

Pioneer-Scientist: In Honor of Max Fink

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Jason A Hannah Professor of the History of Medicine
Professor of Psychiatry
Faculty of Medicine, University of Toronto
ISEN lecture, 4 May 2014

Max Fink's contributions

- The key is that Max thinks of psychiatry as a scientific field with the same evidentiary requirements and progress through hypothesis-construction that characterizes the rest of medicine. Just as we speak of medical science, we may also speak of “psychiatric science.” Max is one of many investigators in psychiatry who have pursued this science. But he has made a special impact.

Max Fink's contributions

- 1. Use of the “medical model” in nosology: catatonia, melancholia, hebephrenia.
- 2. The agency in convulsive therapy is the cerebral convulsion, not necessarily the electricity.
- 3. But, as things now stand, ECT is the most powerful treatment that psychiatry has to offer. Max has argued forcefully for this viewpoint since the early 1970s, and it is partially thanks to these efforts that ECT has been rescued from oblivion.

Max was born Jan 16, 1923, in Vienna.

"All the News That's Fit to Print."

The New York Times.

THE WEATHER

NEW YORK, WEDNESDAY, JANUARY 16, 1935

2 LARGEST COPPER MINES MINGLED IN SIBERIAN TRAGEDY

Associated Press. First American Prospector, Acquainted of His Mine, Has Been Killed in Siberia.

TO GOVERN SIBIRIAN COPPER MINES

WASHINGTON, Jan. 15.—The United States government today announced that it had taken possession of the two largest copper mines in Siberia, which were the scene of a tragedy in which an American prospector and his party were killed.

CENSURE OF GRANT BY BISHOP AWAITED

Dr. Gardner-Lewis Hints to New Yorker Meeting on a Possible Rebuke.

ST. STEPHEN'S

NEW YORK, Jan. 15.—The Rev. Dr. Gardner-Lewis, rector of St. Stephen's Episcopal church, today hinted that he might rebuke the Rev. Dr. Grant, who is expected to deliver the invocation at the funeral of the late President Grant, which will be held in the city tomorrow.

KING'S SECOND SON ENGAGED TO MARRY LADY E. BOWEN-LYON

Lord's Deputy Announces Betrothal at Date of York to Sussex Train's Departure.

LOUK INTERESTED IN LADY

NEW YORK, Jan. 15.—The betrothal of the second son of King George VI, Prince Albert, to Lady E. Bowen-Lyon, was announced today by the king's deputy, Lord Gort, at the date of the York to Sussex train's departure.

FRENCH TAKE MORE TOWNS, FIRE ON MOB AT BOCHUM; BERLIN'S DICTUM NOW, NO COAL EVEN IF PAID FOR; MEMEL TAKEN FROM FRENCH GUARD BY LITHUANIANS

And French Government to Withdraw of Force

BOCHUM, Jan. 15.—The French government today announced that it had taken possession of more towns in the Ruhr region, and that it had fired on a mob at Bochum. The government also announced that it had received a dictum from Berlin stating that no coal would be supplied to the French, even if it were paid for. Finally, the government announced that it had taken possession of Memel from the Lithuanian guard.

LIBYANS FORCE BRIDGE AND TROOPS SHOOT INTO THE CITY

FRANCIS TONK WHITE FLAG

ROME, Jan. 15.—The Italian government today announced that it had received news from Tripoli that the Libyans had forced a bridge and troops had shot into the city. The government also announced that Francis Tonk had raised a white flag.

FRENCH TO RESORT TO REQUISITIONS

FOR RUBBER TAP ON RUBBER TREE

PARIS, Jan. 15.—The French government today announced that it was considering resorting to requisitions for rubber tapping on rubber trees in the Congo.

GERMAN MARKS NOW 14,000 TO DOLLAR

Reichsbank Level Eye Set on Rise in Rate with London Exchange

BERLIN, Jan. 15.—The Reichsbank today announced that it was considering a rise in the rate of exchange of the German mark with the London pound.

HEAVY SELLING BY RESERVE

All American Warship Prices are Lowered by 15 to 20 Per Cent

NEW YORK, Jan. 15.—The prices of American warships were lowered today by 15 to 20 per cent, according to a report from the War Department.

DEMOCRATS OF ALBANY ATTACK DAY LOAN; MOVE TO ASH CONGRESS TO LIBERALIZE IT

ALBANY, N. Y., Jan. 15.—The Democrats of Albany today attacked the day loan and moved to ash Congress to liberalize it.

Very few people today even know what these events are, they were so long ago, and last January Max turned 91.



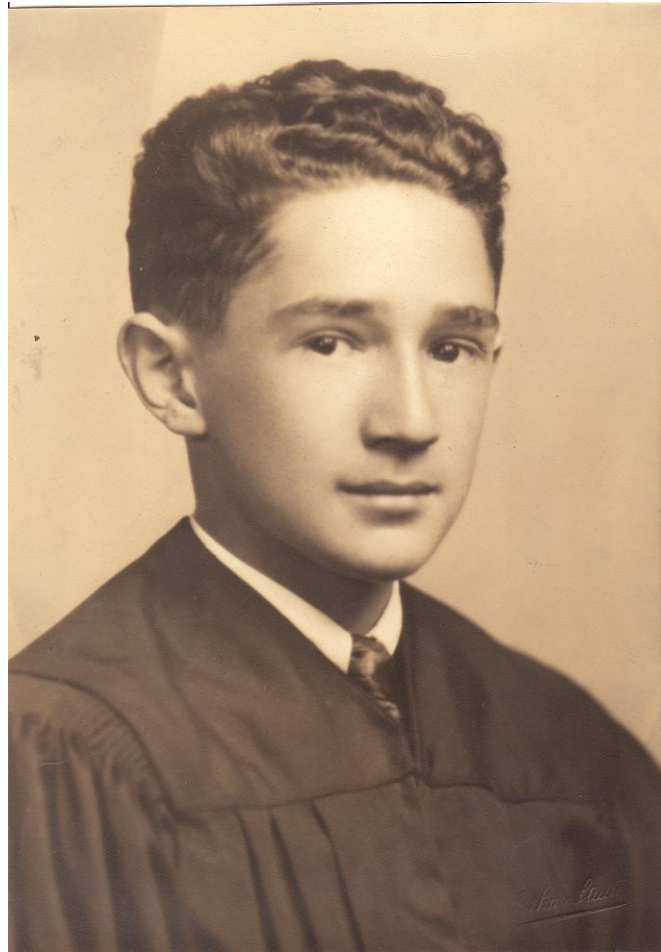
The French in the Rhineland may have been forgotten . . .

. . . But Max's parents Julius and Bronia haven't been forgotten!

[on the left]



Max grew up in the Bronx and graduated from high school in 1939.



**He got an MD degree from
New York University College
of Medicine in 1945 at age
23.**

Then he went to sea . . .

Ship surgeon, Grace Line,
1948



In the meantime, he did other things too.

This is widely unknown. He trained in psychoanalysis and qualified in 1953 as an analyst at the William Alanson White Institute. This is Maximilian's first article.

J Hillside Hosp, 2 (1953)

CLINICAL CONFERENCE¹

HOMOSEXUALITY WITH PANIC AND PARANOID STATE

CASE PRESENTATION BY MAXIMILIAN FINK, M.D.

Presenting Problem

We are concerned today with a twenty-six-year-old married man who is suffering from acute recurrent episodes of anxiety during the past three years. Descriptively the illness is paranoid schizophrenia. He has been able to express his problems in many ways, and we are interested today in the origins of his illness; the variety of the symptomatology; and in the therapeutic management.

Present Illness

For the past few years the patient has been suffering acute episodes of panic, which have become progressively more frequent and more incapacitating. During such episodes he is tense, fearful, paces about. He complains of palpitations, of shortness of breath and head throbbing. He obtains some relief by destroying objects or something in himself. In such attacks he frequently destroys his dental bridge or his eyeglasses or he may shave his mustache. He also obtains relief by masturbation.

The initial panic occurred during the patient's courtship on the occasion of his introduction to his fiancée's family in 1948. It made him feel

Soon, however, Max was ensnared by the lure of biology . . .

. . . And in 1951 he began a residency in neurology and psychiatry at Bellevue, in 1952 in psychiatry at Hillside Hospital in Glen Oaks, Long Island.

Max spent ten years at Hillside, becoming in 1954 director of research in the Department of Experimental Psychiatry at Hillside.

Here, Max put insulin coma treatment (ICT) to death. This is the study that demonstrated CPZ was just as effective and much safer. ICT was soon abandoned everywhere.

1846

Vol. 166

J.A.M.A., April 12, 1958

COMPARATIVE STUDY OF CHLORPROMAZINE AND INSULIN
COMA IN THERAPY OF PSYCHOSIS

Max Fink, M.D., Robert Shaw, M.D., George E. Gross, M.D.

and

Frederick S. Coleman, M.D., Glen Oaks, N. Y.

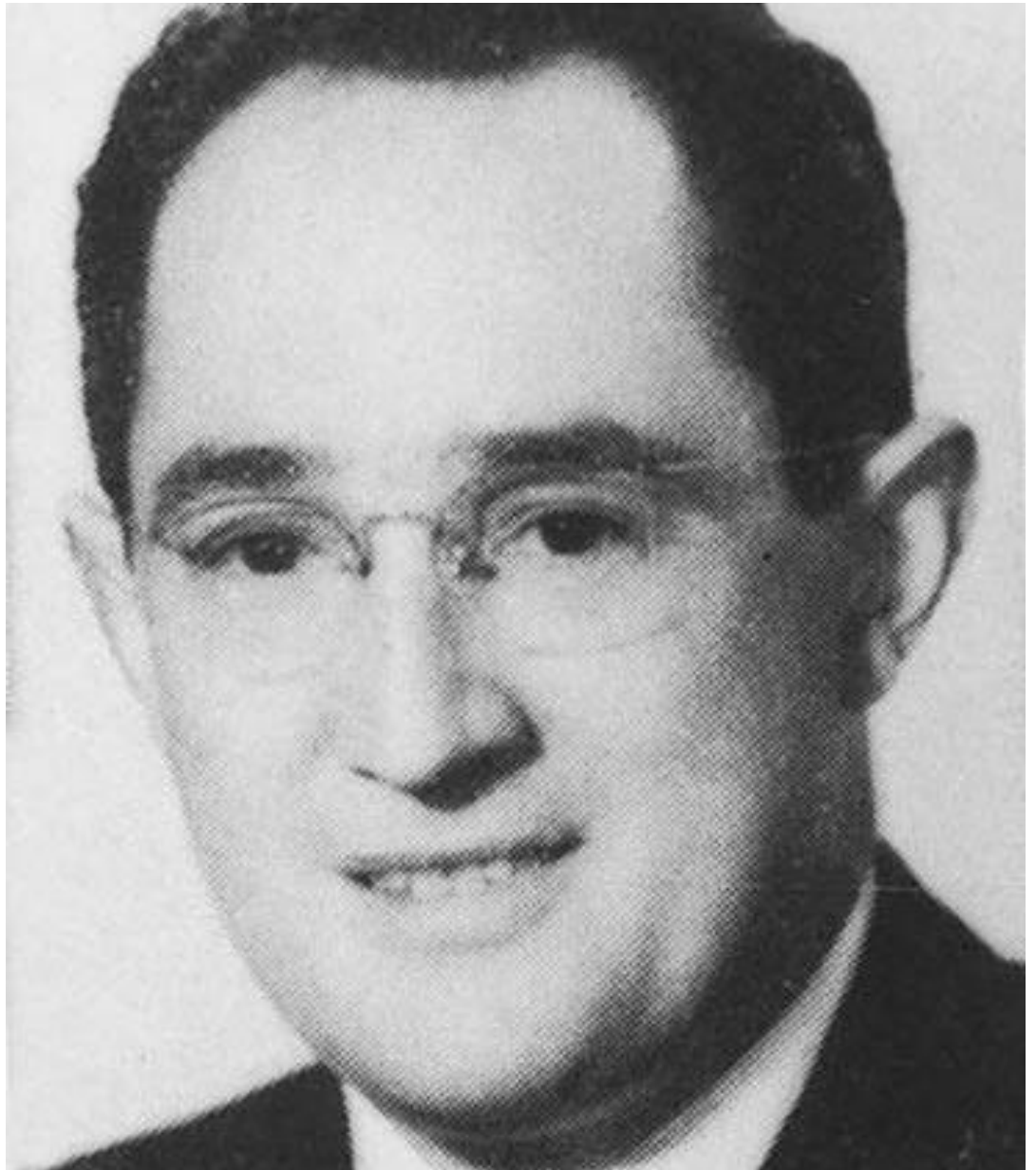
With the advent of "newer" drugs for the treatment of psychiatric illnesses and the concomitant awareness that the effectiveness of insulin coma therapy was limited, a control drug therapy-insulin coma study was undertaken. Preliminary trials with various medicaments available in 1954 demonstrated

The effectiveness of chlorpromazine was compared with that of insulin coma in 60 patients referred for insulin coma therapy. One-half the group, selected on a random basis,

**These early years saw
Max's great involvement
in clinical science.**

Specifically in EEG.

[Here is Dr Fink at the
Second World Congress of
Biological Psychiatry in
Zurich in 1957.]



At Hillside there were important findings in biological psychiatry.

(1) Max headed the ECT service, and here, in connection with psychologist Robert Kahn and others, he reported that greater degrees of EEG slowing were associated with greater improvement (no slowing, no recovery).

AMA Archives of Neurology & Psychiatry 78 (1957)

Relation of Electroencephalographic Delta Activity to Behavioral Response in Electroshock

Quantitative Serial Studies

MAX FINK, M.D., and ROBERT L. KAHN, Ph.D., Glen Oaks, N. Y.

Recent theories of electroshock therapy¹⁻³ have emphasized the role of neurophysiologic changes as the basis for the therapeutic action of electroshock. Consistent with these theories, we have observed a relation between changes in certain measures of brain function and behavioral response. We have noted that evaluations of clinical improvement following electroshock are related to changes in orientation and confabulation after intravenous amobarbital,⁴ learning and recall,⁵ and syntactical aspects of language.⁶

In view of these observations, it could be expected that electroencephalographic studies would show a similar relationship. Numerous

graphic effects usually disappear in the four to eight weeks following the last treatment.^{8,9}

In contrast to the consistency of these observations, studies of the relationship between the electroencephalographic and the clinical changes show conflicting results. Chusid and Pacella,¹⁵ after an extensive review of the literature, concluded that the number of treatments rather than the degree of induced delta activity, was the primary factor related to a favorable therapeutic response. On the other hand, Hoagland et al.¹⁶ reported a relation between changes in the percent time fast activity (more than 13 cps) and independent clinical ratings of be-

Important findings at Hillside (2)

With Max's student Don Klein, the initiation of drug studies began as a "pharmacological torch," to identify specific treatment responses. . Klein, Robert Kahn and Max organized an RCT – one of the earliest in psychiatry – of CPZ, imipramine, and placebo. From this trial, Don Klein pursued the notion of panic disorder as a distinctive entity separate from anxiety because of its distinctive response to imipramine.

A 58, 119 (1962), 432-438

PSYCHIATRIC REACTION PATTERNS TO IMIPRAMINE¹

DONALD F. KLEIN, M.D.,² AND MAX FINK, M.D.³

Clinical psychiatric experience demonstrates a wide range of variation in behavioral responses to physiological therapies. Present techniques of evaluating therapies by global improvement scores, imprecise diagnostic classification, and target symptoms abstracted from their context were felt to be methodologically inadequate. Following our experience in describing the behavioral reaction patterns to convulsive (4) and phenothiazine(6) therapies, a similar analysis of the data derived from imipramine (Tofranil) therapy was undertaken.

In this report various patterns of behavioral response to imipramine are de-

justment. In biweekly conferences with the psychiatric resident and his supervisor the patient's progress in psychotherapy, affective and symptomatic state, utilization of hospital facilities, and social and familial relationships are discussed.

When it was evident that the standard diagnostic nomenclature was of little use in categorizing behavioral reactions to drugs, and that psychodynamic formulations lacked predictive clarity, it was decided to derive a descriptive behavioral typology for each agent studied. The detailed longitudinal research records were reviewed and a summary statement concerning the patient's behavioral reaction

Donald Klein

As many of you will know him. I don't have a photo of the earlier years (but would welcome one).



Science at Hillside (3)

Yet there was one false start. In 1961 Max, Robert Kahn and collaborators assessed the efficacy of an anesthetic gas, flurothyl, in the treatment of depression. Flurothyl was a convulsive agent. But, in 1961, before the rise of antipsychiatry and the anti-ECT movement, they decided that it offered no particular benefit.

As Max said later, "Alas, my conclusion to discard flurothyl was an error." It was an error because it offered a means of inducing seizures without electricity.

But who could have known then what stigma ECT was about to undergo.

INDOKLON[®]

(FLUROTHYL)

(bis (2, 2, 2-trifluoroethyl) ether)

a more effective form of treatment for some

"It is felt that the greater effectiveness of Indoklon may be due to its effect on the entire brain, whereas electroshock therapy probably affects only the cerebral cortex." (1)

a preferred treatment to electroshock for many

"In all cases, ready acceptance of the treatments was a characteristic feature. This was marked in those patients who feared and resisted electrotherapy." (2)

INDOKLON pharmacoconvulsive therapy has been used since 1956. An alternate to electroshock in the treatment of mental illness, administration of Indoklon is by inhalation. Seizures modified by anesthetics and muscle relaxants are soft and free of fractures. Indoklon is dependable in producing grand mal seizures. Late convulsion, common to some pharmacoconvulsive agents, is not present. Write for Brochure No. 8180 and complete article reprints No's. 390 and 391—see references (1) and (2) — Ohio Chemical (a division of Air Reduction Company, Inc.) Madison, Wis. 53701.

Contraindications for Indoklon are similar to those for electroshock therapy. Indoklon should not be given to a patient with even a very mild upper respiratory infection. Indoklon should not be given to any patient with severe cardiovascular, hepatic, or renal disease. Indoklon should not be given to any patient with severe intraocular or intraspinal increase in pressure. Patients with abnormal body temperatures should be temporarily excluded from Indoklon therapy until the temperature returns to normal. Indoklon is not to be used with pregnant females. For information on use and dosage, refer to detailed instructions contained in product package. **Compatibilities** — no known incompatibilities with Indoklon have been reported.

References: (1) Karlisner, Wm.: Observations on the Use of Indoklon (accepted for publication April, 1964, by JOURNAL OF NEUROPSYCHIATRY). (2) Freund, J. D.; Warren F. Z.: A Clinical Impression of Hexafluoro-diethyl Ether (Indoklon) following more than 800 treatments, DISEASES OF THE NERVOUS SYSTEM, Vol. 25, pp. 56-57, (January, 1965).


Ohio Chemical



Science in Missouri

In 1962 Max and Martha left New York to found the Missouri Institute of Psychiatry in St. Louis.

The scientific attainment of these years was the development, with Turan Itil, of pharmaco-EEG.

Here are Max, Charlie Shagass and Turan Itil in St Louis.



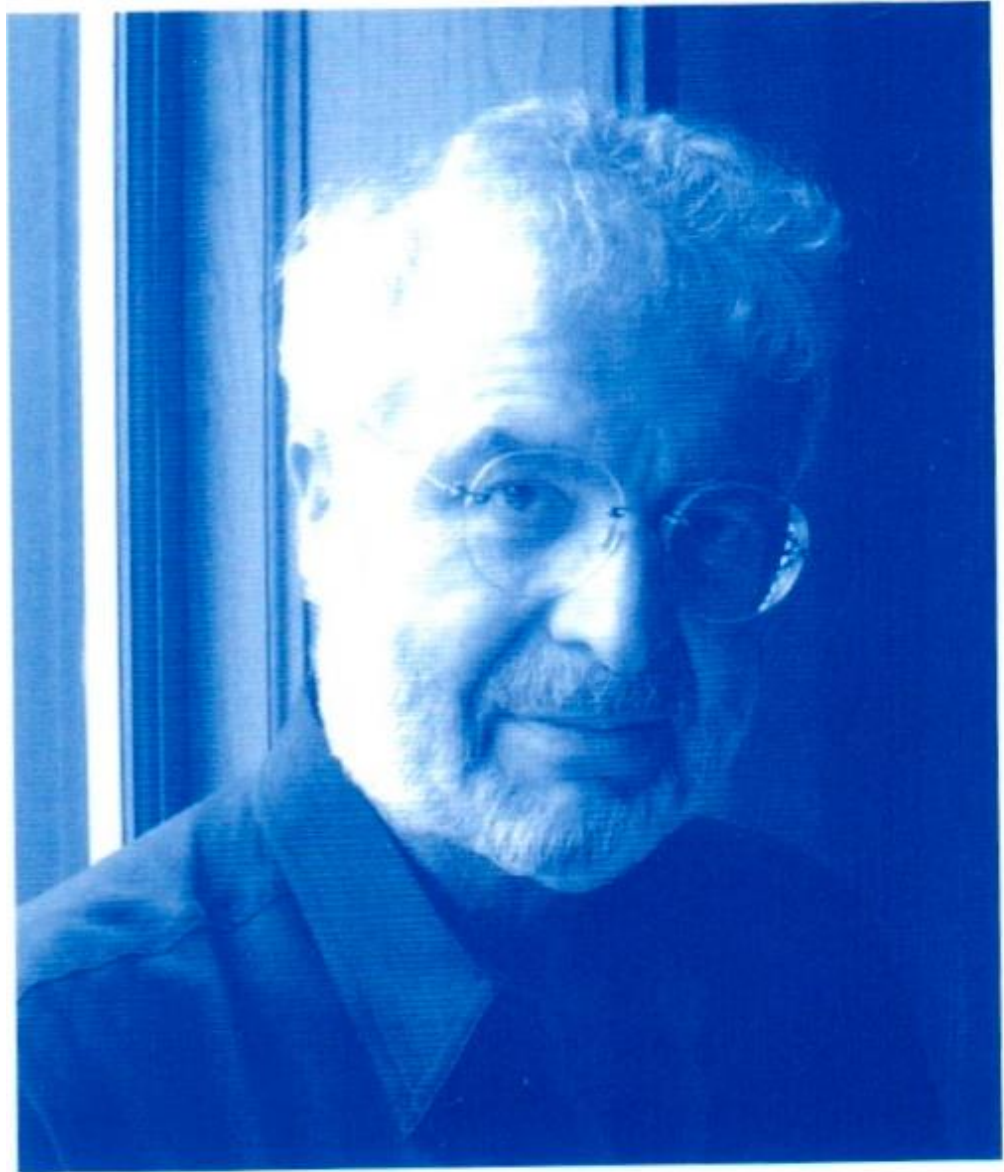
Here are Turan, Max, and Ellen Itil at the CINP in Florence in 1984.

By 1984 Max was back in New York, and pharmaco-EEG remained a promising concept that the pharmaceutical industry, enraptured with neurotransmitters, never really developed.



When Max returned to New York in 1966 he began to work, at Metropolitan Hospital, with the resident Richard Abrams.

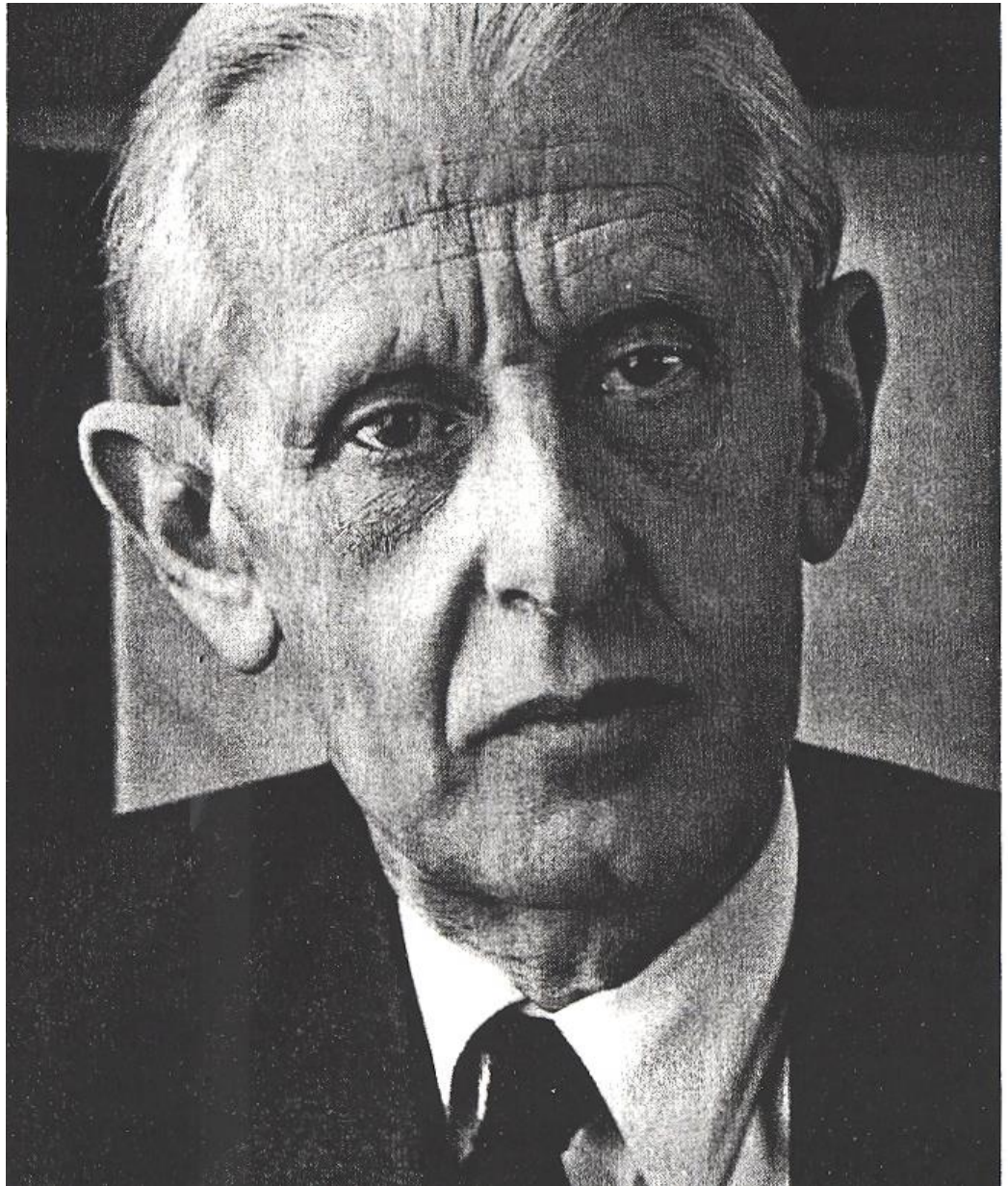
Dick Abrams had been interested in assessing the efficacy of right unilateral electrode placement in ECT. Fink and Abrams' report showed less benefit with RUL than with bilateral electrode placement.



And this is how Max became interested in ECT.

In Manhattan in those years there was a whole world of ECT. The patron of this world was Lothar Kalinowsky.

An intense scientific community developed around convulsive therapy, at the same time as the anti-ECT movement accelerated in the general culture. After “One Flew Over the Cuckoo’s Nest” (movie 1975) ECT became badly stigmatized.



The world of ECT in New York

Here are Max, Barry Reisman and Robert Levine at APA in 1978; Levine and Reisberg were also residents at Metropolitan Hospital.

This became the core group from which ECT in the United States rebounded.



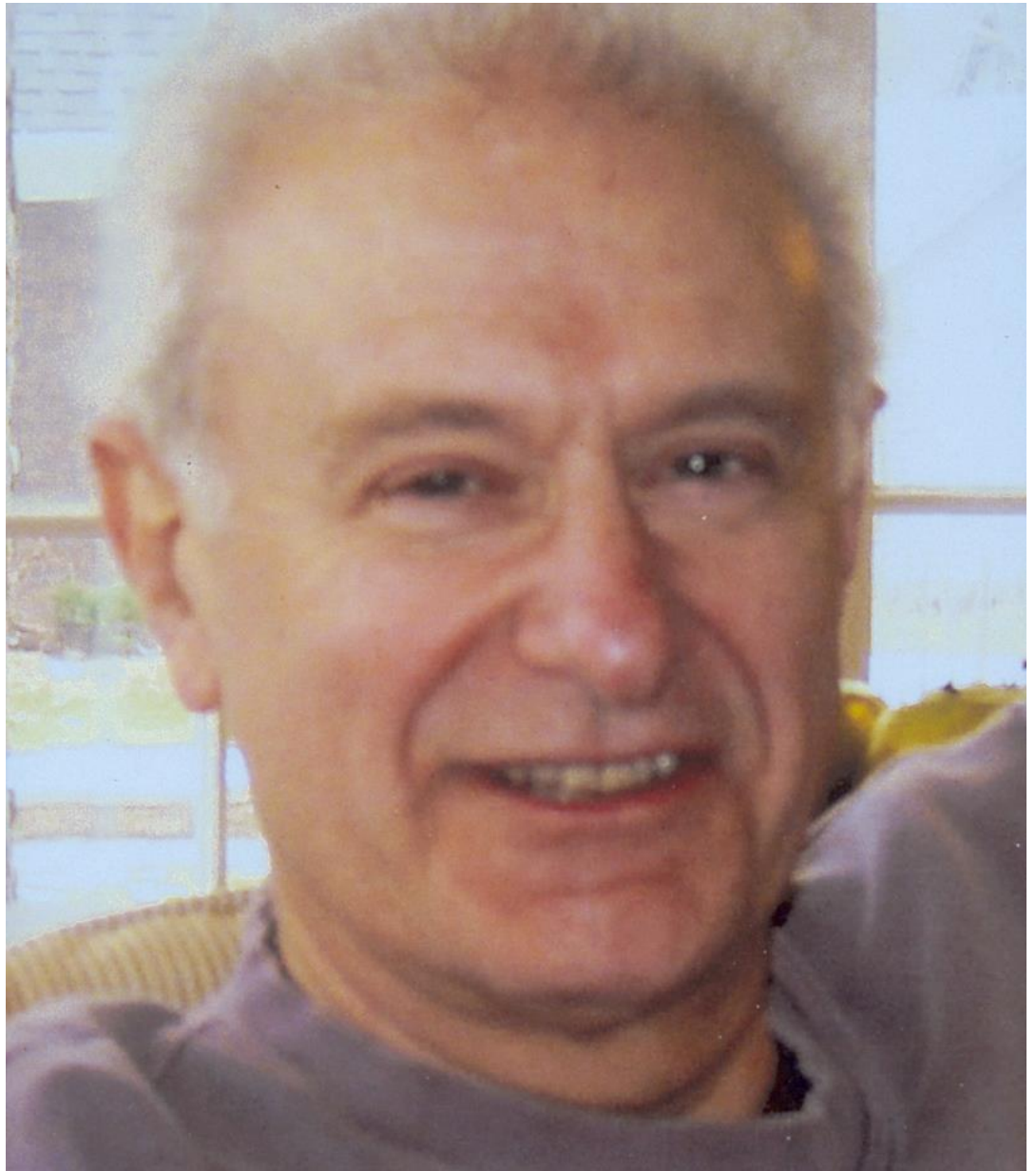
The New York ECT world

Another member of this effervescent ECT world was the resident Michael Alan (Mickey) Taylor.

In 1976 the team of Fink, Abrams and Taylor made their first ECT report: on the neurochemical effects of convulsive treatment.

Biol Psych, 11 (1976).

Abrams and Taylor went on to form a remarkable team of collaborators.



The struggle to save convulsive therapy

By the mid-1970s, ECT was under severe attack (“burns brains,” “total memory loss” etc).

In 1975 Max was appointed to the APA’s first task force on ECT. The report in 1978 supported the efficacy of ECT and recommended its continued use despite public antipathy.

This was the first in a long series of efforts to save ECT from the antipsychiatry movement, the Church of Scientology, and the pharmaceutical industry.

ELECTROCONVULSIVE THERAPY

Report of the Task Force on Electroconvulsive Therapy
of the American Psychiatric Association

Fred H. Frankel, M.B.Ch.B., D.P.M. Chairperson
T. George Bidder, M.D.
Max Fink, M.D.
Michel R. Mandel, M.D.
Iver F. Small, M.D.
George J. Wayne, Ph.D., M.D.
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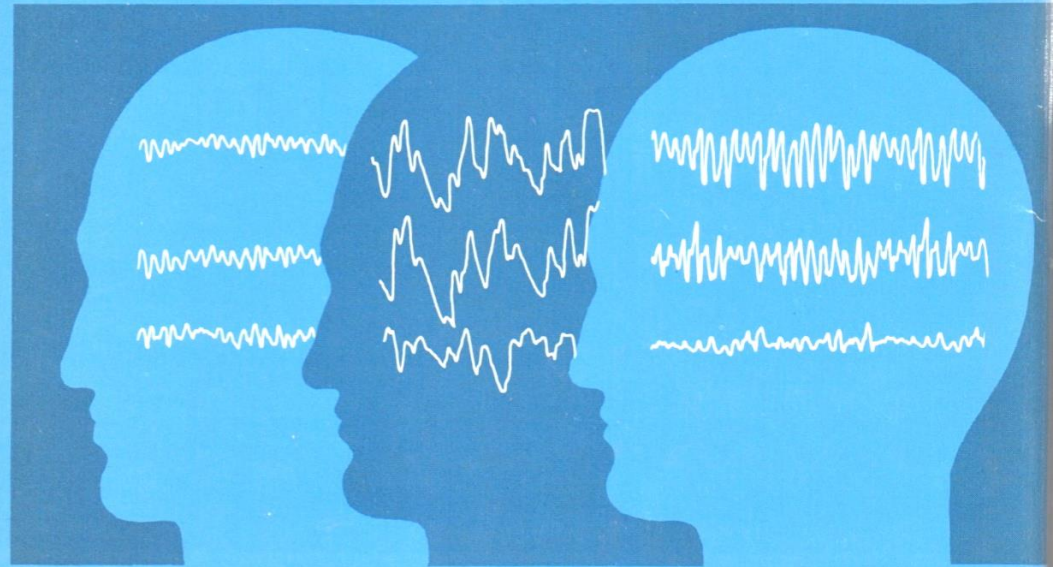
AMERICAN PSYCHIATRIC ASSOCIATION
1700 18th Street, N.W.
Washington, D.C. 20009

The struggle . . .

Max was so irritated with ignorance about ECT within APA that he decided to write his own book. In 1979 he published the first modern manual for the use of ECT.

Therapy: Theory and Practice

Max Fink, M.D.



The struggle to save convulsive therapy: a new journal

Some background: In 1976 the International Psychiatric Association for the Advancement of Electrotherapy (IPAAE) was formed, to fight the anti-ECT legislation in California.

In 1986 the IPAAE changed its name to the Association for Convulsive Therapy. Max had founded an ECT journal, *Convulsive Therapy*, in 1984, and in 1986 CT became the official organ of ACT.

Max served as editor of CT until 1994. The rest is history.

Party to celebrate founding of CT a decade earlier at Harold Sackeim's.



ECT "Victory Party" (1994): Guests at a party thrown by New York psychologist and ECT specialist Harold Sackeim at his home in honor of Max Fink, celebrating the founding of the journal *Convulsive Therapy*. Left to right: Matthew Rudorfer, Benjamin Lerer, Tom Bolwig, Max Fink, Harold Sackeim, John Mann, Charles Kellner, George Alexopoulos, Edward Coffey, Richard Weiner, and Robert Greenberg. Courtesy of Max Fink.

But how did ECT work? Back to basic science.

In 1980 Max and Swedish neuroscientist Jan-Otto Ottosson proposed a neuroendocrine theory. Today, this is still the best guess about what happens in ECT.

Fink, Ottosson, *Psychiatric Research*, 2 (1980), 49-61.

[Here are Max and Jan-Otto in 2010, along with a young psychiatric nurse-practitioner.]



RUL vs BT: putting the controversy to rest

The “memory loss, memory loss” mantra of the 1980s and -90s made increasingly urgent a trial to determine which was safer and more effective. In the mid-1990s NIMH supported two study programs, the CORE study under Fink, Rummans, Rush, and Kellner (BT), and the Columbia University Consortium (RUL).

The New York site was moved from Stony Brook to Long Island Jewish/Hillside under George Petrides.

Fink: “The results showed the clinical inefficacy of RUL. The CORE study of electrode placement in depression showed the greater efficacy of BT.”

(Fink, CORE review, APS, 2014)

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ACTA PSYCHIATRICA SCANDINAVICA

Review

What was learned: studies by the consortium for research in ECT (CORE) 1997–2011

Fink M. What was learned: studies by the consortium for research in ECT (CORE) 1997–2011.

Objective: To review the findings of the four-hospital collaborative studies of electroconvulsive therapy (ECT) in unipolar depressed patients known as CORE between 1997 and 2011. Unipolar depressed patients were treated with bilateral ECT, and on remission were randomly assigned to a fixed schedule continuation ECT or to combined lithium and nortriptyline for 6 months. A second study compared three electrode placements in unipolar and bipolar depressed patients.

M. Fink

Departments of Psychiatry and Neurology, Stony Brook University, Long Island, NY, USA

I asked Max, what do you think the impact of your ECT work has been?

- “If I had to summarize my work in convulsive therapy, it is the early recognition that the clinical benefits of induced seizures were great.”
- “That the anti-ECT postures of psychiatrists, psychologists and the public were unjustified and dangerous to patient care.”
- “And that induced seizures are a remarkable and effective treatment; comparable in medicine to the introduction of penicillin in neurosyphilis, when applied efficiently.”

Let's shift gears from ECT to nosology.

- In 1972 Max became a professor of psychiatry and neurology at the State University of New York campus at Stony Brook.

Melancholia and catatonia

- At Stony Brook Max's interests shifted to nosology, partly because melancholia and catatonia were so responsive to convulsive therapy.

Melancholia is among the oldest diseases in psychiatry.



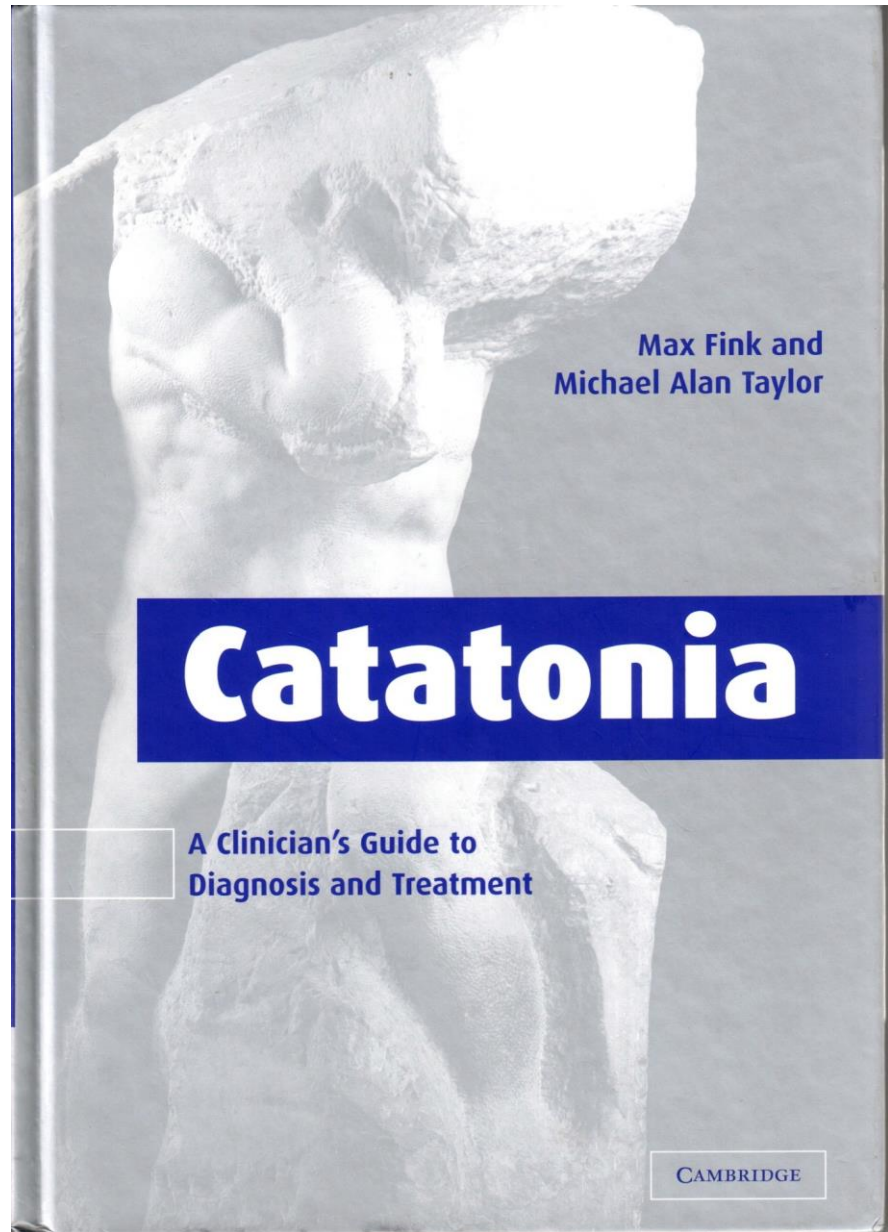
The term catatonia was coined only in 1874 – but the symptoms are as old as the hills.



Fig. 191. — Demenza precocissima o prepuberale a forma ebefrenico-catatonica, in fanciulla undicenne eredo-psicopatica; inizio della psicosi all'età di anni 8. La fot. rappresenta la malata in atteggiamenti catalettici.

In 2003 Max and Mickey Taylor wrote the definitive guide to catatonia.

After a great struggle, Max succeeded in getting catatonia into DSM-5 as something other than a schizophrenia subtype.



In 2006 Mickey Taylor and Max Fink wrote the definitive guide to melancholia.

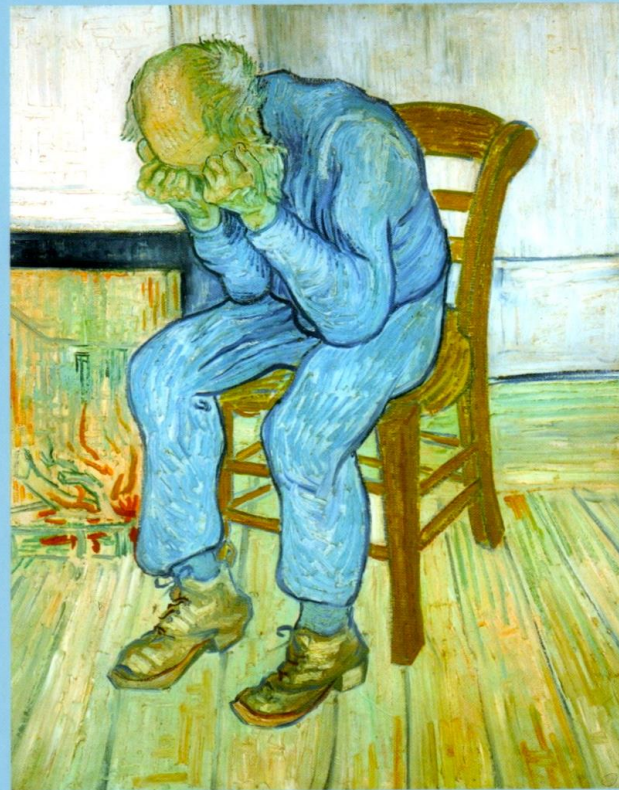
Alas, the book did not have a big impact, at least not on APA. Melancholia remains a poorly used “specifier” of “major depression.”

But outside DSM, a revival of melancholia scholarship is going on – and that revival is partly Max’s work.

Look at this next slide.

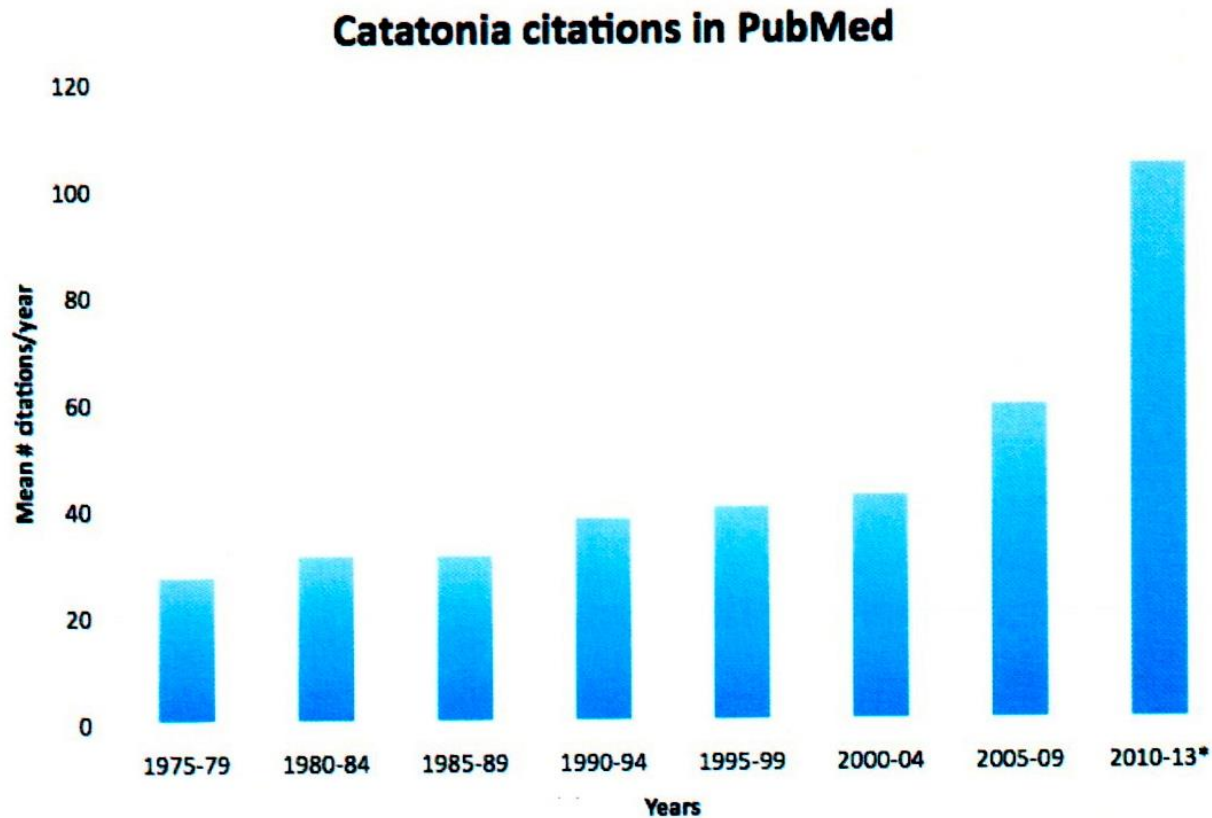
Melancholia

The Diagnosis, Pathophysiology, and Treatment of Depressive Illness



Michael Alan Taylor M.D. and Max Fink M.D.

Catatonia citations in Pub Med, 1975-2013: a real revival



**A conference in Copenhagen
in 2006 gave melancholia a
considerable boost.**

Here is Max with Jules
Angst, David Healy, and
Hagop Akiskal.



What does the future hold in store?



Flurothyl is back!

Psychiatric Times

Revive Flurothyl Inhalation Therapy

Published on Psychiatric Times

(<http://www.psychiatrictimes.com>)

Revive Flurothyl Inhalation Therapy

March 19, 2014 | [Electroconvulsive Therapy](#) [1], [Major Depressive Disorder](#) [2], [Psychopharmacology](#) [3] By [Max Fink, MD](#) [4] and [Edward Shorter, PhD](#) [5]

A reexamination of flurothyl infusions holds promise for improved resolution of severe mood disorders, as well as for a greater understanding of the mechanism of their pathophysiology.

Source:

A Hollywood movie almost killed an important psychiatric treatment. After clinicians and members of the public saw the film *One Flew Over the Cuckoo's Nest*, which premiered in 1975, many swore “never again.” The fantasy bore no relationship to the actual conduct of an effective psychiatric treatment, yet almost wrote its death warrant.

Years later we are still dealing with the fallout from that fantasy. Although many clinicians have accepted ECT, the public harbors the image of Jack Nicholson being forcibly subjected to treatment without his informed consent, and they do not wish this for one of their family members. As a consequence, serious cases of depression, mania, and catatonia—unresolved by medications and psychotherapies—are haphazardly denied evidence-based treatment.

The revival of ECT continues: now big in Europe . . .

. . . Where ECT was previously seen as
the devil's work.

Max was instrumental in launching
EFFECT in 2006.

[Here with Tom Bolwig and other
European founders.

Max is wearing his trademark
turquoise sweater . . .



Melancholia is motoring forward!

Here is Max at the 2006 conference in Copenhagen on melancholia. The proceedings of the conference in the APS have been read with great interest.



So, Max Fink, at 91, full speed ahead!



Standing applause!