l'article que vous avez en la bonté de me laisser espérer pour "Scientia".

Je vous serais très obligé, cher Monsieur, si vous pouviez en hâter la rédaction et l'envoi et si vous vouliez bien, en attendant, avoir l'amabilité de me répondre un mot pour me tranquilliser à ce sujet.

Je vous renouvelle, Monsieur, l'expression de mes sentiments les plus distingués et les cordiaux.

p. "SCIENTIA,

(Dott. Paolo Bonetti)

# "SCIENTIA,

Rivista internazionale di sintesi scientifica Revue internationale de synthèse scientifique International Review of scientific synthesis Internat. Zeitschrift für wissenschaftliche Synthese Revista internacional de sintesis cientifica

> Via Roncaglia, 4 - ASSO (Como)

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En cas d'insuffisance d'adresse prière de renvoyer à "SCIENTIA,, Via Roncaglia, 4 - Asso (Como Italie)



PROF. NORBERT WIENER

Massachusetts Institute of Technology

CAMBRIDGE

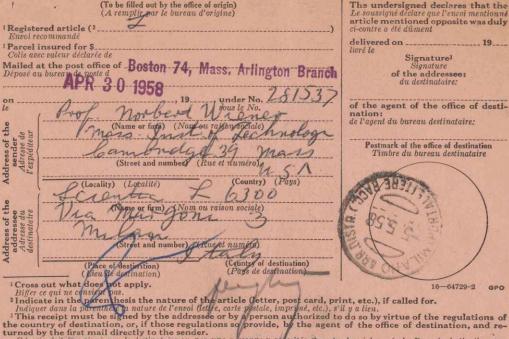
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The undersigned declares that the Le soussigné déclare que l'encoi mentionné article mentioned opposite was duly

delivered on \_\_\_\_\_19\_\_\_

Signature<sup>3</sup> Signature of the addressee: du destinataire:

of the agent of the office of desti-

Postmark of the office of destination Timbre du bureau destinataire



16-64729-2 GPO

Indicate in the parenthesis the nature of the article (letter, post card, print, etc.), if called for,

This receipt must be signed by the addressee or by a person authorized to do so by virtue of the regulations of

Cet avis doit être signé par le destinataire ou par une personne y apporisée et vertu des règlements du Pays de destination, ou. si ces regiements le comportent, par l'agent du bureau destinataire, et ren byé par je p emier courrier grectement à l'expéditeur.