

January 31, 1958.

Department of Experimental Psychiatry

Annual Report

During 1957, the Department of Experimental Psychiatry completed the first phase of its studies of the therapies of mental illness. Following the elucidation of the basic neurophysiologic and psychologic bases of the process of convulsive therapy, a control convulsive-subconvulsive study was undertaken in 1956 and completed in 1957. This study clearly demonstrated the changes in brain function which are the necessary prerequisites for change in behavior; and the psychologic, sociologic and language aspects which are fundamental to "improvement" after convulsive therapy.

In concurrent studies, the equivalence of chlorpromazine therapy for insulin coma, and the advantages of newer drug therapies were demonstrated in a chlorpromazine-insulin coma control study. Consequent upon these observations, a hypothesis of the mode of action of tranquilizers were described and a program of behavioral assay of new drugs undertaken, with support from the National Institutes of Health and various pharmaceutical concerns.

Basic studies into patterns of communication continued. By applying new techniques of psycholinguistics, objective methods of evaluating behavioral change and "improvement" were described and are now being tested. Studies in tactile and visual perception, neurophysiologic and psychologic bases for individual differences in response to drugs and convulsive therapy, and biochemical changes in spinal fluid after induced convulsions continued.

The Staff of the Department, consisting of the Director, five Research Associates and three technical assistants, contributed articles for the special "Experimental Psychiatry" issue of the Journal of the Hillside Hospital. The Staff includes:

Max Fink, M.D.	-	Director		
Martin A. Green, M.D.	-	Research Associate	(Neurophysiology)	
Joseph Jaffe, M.D.	-	"	"	(Psychiatry)
Robert L. Kahn, Ph.D.	-	"	"	(Experimental Psychology)
Max Pollack, Ph.D.	-	"	"	"
Hyman Korin, Ph.D.	-	"	"	"

Support for this program was increased considerably in 1957 by grants from the Foundation's Fund for Research in Psychiatry, The National Institutes of Mental Health, the Psychopharmacology Center of the National Institutes of Health and the Board of Directors.

Respectfully submitted,

Max Fink, M.D.

FROM: Richard Weiner
RUDER & FINN INCORPORATED
130 East 59 Street
New York 22, New York
PLaza 9-1800

FOR RELEASE

MAY 7, 1958

FOR: HILLSIDE HOSPITAL

A Long Island psychiatrist whose research points to the underlying changes necessary to reverse the depressive type of mental illness will be honored this week by a major national psychiatric association.

Dr. Max Fink, Director of the Department of Experimental Psychiatry at Hillside Hospital, Glen Oaks (Queens), New York, will receive the first A. E. Bennett Neuropsychiatric Research Foundation Award. The Society of Biological Psychiatry will present the award at the group's 13th Annual Meeting in San Francisco, California, on May 11. The meeting is part of the American Psychiatric Association Annual Meeting.

Dr. Fink will present a paper on his work titled, "Effect of Anti-Cholinergic Agent, Diethazine, on EEG and Behavior: Significance for Theory of Convulsive Therapy."

The report describes experimental studies of the neurophysiologic and biochemical bases for "shock" therapies. Dr. Fink and his associates at Hillside Hospital have observed that changes in a specific enzyme system of the brain, acetylcholine-cholinesterase, are intimately related to improvement in electroshock. However, changes in the opposite direction are accompanied by hallucinations, delusions, and psychotic behavior.

Drugs that decrease the activity of the acetylcholine normally present in the brain excite psychotic activity. They also reverse the electroshock effect. Some of the newer hallucinogens, such as lysergic acid (LSD) and

mescaline, are most potent in this regard. On the other hand, chlorpromazine halts the hallucinogenic action of these compounds and enhances the electro-shock effect.

The Hillside research extends the understanding of the mode of action of convulsive therapies by defining the biochemical bases for the observed neurophysiologic effects.

The studies have been supported by the National Institute of Mental Health and the Board of Directors' Research Fund of Hillside Hospital.

Dr. Fink is Secretary of the Section of Convulsive Disorders and Brain Function of the American Psychiatric Association and President-Elect of the Nassau Neuropsychiatric Society.

Hillside Hospital, an affiliate of the Federation of Jewish Philanthropies of New York, is a non-profit, non-sectarian hospital for psychiatric treatment, training and research.

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Peace Missionary May Have to Pacify Family

Mrs. Lola Stone, pretty young Long Island housewife who's on an international peace mission to ban nuclear tests, may have some pacifying to do when she gets home.

The husband and two children of the globe-trotting peace missionary are proud of her campaign, but they miss her and wish she'd hurry home to Kan-

Lane, Huntington Bay.

"We think she's wonderful, we're quite proud of her, but it hurts some time," her husband, Robert, said with a smile. "We're counting the days."

Mrs. Stone is one of a group of five pacifists on a 4,000-mile tour of European capitals to protest testing of nuclear weapons, and to seek a world ban.

They have been stalled in Helsinki for a week because of the reluctance of the Soviet Union to grant them entry visas.

"We are hoping the visas will come through," Mrs. Stone told her husband by phone from Helsinki. "The most important part of our mission lies ahead. We hope this is just a routine delay."

The group flew from Idlewild April 14, and stopped at London, Paris, Bonn and West Berlin to interview national leaders and "just plain people."

Despite a brush-off at 10 Downing St., official residence of British Prime Minister Harold Macmillan, the overall reaction was "favorable and optimistic," Mrs. Stone reported.

The scheduled last lap of the journey was to be Russia, where the group hoped to persuade Kremlin officials to agree to an unconditional ban on nuclear testing as "a demonstration of their sincerity."

Expenses of the trip are being borne by "Non Violent Action Against Nuclear Weapons," the same group that sponsored the voyage of the ketch, "Golden Rule," stopped by the Coast Guard off Hawaii.

TA Rejects Protest By MBA

The Transit Authority today brushed aside a Motorman's Benevolent Association protest that it would be "dangerous" for motormen to leave their controls on the BMT Myrtle Avenue line to help operate the doors.

"The MBA is making a mountain out of a molehill," a TA spokesman said.

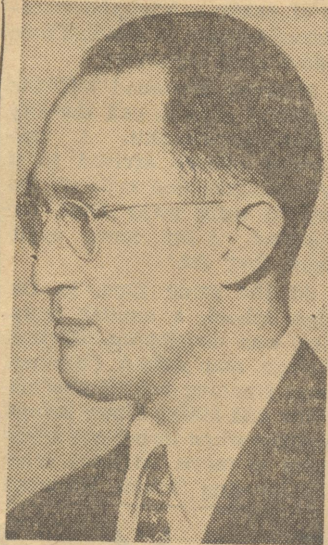
Theodore Loos of Jamaica, the association's president, protested yesterday that a train's brakes might slip — and the train start rolling—while the motorman was out of his cab.

"Under our order," the Transit Authority spokesman said, "the motormen will have to leave his cab only under certain conditions . . . and those conditions only crop up once in a blue moon.

Even if the motorman leaves his controls, he'll never be more than four feet from the brake."

The TA said its order applied only to a few stations on the Myrtle Avenue line. At those stations, there's no change collector at night, so the conductor on the train collects fares. The motorman will be asked to help the conductor out when a "big crowd" boards the train.

"We only pick up an average of four persons per trip at all those stations put together," the TA spokesman said. "We almost never get a crowd there."



DR. MAXIMILLIAN FINK

Psychiatrists Will Honor L.I. Doctor

A Long Island psychiatrist will receive the first A. E. Bennett Neuropsychiatric Research Foundation Award.

He is Dr. Maximillian Fink of 13 Bayview Ave., Great Neck, director of experimental psychiatry at Hillside Hospital, Glen Oaks.

Dr. Fink will receive the award Sunday from the Society of Biological Psychiatry at its annual convention in San Francisco.

He is being honored for research into the effect of "shock" therapy.

"We've been able to discover how the mentally ill respond to shock therapy," Dr. Fink explained. "And, just as important, we've learned why some persons do not respond to such treatments."

Dr. Fink has lived on Long Island since 1950, and was appointed the hospital's research

Reconsider R'n'R Ban.

Fishermen Angry Over Empty Pond

HARTFORD, Conn. (UP)—Red-faced officials of the State Fish and Game Department admitted somebody goofed when angry fishermen pointed out in a department-provided pamphlet that Day Pond in Colchester was stocked with trout and open for fishing.

The anglers had risen before dawn on opening day and made the trip to the pond, only to find it dry as a bone.

1/15/59

Department of Experimental Psychiatry

Following is a chronologic list of the presentations and publications of the members of the Department of Experimental Psychiatry during 1958.

A. Publications:

1. Changes in Language During Electroshock Therapy, in Psychopathology of Communication, Hoch, P. and Zubin, J. eds., Grune & Stratton, (Kahn, R.L. and Fink, M.)
2. Lateral Gaze Nystagmus as an Index of Sedation Threshold, EEG. Clin. Neurophysiol. 10: 162-163 (Fink, M.).
3. Effect of Diethazine on EEG and Significance for Theory of Convulsive Therapy, EEG. Clin. Neurophysiol. 10: 207-208 (abst.) (Fink, M.).
4. Experimental Studies of the Electroshock Process, Dis. Nerv. Syst. 19: 113-118 (Fink, M. and Kahn, R.L.).
5. Comparative Study of Chlorpromazine and Insulin Coma Therapy of Psychosis, J.A.M.A. 166: 1846-1850 (Fink, M., Shaw, R., Gross, G. and Coleman, F.C.).
6. Electroencephalographic Correlates of the Electroshock Process, Dis. Nerv. Syst. 19: 227 (Abst.) (Fink, M. and Green, M.).
7. Language of the Dyad, Psychiatry 21: 249-258 (Jaffe, J.).
8. Clinical and EEG. Effects of Megimide in Patients without Cerebral Disease, Neurology 8: 682-685 (Green, M. and Fink, M.)
9. Effect of Anticholinergic Agent, Diethazine, on EEG and Behavior, A.M.A. Arch. Neurol. & Psych. 80: 380-388, (Fink, M.).
10. Experimental Studies of Convulsive and Drug Therapies on Psychiatry: Theoretical Implications, A.M.A. Arch. Neurol. & Psych. 80: 733-734 (Abst.) (Fink, M., Kahn, R.L. and Green, M.).
11. Brain Damage, Mental Retardation and Childhood Schizophrenia, Am. J. Psychiat. 115: 422-428 (Pollack, M.).
12. Oculomotor and Postural Patterns in Schizophrenic Children, A.M.A. Arch. Neurol. & Psychiat. 79: 720-726 (Pollack, M. and Krieger, H.P.).
13. Interpersonal Factors in Denial of Illness, A.M.A. Arch. Neurol. & Psychiat. 80: 653-656 (Jaffe, J. and Slote, W.H.).

14. Predictions of Outcome, in Youthful Offenders at Highfields, Weeks, H. Ashley, ed. U. of Michigan Press, Ann Arbor (N. Siegel).

B. Presentations:

1. EEG Correlates of the Electroshock Process, at the Eastern Psychiatric Research Association, February, N.Y. (Fink, M. and Green, M.A.).
2. Significance of Individual Variability in EEG Changes During Electroshock Therapy, at Eastern Association of Electroencephalographers, March, Montreal, (Green, M.A.).
3. Experimental Studies of Convulsive and Drug Therapies in Psychiatry: Theoretical Implications, at Neurological Society and New York Society of Clinical Psychiatry, March, N.Y. (Fink, M., Kahn, R.L. and Green, M.A.).
4. Visual Perception and Attention in Normal and Abnormal Children, at American Orthopsychiatric Association, March, N.Y. (Pollack, M.).
5. Communication Patterns with Altered Brain Function, at Eastern Psychological Association, April, Philadelphia (Jaffe, J., Kahn, R.L. and Fink, M.).
6. The Relation of F Score to Behavioral and Physiological Response with Altered Brain Function, at Eastern Psychological Association, April, Philadelphia, (Kahn, R.L. and Fink, M.)
7. Intellectual Deficits in Patients with Space Occupying Lesions of the Cerebrum, at Eastern Psychological Association, April, Philadelphia (Pollack, M., Battersby, W.S., Kahn, R.L. and Bender, M.B.).
8. Intensity of Stimulation and Perception of Simultaneous Stimuli in Cerebral Dysfunction, at Eastern Psychological Association, April, Philadelphia (Korin, H.).

9. Socio-Psychological Aspects of Diagnosis and Treatment: Theoretical Implications, Symposium - Eastern Psychological Association, April, Philadelphia, (Kahn, R.L. and Pollack, M.).
10. Drug Induced Changes in Interview Patterns, at Conference on Psychodynamic, Psychoanalytic, and Sociologic Aspects of the Neuroleptic (tranquilizing) Drugs in Psychiatry, April, Montreal (Fink, M. and Jaffe, J.).
11. Psychological Factors Affecting Individual Differences in Behavioral Response to Convulsive Therapy, at American Psychiatric Association, May, San Francisco (Fink, M., Kahn, R.L. and Pollack, M.).
12. Prognostic Value of Rorschach Criteria in Clinical Response to Convulsive Therapy, at Electroshock Research Association, May, San Francisco (Kahn, R.L. and Fink, M.).
13. Effects of Anticholinergic Agent, Diethazine, on EEG and Behavior: Significance for Theory of Convulsive Therapy, at Society of Biological Psychiatry, May, San Francisco (Fink, M.).
14. Social Factors in Selection of Therapy in a Voluntary Mental Hospital, at American Psychiatric Association, May, San Francisco (Kahn, R.L. and Pollack, M.)
15. A Critique of "Pre-Conscious" Perception and the "Poetzl Phenomenon," at American Psychiatric Association, May, San Francisco (Pollack, M.).
16. Role of EEG Frequency Shift in Behavioral Effects of Drugs, at Section on Neurol. & Psychiat. Queens County Medical Society, June, N.Y. (Fink, M.).
17. Effect of Anticholinergic Compounds on Post Convulsive EEG and Behavior, American EEG Society, June, Atlantic City (Fink, M.).
18. EEG and Behavioral Effects of Psychopharmacologic Agents, at Collegium Internationale Neuro-Psycho Pharmacologicum, September, Rome, and Eastern Association of Electroencephalographers, December, N.Y. (Fink, M.).
19. Prognostic Application of Psychological Techniques in Convulsive Therapy, at Eastern Psychiatric Research Association, October, N.Y. (Kahn, R.L. and Pollack, M.).
20. Relationship between Seizure Threshold and Duration of Seizures to EEG Change During Electroshock, at Eastern Association of Electroencephalographers, December, New York (M.Green).

almost as well as if he could see. Here he climbs the school steps with his typewriter to attend a class.

MD Records Brain Waves Of Patients

A history written in brain waves is telling the story today of how successfully the mentally ill are responding to electro-shock and drug treatments.

Dr. Max Fink, a Great Neck psychiatrist who gave up a profitable private practice to "prospect for facts", has developed a method of evaluating the brain waves of patients at Hillside Hospital, Glen Oaks, where he's been leading an eight-man research team for four years.

The brain wave "history", recorded on graph paper and transmitted by an electro-encephalogram, enables the hospital's staff to "treat patients with more direction", Fink says.

It works this way:

The encephalogram picks up brain waves of a new patient and records a "base line" on the graph.

As the patient is treated and repeatedly tested the variations are recorded on the graph. Comparisons show whether a patient is . . . or isn't . . . responding to a drug or shock treatment.

* * *

"THE STUDY gives a new and keener sense of direction in treating the patients," Fink said.

For example: If a patient's brain wave "history" shows that his response to a treatment is suddenly

10/10/50

lagging, the treatment may be increased in frequency or dosage until improvement is shown on the graph.

A patient whose condition indicates there has been a cessation of improvement, or whose condition begins to regress back to its original form, may get a completely new treatment to try and check the regression.

"In short," Dr. Fink said, "the brain wave study allows us to utilize our treatments better."

Before Dr. Fink's brain wave method was adopted and used at the hospital, only "about 50 per cent" of the patients who required drug or shock treatments recovered sufficiently to be released from the hospital. The percentage has jumped to "approximately 80 per cent now," Fink says.

SO FAR the new method is used only at Hillside where the \$100,000-a-year research project has produced "very good returns," Fink said. The project is jointly supported by medical foundations and the hospital.

During the last few months Dr. Fink's research team has come up with clues that help determine whether a mental patient will stay out of the hospital when released into the world of stress and strain that put him into an institution in the first place.

"We have found certain chemicals that can temporarily reverse the progress we have made with a patient," the Great Neck psychiatrist said.

He explained that the degree to which a patient resists the chemical induction to become mentally sick again "is a very strong clue to whether he is really cured."

File Copy

February 25, 1959.

Department of Experimental Psychiatry

Annual Report - 1958

During 1958, the major emphasis of the staff of the Department of Experimental Psychiatry shifted from evaluation of convulsive therapy to systematic investigations of newer psychopharmacologic agents. These investigations, derived from the successful evaluations of the mode of action of convulsive therapy (1954-1958), reserpine (1955), and chlorpromazine and insulin coma (1956-1957), are based on the neurophysiologic-adaptive hypothesis of physiodynamic therapies developed in the Department in 1957 (J. Hillside Hosp. 6: 197-206). The interrelationship of the neurophysiologic effects of the many new compounds with the psychodynamic, perceptual, personality and sociologic aspects of patients' behavior provide the framework for these investigations. In addition, linguistic indices developed in the Department during the past two years by Drs. Kahn and Jaffe are being studied as measures both of behavioral change and of neurophysiologic effect.

During the year, the evaluation of convulsive therapies was continued by comparing the effects of indoklon, an inhalant convulsant, with electroconvulsive therapy. This study was undertaken by two senior resident psychiatrists, B. Alan and H. Lefkowitz, and Drs. Green and Fink. While indoklon therapy was a successful treatment, technical **limitations** made it a poor substitute for the established electrical methods. The study was of theoretic value in indicating that the significant element of convulsive therapy was the induction of the grand mal convulsion, with its attendant neurophysiologic effects, independent of the type of agent employed.

Investigations into the relations of sociologic factors to the selection of therapies at Hillside Hospital were extended by Drs. Kahn and Pollack. Not only were the factors of age, education, birthplace, and score on the California F Scale significantly related to the choice of therapy but these factors were also related to the results of therapy, the diagnosis and the duration of hospitalization. These observations were presented in the Sunday Conference of October 16, 1958. On October 7 the study was repeated; and similar studies of the population of other primarily psychotherapeutic hospitals, and the Hillside Hospital Out-Patient Department were undertaken. To augment these studies, Dr. Nathaniel Siegel was appointed as Research Associate in Sociology, with the support of a grant from the Mental Health Board of Nassau County.

In an extension of the communication studies, both the syntactic content analysis and dyadic diversification measures of formal aspects of speech were applied to an evaluation of the changes in language patterns following the acute administration of various new psychotropic compounds. These measures demonstrated consistent changes both with the induced behavioral and the neurophysiologic effects of the drugs.

The acute drug interviews were but one aspect of the continuing evaluation of the biochemistry of convulsive therapy. Previous studies had indicated that repeated induced convulsions resulted in an increased level of central nervous system acetylcholine activity. By the acute administration of various ^{experimental} ~~tertiary-amine~~ anticholinergic compounds to patients at various stages of convulsive therapy we elucidated the synaptic chemical events which are the basis of the convulsive therapy process.

In addition, Mr. Karp and Drs. Kahn and Pollack continued their perceptual studies in patients receiving psychodynamic therapies. The interrelation of psychotherapy with physiodynamic therapy was studied by Drs. Esecover, Jaffe and Kahn; and in the latter part of the year, Drs. A. Kaplan and H. Lefkowitz began an investigation into the interpersonal factors in therapists, as well as patients, leading to the referral for psychodynamic therapies.

During the year, Dr. H. Korin resigned, and was replaced by Mr. Eric Karp. Two new staff appointments include Dr. Nathaniel Siegel, Assistant Professor of Sociology at Columbia University, as Research Associate in Sociology; and Dr. Donald Klein, research scientist at Creedmoor Institute candidate at the New York Psychoanalytic Institute, as Research Associate in Psychiatry.

Support for this extensive program was provided by the Board of Directors, and continuing grants of the Foundations' Fund for Research in Psychiatry and the National Institute of Mental Health. At year end, this program received considerable support from the Psychopharmacology Service Center of the National Institute of Mental Health, which augmented its already extensive commitment by a grant of \$268,000. These sums were further increased during the year by support from the Mental Health Board of Nassau County which provided funds for sociologic studies; and from Bristol, Geigy, Smith, Kline & French, and Wyeth Laboratories - who aided the drug evaluation program by grants as well as extensive supplies of the agents to be studied.

During the year, fourteen reports of the work of staff members appeared; and twenty reports were presented to major professional societies.

In addition to national societies, work of the Department was presented at the Conference on Psychodynamic, Psychoanalytic and Sociologic Aspects of Neuroleptic Drugs in Montreal, and the International Congress of Neuro-psychopharmacology in Rome.

Staff members were awarded two prizes. Dr. M. Fink received the first annual A.E. Bennett Psychiatric Research Award of the Society of Biologic Psychiatry for his report on the effects of anticholinergic agents on EEG and behavior. Dr. J. Jaffe received the Gralnick Foundation annual award for his report on the application of analysis of changes in formal aspects of speech in psychotherapy.

The staff of the Department of Experimental Psychiatry included, at year end:

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Donald F. Klein, M.D.	Research Associate (Psychiatry)
Robert L. Kahn, Ph.D.	Research Associate (Experimental Psychology)
Max Pollack, Ph.D.	Research Associate (Experimental Psychology)
Nathaniel Siegel, Ph.D.	Research Associate (Sociology)
Eric Karp, B.A.	Research Assistant (Experimental Psychology)
Martin A. Green, M.D.	Associate in Research (Neurophysiology)
Abraham A. Kaplan, M.D.	Associate in Research (Psychiatry)
Barre Alan, M.D.	Fellow (1957-58)
Henry Lefkowitz, M.D.	Fellow (1958-59)

The technical staff included Mrs. Janet Bowie, Jean Kolodny, Hannah Mosquera and Blanche Zaitz.

Addendum: In February Dr. George Krauthamer, Ph.D. was appointed as Research Assistant (Experimental Psychology). He is a trainee in electroencephalography.

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HILLSIDE HOSPITAL
Glen Oaks, New York

March 16, 1959

MEMO TO RESEARCH COMMITTEE

FROM: JOSEPH S.A. MILLER, M.D., MEDICAL DIRECTOR

RE: ATTACHED RESEARCH REPORT

I am herewith enclosing copy of Dr. Fink's report, sending it a few days in advance of the meeting, so that you might familiarize yourself with some of the main facts and be in a better position to discuss this when it is presented at the forthcoming meeting on March 25th.

February 25, 1959.

Department of Experimental Psychiatry

Annual Report - 1958

During 1958, the major emphasis of the staff of the Department of Experimental Psychiatry shifted from evaluation of convulsive therapy to systematic investigations of newer psychopharmacologic agents. These investigations, derived from the successful evaluations of the mode of action of convulsive therapy (1954-1958), reserpine (1955), and chlorpromazine and insulin coma (1956-1957), are based on the neurophysiologic-adaptive hypothesis of physiodynamic therapies developed in the Department in 1957 (J. Hillside Hosp. 6: 197-206). The interrelationship of the neurophysiologic effects of the many new compounds with the psychodynamic, perceptual, personality and sociologic aspects of patients' behavior provide the framework for these investigations. In addition, linguistic indices developed in the Department during the past two years by Drs. Kahn and Jaffe are being studied as measures both of behavioral change and of neurophysiologic effect.

During the year, the evaluation of convulsive therapies was continued by comparing the effects of indoklon, an inhalant convulsant, with electroconvulsive therapy. This study was undertaken by two senior resident psychiatrists, B. Alan and H. Lefkowitz, and Drs. Green and Fink. While indoklon therapy was a successful treatment, technical limitations made it a poor substitute for the established electrical methods. The study was of theoretic value in indicating that the significant element of convulsive therapy was the induction of the grand mal convulsion, with its attendant neurophysiologic effects, independent of the type of agent employed.

Investigations into the relations of sociologic factors to the selection of therapies at Hillside Hospital were extended by Drs. Kahn and Pollack. Not only were the factors of age, education, birthplace, and score on the California F Scale significantly related to the choice of therapy but these factors were also related to the results of therapy, the diagnosis and the duration of hospitalization. These observations were presented in the Sunday Conference of October 16, 1958. On October 7 the study was repeated; and similar studies of the population of other primarily psychotherapeutic hospitals, and the Hillside Hospital Out-Patient Department were undertaken. To augment these studies, Dr. Nathaniel Siegel was appointed as Research Associate in Sociology, with the support of a grant from the Mental Health Board of Nassau County.

In an extension of the communication studies, both the syntactic content analysis and dyadic diversification measures of formal aspects of speech were applied to an evaluation of the changes in language patterns following the acute administration of various new psychotropic compounds. These measures demonstrated consistent changes both with the induced behavioral and the neurophysiologic effects of the drugs.

The acute drug interviews were but one aspect of the continuing evaluation of the biochemistry of convulsive therapy. Previous studies had indicated that repeated induced convulsions resulted in an increased level of central nervous system acetylcholine activity. By the acute administration of various tertiary-amine anticholinergic compounds to patients at various stages of convulsive therapy we elucidated the synaptic chemical events which are the basis of the convulsive therapy process.

In addition, Mr. Karp and Drs. Kahn and Pollack continued their perceptual studies in patients receiving psychodynamic therapies. The interrelation of psychotherapy with physiodynamic therapy was studied by Drs. Esecover, Jaffe and Kahn; and in the latter part of the year, Drs. A. Kaplan and H. Lefkowitz began an investigation into the interpersonal factors in therapists, as well as patients, leading to the referral for physiodynamic therapies.

During the year, Dr. H. Korin resigned, and was replaced by Mr. Eric Karp. Two new staff appointments include Dr. Nathaniel Siegel, Assistant Professor of Sociology at Columbia University, as Research Associate in Sociology; and Dr. Donald Klein, research scientist at Creedmoor Institute candidate at the New York Psychoanalytic Institute, as Research Associate in Psychiatry.

Support for this extensive program was provided by the Board of Directors, and continuing grants of the Foundations' Fund for Research in Psychiatry and the National Institute of Mental Health. At year end, this program received considerable support from the Psychopharmacology Service Center of the National Institute of Mental Health, which augmented its already extensive commitment by a grant of \$268,000. These sums were further increased during the year by support from the Mental Health Board of Nassau County which provided funds for sociologic studies; and from Bristol, Geigy, Smith, Kline & French, and Wyeth Laboratories - who aided the drug evaluation program by grants as well as extensive supplies of the agents to be studied.

During the year, fourteen reports of the work of staff members appeared; and twenty reports were presented to major professional societies.

In addition to national societies, work of the Department was presented at the Conference on Psychodynamic, Psychoanalytic and Sociologic Aspects of Neuroleptic Drugs in Montreal, and the International Congress of Neuro-psychopharmacology in Rome.

Staff members were awarded two prizes. Dr. M. Fink received the first annual A.E. Bennett Psychiatric Research Award of the Society of Biologic Psychiatry for his report on the effects of anticholinergic agents on EEG and behavior. Dr. J. Jaffe received the Gralnick Foundation annual award for his report on the application of analysis of changes in formal aspects of speech in psychotherapy.

The staff of the Department of Experimental Psychiatry included, at year end:

Max Fink, M.D.	Director
Joseph Jaffe, M.D.	Research Associate (Psychiatry)
Donald F. Klein, M.D.	Research Associate (Psychiatry)
Robert L. Kahn, Ph.D.	Research Associate (Experimental Psychology)
Max Pollack, Ph.D.	Research Associate (Experimental Psychology)
Nathaniel Siegel, Ph.D.	Research Associate (Sociology)
Eric Karp, B.A.	Research Assistant (Experimental Psychology)
Martin A. Green, M.D.	Associate in Research (Neurophysiology)
Abraham A. Kaplan, M.D.	Associate in Research (Psychiatry)
Barre Alan, M.D.	Fellow (1957-58)
Henry Lefkowitz, M.D.	Fellow (1958-59)

The technical staff included Mrs. Janet Bowie, Jean Kolodny, Hannah Mosquera and Blanche Zaitz.

Addendum: In February Dr. George Krauthamer, Ph.D. was appointed as Research Assistant (Experimental Psychology). He is a trainee in electroencephalography.

1/15/59

Department of Experimental Psychiatry

Following is a chronologic list of the presentations and publications of the members of the Department of Experimental Psychiatry during 1958.

A. Publications:

1. Changes in Language During Electroshock Therapy, in Psychopathology of Communication, Hoch, P. and Zubin, J. eds., Grune & Stratton, (Kahn, R.L. and Fink, M.)
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September 1, 1959

FINAL REPORT

USPHS M-927

Department of Experimental Psychiatry

HILLSIDE HOSPITAL
Glen Oaks, L. I., N. Y.

1. Acknowledgment
2. Summary #4, February 1, 1959 - September 1, 1959
3. Summary, Five Years, 1954 - 1959
4. Publications, 1954 - 1959
5. Presentations, 1954 - 1959
6. Summary #1, September 1, 1954 - January 1, 1956
7. Summary #2, January 1, 1956 - April 1, 1957
8. Summary #3, April 1, 1957 - February 1, 1958

Principal Investigator

Max Fink, M.D.

Research Associates (Experimental Psychology)

Robert L. Kahn, Ph.D. 1954 -
Hyman Korin, Ph.D. 1954-1958
Eric Karp, M.A. 1958 -

Research Associates (Neurophysiology)

Martin A. Green, M.D. 1956 -
George Krauthamer, Ph.D. 1959 -

EEG Technician

Hanna Mosquera

Secretary

Janet Bowie

Associates, supported through other grants:

Research Associate (Experimental Psychol.)	Max Pollack, Ph.D.	1957 -
Research Associate (Psychiatry)	Joseph Jaffe, M.D.	1956 -
Research Associate (Psychiatry)	Donald F. Klein, M.D.	1959 -
Research Associate (Sociology)	Nathaniel Siegel, Ph.D.	1958 -

Acknowledgment

The studies reported here would not have been possible without the interest and support of the Founder of Hillside Hospital, Dr. Israel Strauss, the Board of Directors and the Administrator, Mr. Maurice Bachrach, whose faith sustained this program during its early vicissitudes.

We are also indebted to the Kaufmann and Dazian Foundations of New York, the Foundations' Fund for Research in Psychiatry, the Mental Health Board of Nassau County and the following pharmaceutical firms: Smith, Kline and French Laboratories, Wyeth Laboratories, Geigy Pharmaceuticals, and Bristol Laboratories, whose support is gratefully acknowledged.

SUMMARY

1954 - 1959

The laboratories of the Department of Experimental Psychiatry were established at Hillside Hospital in September, 1954. During this five year period neurophysiologic, psychologic (personality and perceptual), linguistic, and sociologic aspects of "somatic" psychiatric therapies have been the principal foci.

1. Convulsive Therapy:

The view of the convulsive therapy process as the induction of a non-specific state of altered brain function, similar to craniocerebral trauma was supported and amplified (10, 11, 21). Within this altered cerebral milieu, subjects were seen to respond in various ways (26), of which the most "successful" was explicit verbal denial (7, 31). This latter adaptation was most prominent in characterologically disposed individuals (36).

An alteration in brain function was pre-requisite to behavioral change (7, 8, 11, 26). Grand mal seizures were essential to this process (26) but electrical induction was not (B-42). The alterations in brain function were measured in various ways including electroencephalography (6, 11, 12, 24, 39), language patterns (4, 7, 14, 31, 43; B-24), perceptual tasks (2, 16, 17, 37, 46; B-26, 41, 42) and tests of recall (8).

Reference numbers are to publications or presentations (B-) listed in the appendix.

A variety of behavioral changes were seen during convulsive therapy (26; B-17). Such patterns were viewed as adaptations to altered brain function, and were believed dependent upon characterologic and environmental factors (7, 25, 26, 36, 40). Clinical ratings of improvement were seen as value judgments by the observer of the behavioral changes in the subject (26). Adaptations characterized by denial mechanisms, both in behavior (B-17) and in language (7, 31) were assessed with the best ratings of improvement. Such adaptations were related to habitual modes of conduct (character, personality) (36; B-11, 32).

unclear

The ^{persistence} durability of the altered behavioral modes was noted as dependent upon the degree and duration of altered brain function, the environmental expectations, and the type and degree of family and medical support. Different behavioral patterns were best supported by varying types of psychotherapy (19).

It was ~~also~~ suggested that the neurophysiological basis of convulsive therapy may lie in an alteration in central synaptic cholinergic - adrenergic relationships, with a predominant shift to increased cholinergic activity as the operationally significant pattern. Such interpretations were based on the relationship of high voltage EEG slow wave activity to behavioral change (6, 11, 26) and the blocking of post-convulsive electrographic and behavioral changes by central anticholinergic agents (21, 34, 35, 41, 42) and by central sympathomimetic agents (42).

out of context

place this P at beginning, e.g. after line 3, P 3, pg. 1 or make it P 4, pg 3. perhaps even under neurophysiologic hypothesis

Measures of linguistic behavior in structured (7, 31) and unstructured (14, 29; B-24) interviews showed characteristic alterations towards increased denial, minimization, displacement, stereotypy and repetitiveness, related to the degree of altered brain function (B-24). These changes were blocked or reversed by anticholinergic hallucinogens (21, 43).

Various perceptual tasks provided indices of behavioral change and were related to the degree of altered brain function. These included the perception of simultaneous tactile stimuli (17), embedded (Gottschaldt) figures (37; B-16), and tachistoscopically exposed words (37) and embedded color figures (41).

Sociopsychologic aspects of age, years of education, nativity and degree of stereotypy and conventionality (measured by California F Scale) were related to selection of therapy, duration of hospitalization, a diagnosis and treatment response in hospitalized patients (15, 36, 40, 45).

2. Neurophysiologic-Adaptive Hypothesis of Somatic Therapy.

Based on these studies, a hypothesis of the mode of action of other psychiatric therapies such as insulin coma, leucotomy and psychotropic drugs, was expressed (10, 33, 38). This view holds that the efficacy of these therapies depends upon the induction of states of altered brain function, in which varying adaptive patterns may become prominent. The adaptive pattern is related to the type, degree and duration of altered brain function, the personality of the subject, and tolerances and expectations of the environment.

Examination of this hypothesis as applied to drug therapies is now in progress, supported by USPHS grants MY-2092 and MY-2715.

3. Insulin Coma Therapy.

An initial case study showed the significance both of denial patterns and persistent altered brain function for the behavioral change in insulin coma therapy (3).

In an insulin coma - chlorpromazine control study, no differences in hospital improvement ratings were observed in the two treatment groups (27). Chlorpromazine was safer, easier to administer, permitted continued administration and allowed for greater degrees of concurrent relationship therapy than insulin coma. These observations led to a replacement of insulin coma by psychotropic drugs in this institution.

4. Pharmacotherapy.

The ongoing program in evaluating various psychopharmaceuticals is derived from these hypotheses. Electrographic and linguistic analyses of effects of acute intravenous administration and chronic clinical administration of various new compounds are in progress. EEG patterns, along such continua as synchronization-desynchronization and frequency shift are being related to behavioral (21, 34, 41, 42) and linguistic changes (21, 43).

The neurophysiologic basis of experimentally induced hallucinogenic states have also been interpreted as an alteration in synaptic chemical relations, such that the effective levels of cholinergic activity is decreased (42). Initial work on this hypothesis (21, 42) is now being expanded.

Should put in a note on perceptual + motor techniques?

ANNUAL REPORT

1959

The study program in the Department of Experimental Psychiatry increasingly focussed on the drug treatment process. Based on an extensive experience with newer drugs for mental illness, a detailed drug evaluation study was undertaken in the Fall. The selection of treatment, and behavioral, psychiatric, psychologic, neurophysiologic and sociologic aspects of change are investigated. These examinations are undertaken to learn how drugs influence mentally ill patients, and tests a theory developed in this Department in 1956. In this theory, drugs are seen to affect behavior by both changing brain function and the psychologic attitudes of subjects.

In the experimental psychology studies, increasing emphasis has been placed on individual differences in perceptual and cognitive behavior as related to the type of behavioral response with treatment. Study of these indices as predictors of change in addition to the usual use as indices of the effects of the treatment has demonstrated significant relationships. The experimental tasks under study include critical flicker fusion, perception of the upright, auditory feedback, and various motor tasks.

The introduction of an electronic frequency analyzer of the Ulett-Loeffel type in August 1959 - a device to rapidly measure the various electrical waves recorded from the brain - significantly expanded the

the electroencephalographic program. An analysis of changes in the various patterns in the EEG made possible the critical and more precise determination of neurophysiologic effects of various drugs. During the year 404 records were recorded, and of these, 59 were clinical consultation requests.

The sociologic programs undertook an analysis of the differences in attitude to treatment of the various staff groups, as the resident doctors, nurses, social workers, etc.; tolerance of the staff for different types of emotional upset and referral for somatic treatment; and changes in the Hillside Hospital patient population between 1957 and 1959. In order to understand the relation of social factors and the treatment of mental illness, an elaborate tri-hospital study comparing sociologic characteristics, treatment referral rates and discharge ratings in the Menninger Foundation, the Massachusetts Mental Health Center and Hillside Hospitals was begun.

In language studies, an area that is receiving increased attention in psychiatry, the staff organized and participated in a unique seminar at the N. Y. Divisional Meeting of the American Psychiatric Association. Various psycholinguistic experts analyzed two tapes of an analytic treatment, employing their individual methods of study, and compared their results. They showed the value of combined methods in providing an objective measure of the psychotherapy process.

Eighteen reports were published during the year and eleven papers presented before the national societies. The staff was instrumental in the organization of the New York Divisional Meeting of the American

Psychiatric Association, as well as presenting reports at four of its symposia. The staff also participated in the International Conference on Depression and Allied States held in March in Montreal.

Changes in staff during the year included the appointment of George Krauthamer, Ph.D. as neurophysiologist, and Donald F. Klein, M.D. as psychiatrist to the Department. Dr. Robert L. Kahn, after five years service, left to assume the position of Head of the Section of Psychology, Division of Psychiatry of Montefiore Hospital. Dr. Joseph Jaffe, while continuing as an Associate in Research in this Department, assumed the position of Faculty Member and Associate Director of Research of the William Alanson White Institute.

Continuing support for the program was obtained from the Board of Directors, extensive program support from the National Institute of Mental Health of the United States Public Health Service, and grants from the Mental Health Board of Nassau County.

Department of Experimental Psychiatry

Staff - 1959

Max Fink, M.D.	Director
Donald F. Klein, M.D.	Research Associate (Psychiatry)
Robert L. Kahn, Ph.D.	Senior Research Associate (Experimental Psychology)
Max Pollack, Ph.D.	Research Associate (Experimental Psychology)
Nathaniel H. Siegel, Ph.D.	Research Associate (Sociology)
George Krauthamer, Ph.D.	Research Assistant (Neurophysiology)
Eric Karp, B.A.	Research Assistant (Experimental Psychology)
Joseph Jaffe, M.D.	Associate in Research (Psychiatry)
Martin A. Green, M.D.	Associate in Research (Neurophysiology)
Abraham A. Kaplan, M.D.	Associate in Research (Psychiatry)
Henry A. Lefkowitz, M.D.	Fellow (1958 - 1959)
John Kramer, M.D.	Fellow (1959 - 1960)
Technical Staff	Mrs. Janet Bowie
	" Jean Kolodny
	" Hannah Mosquera
	" Charlotte Sinovoi

Hillside Hospital

Department of Experimental Psychiatry

Following is a chronologic list of the presentations and publications of the members of the Department of Experimental Psychiatry during 1959.

A. Publications:

1. Effect of an Anticholinergic Agent, Diethazine, on EEG and Behavior: Significance for Theory of Convulsive Therapy. Biological Psychiatry, ed. Masserman, J., Grune & Stratton, N. Y. pp. 184-194 (Fink, M.).
2. Alteration of Brain Function in Therapy. Psychopharmacology Frontiers, ed. Kline, N., Little, Brown & Co., Boston, pp. 325-332 (Fink, M.).
3. Significance of EEG Pattern Changes in Psychopharmacology. EEG Clin. Neurophysiol. 2: 398 (abst.) (Fink, M.).
4. Effect of Electroconvulsive Therapy on Intractable Pain. A.M.A. Arch. Neurol. and Psychiat. 81: 37-42 (Weinstein, E. A., Kahn, R. L., and Bergman, P.).
5. Electroencephalographic and Behavioral Effects of Tofranil. Canad. Psych. Assoc. J. 4: 166S-171S (Fink, M.).
6. Psychological Factors Affecting Individual Differences in Behavioral Response to Convulsive Therapy, J.N.M.D. 128: 243-248 (Fink, M., Kahn, R. L., and Pollack, M.).
7. Effects of Diffuse Altered Brain Function on Perception. Proc. XV Int. Cong. Psychol., Publ. North-Holland, Amsterdam, pp. 238-239 (Fink, M., Kahn, R. L., and Korin, H.).
8. Complex Visual Perception in Patients with Brain Tumor. Proc. XV Int. Cong. Psychol., Publ. North-Holland, Amsterdam, pp. 236-237 (Bender, M. B., Battersby, W. S., and Pollack, M.).

9. Therapy of Schizophrenia: Role of Alteration of Brain Function on Behavior, Congress Reports, II Int. Cong. Psychiatry, II: 492-493 (Abst.) (Fink, M., Kahn, R. L., and Korin, H.).
10. Relationship of Threshold and Duration of Seizures to Degree of EEG Delta Activity Induced During Electroshock, EEG. Clin. Neurophysiol. 2: 399 (Abst.) (Green, M.).
11. Prognostic Application of Psychological Techniques in Convulsive Therapy, Dis. Nerv. Sys. 20: 180-184 (Kahn, R. L. and Pollack, M.).
12. Communication Networks in Freud's Interview Technique, Psych. Quat. 32: 456-473 (Jaffe, J.).
13. Sociopsychologic Aspects of Psychiatric Treatment in a Voluntary Mental Hospital: Duration of Hospitalization, Discharge Ratings and Diagnosis, A.M.A. Arch. Gen. Psychiat. 1: 565-574 (Kahn, R. L., Pollack, M., and Fink, M.).
14. The Role of Set in the Perception of Simultaneous Tactile Stimuli, Am. Jour. Psychol. 72: 384-392 (Korin, H. and Fink, M.).
15. Form Perception Across Sensory Modalities, Am. Psychol. 14: 396 (Abst.) (Krauthamer, G.).
16. Relation of Tests of Altered Brain Function to Behavioral Change Following Induced Convulsions, The First International Congress of Neurological Sciences (III: EEG, Clinical Neurophysiology and Epilepsy), Pergamon, London, pp. 613-619 (Fink, M., Kahn, R.L., and Korin, H.).
17. Personality Factors in Behavioral Response to Electroshock Therapy, J. Neuropsychiatry 1: 45-49 (Kahn, R. L. and Fink, M.).
18. Symbolic Reorganization in Brain Injuries, in Handbook of Psychiatry, ed. Arieti, S., Basic Books, N. Y., Vol. I, pp. 964-981 (Weinstein, E. A. and Kahn, R. L.).

B. Presentations:

1. EEG and Behavioral Effects of Tofranil, International Conference on Depression and Allied States, Montreal (Fink, M.).
2. Sociopsychologic Factors Affecting Therapist-Patient Relationships, American Academy of Psychoanalysis, Philadelphia (Kahn, R.L.).
3. Effect of Induced Cerebral Dysfunction in Man on Tachistoscopic Perception of Embedded Color Figures, Eastern Psychologic Association, Atlantic City (Pollack, M.).
4. Behavioral Changes with Different Methods of Induced Cerebral Dysfunction, Eastern Psychological Association, Atlantic City (Karp, E.).
5. Sociopsychologic Aspects of Psychiatric Treatment, Eastern Psychological Association, Atlantic City (Kahn, R. L.).
6. Language Patterns as Measures of Behavioral and Neurophysiologic Change, American Psychiatric Association, Philadelphia (Fink, M.).
7. Personality Correlates of EEG, Metropolitan EEG Society, New York (Krauthamer, G.).
8. Relation of Social Attitude to Psychiatric Treatment, N. Y. Divisional Meeting, A.P.A., New York (Kahn, R.L.).
9. Comparison of Intellectual Functioning in Childhood, Adolescent and Adult Schizophrenics, N. Y. Divisional Meeting, A.P.A., New York (Pollack, M.).
10. Symposium on "Psycholinguistic Analysis of the Psychiatric Interview", N. Y. Divisional Meeting, A.P.A., New York (Jaffe, J.).
11. Social Background and the Doctor-Patient Relationship, Acad. Psychoanalysis, New York (Jaffe, J.).

Hillside Hospital

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