

Collated
December 29, 2016

BARRY BLACKWELL: HEINZ EDGAR LEHMANN

Collated Document

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This collated document includes Barry Blackwell's biography of Heinz Edgar Lehmann and the exchange that followed.

Five (six) participants exchanged a total of seven postings, including three postings by Barry Blackwell, and one posting each by Per Bech, Paul Grof, Irwin Kopin, and Mary and Philip Seeman.

This collated document is now open for a final comment to all INHN members.

Barry Blackwell	November 5, 2015	Heinz Edgar Lehmann (biography)
Mary and Philip Seeman	January 28, 2015	comment
Barry Blackwell	April 7 2016	reply to Mary and Philip Seeman
Per Bech	February 4, 2016	comment
Irwin J. Kopin	February 4,2016	comment
Paul Grof	June 23, 2016	comment
Barry Blackwell	June 23, 2016	reply to Paul Grof

Barry Blackwell: Heinz Edgar Lehmann

Heinz Lehmann is the third member of a triumvirate of pioneers whose early work with chlorpromazine set the world stage for an end to centuries of asylum care for people suffering severe and persistent mental illness. In France, Jean Delay's team reported its beneficial effects in "*des etats d'exitation et d'agitation*" (Delay, Deniker and Harl, 1952). This effect was

confirmed in Britain two years later by Joel Elkes and his wife in an early controlled double blind study on “*chronically active psychotic patients*” (Elkes and Elkes, 1954). Canadian psychiatrist Heinz Lehmann provided the first independent confirmation in North America as “*a new inhibiting agent for psychomotor excitation and manic states.*” (Lehmann and Hanrahan, 1954).

This brief biography of Heinz Lehmann, compiled from multiple personal and published sources, sets the stage by describing the beginnings of the revolution in psychopharmacology, followed by an account of Heinz’s early life and persona, leading to an overview of his entire life and career accomplishments as a clinician, educator, researcher and a reluctant but talented administrator.

In the beginning ...

In 1937, at age 26, a refugee from Nazi Germany, Heinz Lehmann spent a year at the Montreal Children’s Hospital, Canada where he perfected his English before becoming a junior psychiatrist at Verdun Protestant Hospital in Montreal, Canada on the eve of World War II; one of four fellow physicians who provided the medical, surgical and psychiatric care to 1500 patients, on call every third night. In 1947, he became Clinical Director and by 1954, he had a well established reputation in biological research with over twenty publications in leading medical and psychiatric journals.

Throughout this time he lived on the grounds of the hospital, in close proximity to his patients, with his wife Annette, a nurse at the hospital and their young son Francois, born in 1944. The only treatments available were largely ineffective; François, in first grade and on his way to school, could look toward the women’s pavilion where naked and disturbed patients cavorted in large poorly furnished rooms, walls smeared with feces.

Heinz kept up to date with the research literature by reading journals on Sundays in his hot bathtub; one Sunday, his interest was attracted by a paper in French, dropped off at his office by a pharmaceutical drug representative. It described the effects of a new drug on excited and agitated mental hospital patients. Already a cautious scientist, he noted that pre-clinical animal

work by Rhone- Poulenc pharmacologists reported a calming effect without excessive sedation and wondered if this is what translated to patients. Reading his journal pages above the water line, this was definitely not an Archimedes-like ‘*Eureka*’ moment.

On Monday morning, he asked his resident, Hanrahan, “Do you want to try this fancy new drug? It seems to be incredible, what they claim for it” (Lehmann, 1994). Receiving an affirmative reply, Heinz obtained free samples from Rhone- Poulenc. First, he confirmed chlorpromazine’s unique dissociation between a calming effect and deeper sedation by giving it to eight volunteer nurses before beginning an uncontrolled trial in a heterogeneous group of 72 agitated psychotic patients with twelve different diagnoses that included schizophrenics, depressed, manic and organic states. It did not do well in the organic states and nor did it help anxious patients. Later in life, he described his skeptical reaction to the dramatic results in the following way: “Within days, some of the patient’s had stopped hallucinating and within two weeks a few were in remission and ready to leave the hospital. I assumed we were seeing flukes, perhaps resulting from an extremely strange selection in the sample. It seemed almost as improbable as winning one million dollars twice in a lottery. Much as I wanted to believe what I was seeing, I didn’t for a long time ... we thought it might be a new modification of some sedating and inhibiting action, but we did not label the drugs antipsychotic. In 1956, when I was addressing the Canadian Medical Association, I introduced the term “antipsychotic” apologetically, and more as a metaphor than a designation” (Lehmann, 1993).

Heinz also noted the circumstances surrounding his discovery, “No IRB’s, no informed consent, no Food and Drug Administration (FDA) regulations, nothing; also no money whatsoever” (Lehmann, 1994). Nor was it easy to publish the results. He submitted them in August to *The Archives of Neurology and Psychiatry*. “Since I hadn’t heard anything by December, it seemed that something was fishy. So I wrote them that I wanted the paper back, and I’ll get it to somewhere else. Then, they immediately published it. It came out in March of next year (Lehmann and Hanrahan, 1954). I think what happened is that we were in Canada, and the Americans that were working with it, I think Winkelman, wanted to be first one out. His paper came a month later. He had worked with chlorpromazine in neurotic patients.”

Viewed through the eyes of eleven year old François, things looked better and simpler. Three months after his father's experiment, Francois recalls seeing the same woman's pavilion, quiet, clean and orderly, now populated by fully clothed patients (personal communication).

History rightly records these events as revolutionary but to those who experienced them, they may have seemed evolutionary and improbable at the time.

Early Life and Persona

Heinz Edgar Lehmann was born under the sign of Cancer on July 17, 1911 in the Mitte district of East Berlin, a place he would revisit with François in the 1970's shortly before the fall of the Berlin Wall. He was descended from a line of physicians, his father a surgeon and ENT physician was Jewish and his mother a Christian.

Heinz's childhood was disrupted at age 14 when, around puberty, he lost the capacity to concentrate on the rigorous demands of the Gymnasium to study Greek, Latin and Mathematics. Teachers told his parents he would never be able to graduate; "I just wasn't made for it and I should learn a trade." Heinz's mother "didn't believe it and used her good judgment to get me a tutor" (Lehmann, 1994). Later in life, he would self-diagnose this as a childhood depression, a condition not recognized at the time and which lasted about nine months, the natural history for an untreated episode. His tutor came daily, recognized his disability and did all his homework for him. Interested in psychology, the tutor also gave him Freud's works and, by age 15, Heinz had read them all, at which time he made up his mind to become a psychiatrist (Cahn, 2015).

Fully recovered, he graduated from the Gymnasium and began his medical training in the German fashion, attending "as many universities as your father could afford." First was Freiburg, his father's alma mater, followed by Marburg, where he studied Kretschmer's work, then Vienna to meet Julius Wagner-Jauregg, at that time the only psychiatrist to win a Nobel Prize. Reminiscing about his time as a medical student, "he remembered more about existentialism and Heidegger than any courses in medicine" (Ban, 2015a). Eventually, he received his M.D, from the University of Berlin in 1935, at age 24.

Heinz's father "chafed at his son's choice of medical fields". Heinz himself recalled that psychiatry "in 1930 was a rather derelict career. People only went there if they couldn't do anything else – or were alcoholic" (Tone, 2004).

After graduating, Heinz did a customary rotating internship in medicine, surgery and neurology at the Martin Luther Hospital and the outpatient clinic of the Jewish Hospital in Berlin.

Life was not all work and no play. By the time Heinz was 18, he was an accomplished cross country skier; with friends he would traverse one mountain top after another in the Alps. On one such occasion, a less expert skier became too exhausted to continue so Heinz volunteered to stay behind until others returned the next day with help. Conditions were so harsh and bleak the companion froze to death in his arms during the night (Francois, personal communication).

In understanding the young man that Heinz became, it is important to remember that his growing up years were during the Weimar Republic (1919-1933), a time of political freedom and cultural creativity he enjoyed from ages eight to 22. A photo at this time shows a handsome young man with blond hair, twinkling blue eyes, sporting a pipe.

By the time Heinz was a fully-fledged physician, the "Weimar Republic had been wiped out by Hitler and the Nuremberg Law was in effect for the protection of German blood." Germany was no longer a place where Heinz Lehmann could live or thrive. But, like so many Jewish citizens, the Gestapo did not want Heinz to leave and America did not want to welcome him. Faced with this dilemma, he arranged for a Canadian friend to invite him for a short ski vacation, arriving in Halifax on New Year's Day, 1937. All he possessed was a camera and a suitcase packed with personal belongings underneath a complete magician's set of tricks. A puzzled Customs Officer asked, "Why the hell does a skier need all this?" Heinz, who then hardly spoke any English replied, "A man's got to have a hobby" (Ban, 2015a).

Whatever other traits Heinz Lehmann brought with him to Canada, they clearly included "intrepid," fearless and adventurous. Later on, his father would also escape Nazi Germany to practice in America as an ENT physician for many years but his mother remained behind, dying just before the end of the War.

Clinician and Teacher

Like all refugees, Heinz had to report regularly to the Royal Canadian Mounted Police but he was able to obtain a temporary medical license and worked for 12 months at the Montreal Children's Hospital. He would not become a naturalized citizen until 1948 but, once acclimatized to the culture and mastering English, he moved on to join the staff at Verdun Protestant Hospital on the City outskirts (later renamed the Douglas Hospital). It was a 1500 bed inpatient facility affiliated with McGill University. Heinz would work there for the remaining 62 years of his life; a tenure he proudly claimed outlasted any other psychiatrist in the nation (Cahn, 2015).

As Heinz explains it, there was no formal postgraduate training in psychiatry but in any case, he had not time or money to afford it. His role models were Jaspers and Kraepelin, so there was "no particular person I could consider a mentor" (Cahn, 2015). Later in life, he would explain that instead "I learned it the right way, working from 8.30 in the morning until about 12.30 at night. I had up to 600 patients during the war. We didn't have interns; we didn't have residents. I had one trained nurse, the others were untrained attendants. So I did learn a lot. I taught myself and the patients taught me." Asked if he read, Heinz replied, "That's what I did after 11 o'clock in the hospital library." He also courted his future wife Annette, who told him of a rumor circulating among the staff suggesting he was "probably a heroin addict because nobody would walk around the hospital library at 3 o'clock in the morning" (Lehmann, 1994). Heinz's assimilation into the culture and marriage to a French-Canadian wife ensured he was fluent in English, French and German, enabling him to read scientific articles in their original language.

His intense immersion in patient care and diligent reading convinced Heinz that "psychoses such as schizophrenia and the affective disorders had some sort of a very strong physical component." So he began to try large doses of caffeine and chemicals to induce changes in

plasma pH, “hoping and dreaming about some drug that would eventually do something about the psychoses” (Lehmann, 1994).

Here was a psychiatrist who also, “read history, philosophy and theology, played chess and cards with the patients and believed empathy was as important as neuroscience to the practice of psychiatry” (Tone 2004). Spending time with patients was crucial and he lived in close proximity to them on the grounds of the hospital. Every Christmas, Heinz and François would tour the entire facility, greeting and wishing each patient well (eight miles, measured with a pedometer). Historian Andrea Tone also credits Heinz with recording these events and preserving mementos of his patients in the International Archives of Neuropsychopharmacology (IANP) at Vanderbilt University. The collection includes letters, postcards, watercolor paintings, poems and a silk tapestry. One patient scribbled, “I am sorry for the way I am” around the rudimentary sketch of a hand drawn horse (Tone, 2004).

This is the portrait of a man who was not a single minded or avid biological psychiatrist. Underlying his empathic approach to patients was an intellectual conviction that pharmacological treatment needed to be “supplemented with psychotherapy and social support.” In his comprehensive approach to psychiatry, he combined the best of American and European traditions. With his lifelong preference for evidence over experience, however, he was also constantly striving to replace old beliefs with verified knowledge about mental illness” (Ban, 2015b).

This nuanced view of the causes and treatment of mental illness meant that while he experienced the futility of psychoanalytic treatment for psychosis, he espoused the essential need for psychiatric trainees to understand the workings of the human mind. This mindset is illustrated in the anecdote of an event occurring two years before Heinz’s acquaintance with chlorpromazine. “In 1952, during one of his rounds at Verdun, Lehmann and a group of students were looking at two schizophrenic patients who were gesturing excitedly toward the ceiling from where they were hearing frightening voices. Concerned about what he saw, one of the students asked: “will we ever get a pill to help these people?” Lehmann smiled and replied: “unfortunately, it would never be as simple as a pill” (Ban, 2015b).

In 1948, Heinz Lehmann obtained his Teaching License from the College of Physicians and Surgeons of Quebec and became a Lecturer in Psychiatry at McGill University, supervising residents and medical students on their clinical rotations at the Douglas Hospital, work he continued for a lifetime, long after official retirement, until shortly before his death. As Heinz's career and reputation expanded, he moved rapidly up the academic ladder achieving Full Professor of Psychiatry at McGill in 1965.

His clinical and teaching skills were soon in high demand throughout North America, where he had forged relationships and friendships with other pioneers; among them, Nate Kline in New York, Frank Ayd in Baltimore and Doug Goldman in Cincinnati. In the early days of psychopharmacology, he was in great demand as a speaker and visiting lecturer, occasionally even teaching by telephone.

Back home at the Douglas hospital, the academic affiliation with McGill, 10 kilometers away, continued to flourish. In 1970-71, 25 residents rotated through the hospital, along with medical students and postgraduate students from around the world attending a diploma course. As if this was not enough, his teaching and clinical skills earned him a part-time consultant role at three other Canadian hospitals (two in Montreal).

Research

Heinz Lehmann's prolific research contributions are recorded in 382 journal publications between 1939 and 1986 (see INHN Archives). He was first or only author on 50% of these articles and also edited six books (five with Tom Ban and one with Nathan Kline), and eight book chapters (seven as single author and one with Nathan Kline). His research productivity can be divided into three periods.

1. Pre-chlorpromazine: 1938-1954

Most, if not all, of this early research was carried out as part of his job as a clinician without external support. Throughout his life, he was "a fervent adept" of what he called "bootstrap research:"; unpretentious clinical research carried out with limited means without publicity and

usually by small numbers of like-minded collaborators. Late in life, he was puzzled by the large numbers of co-authors (as many as 30) one sees on neuroscience papers today (Dongier, 1999).

Research in this beginning era includes 23 publications on a wide range of topics including therapeutic, diagnostic and clinical issues, often as the only author, sometimes with colleagues.

Therapy included: Metrazole convulsions in psychoses (Dancey and Lehmann, 1939); Nicotinic acid in confusional states (Lehmann, 1944); Niacin therapy in psychotic states (Lehmann, 1952,a); Nitrous oxide treatment in depression (Lehmann and Bos, 1947); A new preparation for sedation in organic brain disease (Lehmann, 1949); and Electroshock therapy (Lehmann, 1954).

Diagnostic issues included: Psychoses with somatic disease (Lehmann, 1946); Device for the objective measurement of the negative afterimage phenomenon (Lehmann, 1950); Stress dynamics in psychiatric perspective (Lehmann, 1952b); The clinical application of the Verdun projective battery (Lehmann and Dorkin, 1952); and The use of finger paintings in the clinical evaluation of psychotic conditions (Lehmann and Risquez, 1953).

Other clinical issues included: The iron content of CSF in psychoses (Lehmann and Kral, 1951; Kral and Lehmann, 1952); The eosinophil level in psychiatric conditions (Mann and Lehmann, 1952); and Socio-psychiatric observations on displaced persons (Lehmann, 1953).

For someone with no formal training in research, carrying an enormous clinical and educational load, this is a remarkably productive and diverse output over a 15 year time span, well before psychiatry was viewed as a scientific domain within medicine.

2. Start of a New Era: 1954- 1961

This seven year period began with Lehmann and Hanrahan's seminal article on chlorpromazine and moved on to include 23 publications on new experimental drugs, other therapeutic procedures, evaluative topics and drug reviews.

The drugs included: Chlorpromazine: New inhibiting drug for psychomotor excitement and manic states (Lehmann and Hanrahan, 1954); Therapeutic results with chlorpromazine

(Lehmann 1955); Neurophysiologic activity of chlorpromazine (Lehmann, 1956a); A dynamic concept of the action of chlorpromazine at physiological and psychological levels (Lehmann, 1956b); A therapeutic trial of Marsilid in depressed and apathetic patients (DeVerteuil and Lehmann, 1958); Psychophysiological testing with a new phrenotropic drug (trifluoperazine) (Lehmann and Knight, 1958); The treatment of depressive conditions with imipramine (Lehmann, Cahn and DeVerteuil, 1958); and Combined pharmaco-fever treatment with imipramine and typhoid vaccine in the management of depressive conditions (Lehmann, 1960c).

Other therapeutic procedures were: Experimental sleep deprivation in schizophrenic patients (Koranyi and Lehmann, 1960); and Placebo proneness and placebo resistance of different psychological functions (Lehmann and Knight, 1960).

Evaluative topics were: The problems of evaluating psychotic art at three levels, objective, interpretive and intuitive (Lehmann, 1957); Differential screening of phrenotypic agents in man (Lehmann and Csank, 1957); Developmental norms on four psychophysiological measures in the evaluation of psychotic disorders (Csank and Lehmann, 1958); Methods of evaluation of drug effects on the human nervous system (Lehmann, 1959a); Concepts, Rationale and Research (Lehmann, 1959b); Psychotropic drugs and their influence on the dynamics of working capacity. (Lehmann, 1960b); The place and purpose of objective methods in psychopharmacology (Lehmann, 1960a); and Measurement of changes in human behavior under the effects of psychotropic drugs (Lehmann and Knight, 1961).

Drug reviews were: Tranquilizers and other psychotropic drugs in clinical practice (Lehmann, 1958); Psychiatric concepts of depression (Lehmann, 1959c); and New drugs in psychiatric therapy (Lehmann, 1961).

This body of work is informative in several ways. Early on, Heinz was involved in evaluating several of the newly appearing categories of drugs, the first MAO inhibitor antidepressant, the newly appearing antipsychotics, trifluoperazine and perphenazine and, most importantly, imipramine, in 1958. In 1957, Heinz attended the second International Congress of Psychiatry in Zurich, Switzerland. The Swiss psychiatrist, Ronald Kuhn presented a paper on a new drug, supposedly with antidepressant properties, tested in 40 patients with "vital" (endogenous) depression (Kuhn, 1957). So skeptical were the conference attendees that "barely a

dozen” attended the presentation (Kuhn, 1971). Heinz Lehmann was not among them but read the paper in its original German on the flight back to America. Impressed by the results, he contacted Geigy for supplies of imipramine and, with two colleagues, embarked on a controlled study in an eight-week trial of 84 patients, of whom 60% recovered or were much improved (Lehmann, Cahn and DeVerteuil, 1958). This study replicated the earlier chlorpromazine one – it was the first North American confirmatory work published on a novel drug.

The initial publication in this new era, on chlorpromazine, was the first in the English language but was also published in German, Heinz’s native language. It attracted immediate attention in North America and throughout the English speaking world, resulting in the prestigious Lasker Award to Heinz Lehmann in 1957, America’s leading prize for medical research. The citation accompanying the award states, *“In his first publication on this subject, Dr. Lehmann was able to outline the clinical guidelines so clearly, describe the results so accurately and evaluate the dangers so frankly that with this paper alone, any other psychiatrist was in a position to apply this medication with confidence and safety.”* It might also be said that this singular research provided a solid foothold for psychiatry as a medical discipline, initiating a category of psychotropic medications that would become widely used by physicians of all disciplines over the coming decades.

The other publications during this seven year period further illustrate the broad scope of Heinz’s research interests, both in treatment and innovative methods of evaluation, backed up by the psychophysiological laboratory he set up and the Verdun projective battery he co-developed with psychologist Herbert Dorkin. He also worked with occupational therapist Mary Cato to develop a method of scoring finger painting to measure progress in treatment.

Finally, it is interesting to note his use of the term *“phrenotropic”* (Lehmann and Csank, 1957), describing the chlorpromazine like agents, even though he had coined the term *“antipsychotic”* two years earlier. Derived from Greek roots, this innovative nomenclature implies stimulating the mind but it never caught on and, after 1958, Heinz reverted to the earlier and still current term *“antipsychotic”*.

3. The Lehmann-Ban Era: 1961- 1977

This highly productive period of collaboration between Tom and Heinz lasted 16 years, and their friendship a lifetime. Its roots lay in several connections that generated ample resources and abundant talent to create a program second to none in North America, located at the Douglas Hospital and affiliated academically with McGill University.

A newly arrived immigrant from Hungary, Tom Ban met Heinz Lehmann on July 1st 1958, the first day of Tom's first year of residency. "He took me together with the other new residents around the hospital that day and, while walking through the wards, he pointed out a few patients posturing, some roaming around naked, and one happily fishing for his stool in the toilet bowl. When he talked about chlorpromazine he referred to it as a 'tranquilizer.' We understood that with the introduction of the new drugs a major change for the better had taken place in hospitals like Verdun" (Ban, 2015b).

A few months later, Tom was invited to assist Lehmann in a project on Sernyl (phencyclidine), the outcome of which would become their first published collaboration, with Ban as first author (Ban, Lorenz and Lehmann, 1961).

Between 1958 and 1960, Tom assisted Heinz in a number of projects but the most unusual and memorable were studies on the effect of early psychotropics on the enzymes and biological systems of plants, predominantly the ubiquitous dandelion weed, with its unique survival capacity. Heinz presented these findings at the 10th Symposium of the Galesburg State Research Hospital in 1960, explaining that there was a plenitude of animal research on these new drugs but none on more primitive life forms devoid of a brain. Harold Himwich commented favorably on this novel evolutionary approach.

The next major step solidifying the Lehmann-Ban collaboration was serendipitous, a product of the Zeitgeist. All of the early research by Lehmann was conducted entirely without financial support, absorbed by existing salaries and service operations at Verdun. Simultaneously, in the United States, there was growing concern that psychopharmacology studies were sparsely funded by industry, poorly designed and conducted in often ill-equipped mental hospitals. The Psychopharmacology Research Center (PRC), under the direction of Johnathan Cole, developed Federal funding to support a dozen centers of excellence, the Early Clinical Drug Evaluation Units (ECDEU).

In 1961, the year Tom Ban completed his residency, the Verdun Project received a major grant from the U.S. Public Health Service to become a founding member and later a lead component of this consortium. ECDEU went on to develop common procedures in validated rating scales and trial design to allow comparison and consolidation of results between the programs. Heinz Lehmann and Tom Ban became Co-Principal Investigators at Verdun and published their first report of its activities in 1964 (Lehmann and Ban, 1964a,b). Together, they also recorded the startup of the entire ECDEU network (Lehmann, 2013). The history of the ECDEU (later NCDEU) until its demise in 1976 is recorded by Tom (Ban, 2015c).

Additional funding for the Verdun Unit came from the Canadian Medical Research Council for conditioning studies on psychotropics, a particular interest of Ban's. The scope, quality and volume of their research also invited unrestricted support from the pharmaceutical industry, without strings attached to specific projects or outcomes. This combined economic endowment also enabled the recruitment of WHO fellows as well as support for residents and post-doctoral fellows from McGill.

The prodigious output of ideas and research generated by this level of support and the experience, energy and organizational skills of Ban and Lehmann is difficult to summarize. In less than two decades, the Verdun Project studied a total of 70 compounds, including marketed drugs in early development, experimental drugs (with code numbers), along with methyldopa, thyrotropic releasing hormone, anabolic agents and placebos. These were studied alone or in combination in every category of severe psychiatric disorder, including depression, schizophrenia, bipolar disorder, alcoholism, memory loss, Parkinson's disease, epilepsy, geriatrics and psychiatric emergencies.

In addition to clinical outcomes and rating scales were conditioning and reflex responses, psychophysiological and psychophysical measures, rapid eye movement, blood levels, dexamethasone suppression, sexual function and gender differences.

Numerous side effects were recorded and described, some for the first time, including skin pigmentation, adynamic ileus, EKG abnormalities, toxic psychoses, extrapyramidal effects, jaundice, urinary incontinence, leukopenia, teratogenicity and systemic lupus.

These were documented in 211 articles over 18 years, reaching an apogee in a two- year period, when together they collaborated with other team members in publishing 34 scientific papers in 1970 and 23 in 1971. As they accumulated this data, they analyzed and disseminated the knowledge and wisdom it yielded to practicing psychiatrists worldwide, in reviews, books, book chapters and conference presentations. A selected few of these, based on their general relevance to the field, are cited below and fully referenced at the end.

Together, Tom and Heinz published their notes from the log-book of the Verdun Research Unit (Lehmann and Ban, 1964a,b); Heinz summarized their experience with the placebo response in double-blind studies (Lehmann, 1964) on the pharmacotherapy of depression, (Lehmann, 1965), schizophrenia (Lehmann, 1966), and the psychotic geriatric patient (Lehmann and Ban, 1967); as well as their overall experience with psychotropic drugs (Lehmann, 1967a). The 1967 *Textbook of Psychiatry* (Freedman and Kaplan) contained three chapters by Lehmann on aspects of schizophrenia (Lehmann, 1967 b,c,d). Heinz also worked on side effects of lithium (Vacaflor, Lehmann and Ban, 1970) and prophylactic use (Vacaflor, Anath Lehmann and Ban, 1973).

During this time period, Heinz Lehmann also carried out a major task with wide societal implications. He was appointed by the Canadian Government Commission of Inquiry into *Non-Medical Use of Drugs* to work with two other scientists on the role of Cannabis (Le Dain, Lehmann and Stein, 1972). Their major prescient conclusion was that while law enforcement should prohibit trafficking, simple possession should not be a crime.

Changing Circumstances

This decade of research collaboration overlapped with the so-called “*Quiet Revolution*” in Quebec (1960-1970). It began when an elected Liberal provincial government usurped control from the Roman Catholic Church in health care and education, establishing Ministries of Health and Education and triggering a period of intense social, political and cultural change that essentially secularized society and created a welfare state. The civil service was unionized, electricity production was nationalized and a province-wide pension plan set up.

These events had a profound impact on McGill University and its affiliated hospitals. “There was a lot of unrest and a lot of psychiatrists and university teachers were leaving ...the department was almost falling apart at that time.” The Dean of the School of Medicine, clearly seeking a calm and highly respected clinician, teacher and researcher, offered Heinz the Chairmanship of the Department of Psychiatry. “I didn’t want to have anything to do with administration. I hated anything to do with administration. I told the Dean I needed it like a hole in the head.” But the Dean was insistent and, in 1970, Heinz reluctantly acquiesced: “Because I was from there and I knew about holding things together” (Lehmann, 1994).

But political unrest persisted after 1970; emboldened by the existing changes and a visit by General De Gaulle, who gave a speech in Montreal proclaiming, “*Vive le Quebec libre!*” A small Marxist faction began a push for political sovereignty. Part of that agenda must have included a more general assault on the alleged evils of totalitarian government that infected and radicalized youth, including a psychiatric resident or two, protesting the use of medications as “mind control” in schizophrenia. This fed into a broader North American movement in the mid 1970’s led by the Scientologists, including psychiatrist Peter Breggin, stirred up by public concerns over the CIA’s MK ULTRA funded research program with alleged human abuses by several eminent psychiatric researchers, including Ewen Cameron, Heinz’s early predecessor as Chairman at McGill. In 1972 and 1973, the President of the *Citizens Commission on Mental Health* toured 70 major psychiatric facilities in Canada, allegedly interviewed thousands of patients and compiled a catalog of harmful psychotropic drug side effects. These findings were published in the Scientology magazine, *Freedom*, including a photo on its front page of Verdun Hospital with the caption, “Some of Lehmann’s experiments at Verdun (now Douglas) hospital were fatal, yet have gone virtually without comment.”

These allegations, long since discredited, are still posted on Google (www.Freedommag.org/English/vol134ilO8.htm). Heinz Lehmann’s response came in the form of a public debate when the distinguished philosopher Herbert Marcuse spoke for the motion, “*Psychiatry is an Agent of the Establishment*” while Heinz spoke against. Heinz probably relished the encounter. Marcuse, who must have been in his late 70’s at the time, was a German Jew who, like Heinz, studied at Freiburg, graduated from Berlin University and fled Nazi Germany before World War II. Fiercely opposed to totalitarian regimes, his early work

combined theories of Marx and Freud; in America, he taught political theory at several major universities, including Harvard and Brandeis and became known as the “The Father of the New Left”. He believed that many aspects of the modern state, particularly technology, amounted to social control of the individual. Presumably this ideology fit with the notion that use of psychotropic drugs was repressive or abusive and, although his writings do not proclaim this, it may account for why he was invited to defend the motion. It was a position Heinz was well equipped to negate. So, while getting the better of the argument, Heinz was attacked by a psychiatric resident who came prepared with a spray can and covered the professor in whipped cream. Without missing a beat Heinz calmly wiped the foam from his face and continued the debate, widely viewed by the audience as the winner (Personal communications, Francois Lehmann and Thomas Ban, 2015).

During his brief chairmanship (1970-1974), Heinz continued work on the Douglas Unit in collaboration with Tom Ban, producing another 50 publications. After stepping down as Chair, he became Director of the Division of Psychopharmacology at McGill until mandatory retirement at age 65, in 1976, producing another 80 publications until, in that same year, Tom Ban moved to Vanderbilt University to become Professor of Psychiatry and Director of the Clinical Research Service at the Tennessee Neuropsychiatric Unit. This ended their collaboration at McGill but Heinz and Tom remained friends for the remainder of Heinz’s life and published their last paper together in 1997, when Heinz was 88. It is a twenty page review of the History of Psychopharmacology of Schizophrenia with 120 references (Lehmann and Ban, 1997).

Work without Pay

Heinz Lehman was a person for whom material things mattered little. Retirement was an arbitrary concept that terminated work he could be paid for but not what he chose to do. That was determined by philosophical and moral imperatives. “Retirement is a bureaucratic arrangement, not a state of mind” (Ban, 2015a).

By the time Heinz was required to retire, what he had always known to be true became abundantly clear. A pill was not enough; people with severe mental illness were everywhere homeless on the streets. Both the first and second generation antipsychotic drugs

(chlorpromazine, Clozaril and their analogues) stifled the hallucinations, delusions, paranoia and excitement that had mandated asylum care for the insane but they did little to improve the intellectual, social, motivational or psychological deficits that deprived them of work, shelter and economic well being living in community. The remedy for this lay beyond medication alone and resided in social policy, economics, research and politics, all the domain of administration, “The thing I’ve always hated in my life” (Lehman, 1994).

Perhaps, above all else in life, Heinz had always responded to a desire to be useful to others with little regard for his own needs. So, in 1981, Heinz Lehmann decided to donate two days each week to become the Deputy Commissioner of Research for the New York State Office of Mental Health in return for the nominal salary of one dollar a year, which he never received. He had many psychiatric friends in New York and commuted back and forth to Montreal where he continued to teach residents and medical students at Douglas and McGill until the very end of his life. His bibliography of research publications ends in 1986 at age 75 but the demands of his new administrative position were considerable.

He had a budget of 37 million dollars and administered two research institutes, one of them named after his friend, former colleague and co-author, the Nathan Kline Institute. “I have to sign off on all research protocols; I have to make sure every IRB is working all right. I have to deal with all the political infighting about the various jobs in the various hospitals and research institutes. I have to fight about budgets and try to outwit people, get around and manipulate people ... I do all the things administrators do” (Lehmann, 1994). And clearly Heinz Lehmann did them all well.

Accomplishments, Accolades and Awards

Heinz Lehmann had accomplishments other than clinician, educator, researcher and administrator. In addition to serving as President of the world’s two leading psychopharmacology organizations, the ACNP (1965) and the CINP (1970), Heinz was a Life Member of the American Psychiatric Association, a Fellow of the American Association for the Advancement of Science and a Foundation Member of the Royal College of Psychiatrists. He was also a Member of the American Psychopathological Association, Association des Médecins

de Langue Française du Canada, the Canadian Psychiatric Association, the Quebec Psychiatric Association, the Canadian Medical Association and the Montreal Medico-Chirurgical Society. He was an honorary member of psychopharmacology organizations in Turkey and Germany.

In 1976, Heinz Lehmann was made an Officer of the Order of Canada, in 1970, he became a Fellow of the Royal Society of Canada and in 1988, he was inducted into the Canadian Medical Hall of Fame in the distinguished company of William Osler and Norman Bethune. *“He was a humble and affable man who made the world a better place.”*

Heinz was a member of four editorial boards: The Canadian Psychiatry Association, L'Encéphale; Revue de Psychiatrie Biologique et Thérapeutique, the Executive Editorial board of Progress in Neuropsychopharmacology and Focus on Psychiatric Practice.

Over a lifetime, Heinz Lehmann garnered many awards, none sought after. His early work earned him four awards: from the Newspaper Guild of New York (Page One Award, 1956), the Albert Lasker Award (1957), the Annual Award of Merit of the Canadian Mental Health Association (1957) and the Stratton Award from the American Psychopathological Association (1962).

His research during the Lehmann-Ban era earned him three McNeil Awards from the Canadian Psychiatric Association (1969, 1970 and 1974) and contributed to receiving the Taylor Manor Award (1978).

His lifetime accomplishments include the Psychiatric Outpatient-Centers of America Award (1980), the Leonard Cammer Memorial Award (1981), the Silvano Arieti Award from the American Academy of Psychoanalysis (1988), the Outstanding Citizen Award from Montreal Citizen Council (1991), the Van Gieson Award from the New York Psychiatric Institute and the Prix de l'oeuvre Scientifique from [l'Association des médecins de langue française du Canada](#) (1992). At the 21st Congress of the CINP in Glasgow, he received the Pioneer in Psychopharmacology Award (1998).

Heinz Lehmann's teaching skills made him the first recipient of the McGill Psychiatry Resident's Association Award for Outstanding Teaching (1985) and the Distinguished Scholar Award from the Harlem Valley Psychiatric Center (1998).

For an educator and researcher there is no greater honor than to have an endowed award named in your honor and to be its first recipient. They are the Heinz Lehmann Award for Excellence in Psychiatry by the Quebec Psychiatric Association (1986), the Heinz E Lehmann Research Award by the New York State office of Mental Health and the Heinz Lehmann Award for outstanding contributions by a single individual in the field of research in Neuropsychopharmacology by the Canadian College of Neuropsychopharmacology (1999).

Portrait of the person

A remarkably consistent portrait of Heinz Lehmann emerges from multiple sources, mostly substantiating what one has learned from his early upbringing and professional life and only occasionally surprising.

Tom Ban, who knew him for just over 40 years, as student, colleague and friend has much to say. Even into his eighties, Heinz was full of youthful vitality and energy, whose curiosity and probing extended to all different aspects of life. He had compassion, insight and charm, coupled with a fair minded and even handed approach. This must have endeared him to patients and students but it also was an important cohesive force as an administrator and committee member.

Despite his preference for evidence over experience, Heinz was not unduly enamored by rapidly changing theories of neurochemical etiology and felt that some of the millions of dollars spent on neuroscience might be better used preventing emotional and mental problems in children by teaching parents on how to raise children or by addressing the problems of homelessness in people with mental illness. Heinz pioneered and taught a psychiatry that paid attention to the biology of illness integrated with the psychology and social situation of the person (Ban, 2015b). His clearest enunciation of this ideology was among his last lectures titled, *Psychotherapy's empathy and intuition versus modern drug strategies and brain Investigation technology* (Lehmann, 1995).

His ultimate hope for mankind was that a “psychological revolution” would transform society from “money and power” to “constructive social action” (Cahn, 2015).

A former student and colleague noted he was a man of strong opinions who never shirked a challenge and knew exactly where he stood. In addition, he was a great idealist and inspiring teacher, innovative and open to new ideas, while questioning traditional wisdom (Paris, 1999).

Heinz's domestic life was overseen in tranquility by his wife Annette, a kind and older spouse, who took good care of him, exhibiting benevolent judgment and wisdom, epitomizing "encadrer," as the French say. Only after her death, did the family learn her secret; she had altered her birth certificate to conceal the fact that she was thirteen years older than Heinz.

Heinz was a medical and moral role model for his son François, who became a family physician and also an ordained deacon - their only disputes were over religion where perhaps faith contested with the skepticism and empiricism that governed his father's ideology as an agnostic.

Heinz never again experienced the kind of major depressive illness that marred his childhood but he underwent less severe self-limiting episodes of sadness with which he mostly coped without disruption to his working life.

Personal life had its pleasures and pastimes. The family skied together and François' parents were among the first to frequent the slopes of Mount Gabriel, from the days when they were too poor to visit the Lodge or buy a drink, while their 50th wedding anniversary was celebrated there in bountiful manner among family and friends.

Among his many skills, Heinz Lehmann was an accomplished amateur magician to the delight of his grandchildren, Hugo and Joel. He had a childlike sense of fun and playfulness that Tom Ban recalls in interactions with his own son, Christopher.

Heinz was also a scuba diver and a strong and vigorous swimmer, even off the New Brunswick coast where there were powerful tides and undertows but no life guards. On more than one occasion he rescued unwise and less powerful swimmers.

His main hobby was star gazing through a large telescope on the balcony of his home, an avocation reminiscent of his British contemporary's recall of Emmanuel Kant's words that inspired his fellow pioneer, "*Two things continue to astonish the mind, the more it dwells on them. One is the starry sky above me and the other is the moral law within me*" (Elkes, 1997).

Heinz also collected precious and semi-precious stones wherever he went, polished and cut them, so his wife could set them for friends and family. He had the unusual habit of fondling an emerald, the symbol of love, while listening to lectures at conferences (Ban, 2015a).

Heinz owned a car in Germany but never drove one in Canada, where he had a lifelong preference for his bicycle. On longer trips, he used a Taxi and in later life had a driver, preferring work in the back seat to driving. Although he told friends this was his choice and they attributed it to his modest habits, François believes his father was forbidden to own a car after early on driving his mother into a ditch on more than one occasion! It is a little known fact that Heinz's aversion to driving was shared by his famous contemporaries in Britain (Aubrey Lewis) and France (Jean Delay).

Altogether, family life was convivial and calm with many shared activities and memorable annual holidays on Cape Cod, along with François and his wife Ghislaine, whom Heinz adored, and his two grandsons, Hugo and Joël.

Exiting Center Stage

Heinz Lehmann died on April 7th 1999, suffering from a sickness not named in any of numerous obituaries. But Tom Ban presents a clear picture (Ban, 2015a). In October 1998, they had been together when Heinz was inducted into the Canadian Medical Hall of Fame and he appeared well. In December, he attended the Eleventh Annual New York State Office of Mental Health Research Conference and presented the annual awards “with his usual wit and humor.” Following this, they both attended the usual mid-December meeting of the ACNP in Puerto Rico.

He was now “visibly weak but attended sessions and enjoyed discussing what he learned. As usual he had his emerald in his hand while listening, but unlike before, when he got bored he just left the room.” Although he was unsteady, was having memory problems, had no appetite and had lost weight, his only complaint was difficulty sleeping, for which none of the usual hypnotics had helped. Characteristically, he walked around the poster session, carefully reviewed every one that dealt with insomnia and “brought to the exhibitor’s attention the need for a different kind of hypnotic.” Together Tom and Heinz visited the beach and Tom enjoyed

watching him swim and the pleasure it gave Heinz, followed by a good sleep in the afternoon. That night they enjoyed a cocktail, ate dinner together and shared a main course.

Over the next three months, they were in frequent phone contact and Tom visited Heinz three days before his death. Heinz dwelt on his insomnia and relentless search for relief. A couple of nights before he was admitted to hospital for the last time, “he had a good sleep after taking a small dose of olanzapine and his restlessness had gone.” This drug is an anti-psychotic, not normally used for insomnia. Heinz felt this should be looked into to help others with the same problem. Tom notes, “I did not look into it but he did.” Heinz experimented on himself to find out if the drug really worked or if it might be a placebo response. After stopping the drug, “All his symptoms recurred and promptly remitted with the resumption of olanzapine in a small dose.”

This must have been among their last conversations. Heinz, the incurable scientist, took the results of his final experiment with him, leaving behind a grieving family, his lifelong friend Tom and a worldwide audience of bereft fellow psychiatrists.

References:

Ban TA, Lorenz JH, Lehmann HE. Observations on the action of Sernyl – a new psychotropic drug. *Can. Psychiat. Ass. J.* 1961; 6: 150-157.

Ban TA. ECDEU Manual on Documentation and Assessment Procedures for Clinical Trials in Neuropsychopharmacology. INHN.org at Archives: Ban Collection; ECDEU Manual on Documentation and Assessment Procedures for Clinical trials in Psychopharmacology;1983.

Ban TA. INHN.org at Archives: Ban Collection; Heinz Lehmann and Psychopharmacology (Personal Recollections, 1999): 13.08.2015a.

Ban TA. INHN.org at Archives: Ban Collection; Personal Notes on Heinz (Personal Recollections, 1999): 12.20.2015b.

Ban TA. INHN.org at Archives: ECDEU Manual on Documentation and Assessment Procedures for Clinical Trials in Neuropsychopharmacology: Second Revision (1983), 112.20. 2015c..

Ban TA. In *Reflections on 20th Century Psychopharmacology* (eds: Ban TA, Healy D, Shorter E. Vol 4: The history of Psychopharmacology at the CINP. Heinz Edgar Lehmann, Pioneer and President (1968-1970), 2004, 580-583.

Blackwell B. Joel Elkes; An Integrative Life. INHN.org, Biographies; 8.30.2015.

Cahn CH. INHN.org at Archives: Cahn Collection; Interview of Heinz Lehmann (conducted late 1980's). 3.01. 2015.

Csank JZ, Lehmann HE. Developmental norms on four psychophysiological measures for use in the evaluation of psychotic disorders. *Can. J. Psychol.* 1958; 12: 127-133.

Dancey TE, Lehmann HE. Metrazole convulsions in the treatment of Mental Disorders. In *New International Clinics, 11*. JB Lippincott Co., Philadelphia, 181-204, 1939.

Delay J, Deniker P, Harl JM. Traitment des etats d'excitation et d'agitation par une method medicamenteuse de l'hibernotherapie. *Anr. Med-psychol.*1952; 110: 267-273.

DeVerteuil RL, Lehmann HE. Therapeutic trial of iproniazid (Marsilid) in depressed and apathetic patients. *Can.Med. Ass. J.* 1958; 78: 131-133.

Dongier M. In Memoriam. *Revue de Psychiatrie et de Neuroscience.* 1999; 24 (4): 362.

Elkes J, Elkes C, Effects of chlorpromazine on the behavior of chronically overactive psychotic patients. *Brit. Med. J.* 1954; 560-565.

Elkes J. *Values, belief and survival. Dr. Elkhanan and the Ghetto.*1997; London, Vale Publishing.

Francois Lehmann. Personal communication, 2015.

Kuhn R. Uber die Behandlung depressive Zustande nur einem iminodibenzyl-derivat Canadian (G22355). *Schweiz Med. Wochenschr.*1957; 87: 1135-1140.

Kuhn R. The Imipramine story In *Discoveries in Biological Psychiatry* Eds. Ayd F, Blackwell B. 1971; 205-217. Lippincott, Philadelphia.

Koranyi EK, Lehmann HE. Experimental sleep deprivation in Schizophrenic patients. Arch. Gen. Psychiat. 1960; 2: 534-544.

Kral VA, Lehmann HE. Further studies on the iron content of the cerebrospinal fluid in psychoses. Arch. Neurol. Psychiat. 1952; 68: 321-328.

Le Dain G, Lehmann HE, Stein JP. *Cannabis: The Report of the Canadian Government Commission of Enquiry into the Non-Medical use of drugs*. 1972; Information, Canada.

Lehmann HE. Post-traumatic confusional state treated with massive doses of nicotinic acid. Can. Med. Ass. J. 1944; 51: 558-560.

Lehmann HE. Psychoses with somatic disease. Can. Med. Ass. J. 1946; 55 557-559.

Lehmann HE, Bos C. The advantages of Nitrous Oxide inhalation in psychiatric treatment. Amer. J. Psychiat. 1947; 104: 164-170.

Lehmann HE. A new preparation for sedation in organic brain disease and senile disturbances. Can. Med. Ass. J. 1949; 60: 157-159.

Lehmann HE. Preliminary report on a device for the objective measurement of the negative afterimage phenomenon. Science. 1950; 112: 199-201.

Lehmann HE, Kral VA. Studies on the iron content of cerebrospinal fluid in different psychotic conditions. Arch. Neurol. Psychiat. 1951; 65: 326-336.

Lehmann HE. Niacin therapy in psychotic states in *The Biology of Mental Health and Disease*, Paul B Hoeber, New York, 1952a.

Lehmann HE. Stress dynamics in psychiatric perspective. Psychiat. J. Stud. Interper. Relat. 1952 b; 15: 387-393.

Lehmann HE, Dorkin H. Jr. The clinical application of the Verdun Projective Battery. Canad. J. Psychol. 1952 c; 6: 164-172.

Lehmann HE, Risquez FA. The use of finger-paintings in the clinical evaluation of psychotic conditions; A quantitative and qualitative approach. J. Ment. Sci. 1953; 99: 763-777.

Lehmann HE. Socio-psychiatric observations on displaced persons. *Psychiat. Quart. Supp.* 1953; 27: 245-256.

Lehmann HE. Electroshock therapy. *Mod. Med. Can.* 1954; 9: 45-55.

Lehmann HE, Hanrahan GE. Chlorpromazine: New inhibiting agent for psychomotor excitement and manic states. *Arch. Neurol. Psychiat.* 1954; 71: 227-237.

Lehmann HE. Therapeutic results with chlorpromazine (Largactil) in psychiatric conditions. *Can. Med. Ass. J.* 1955; 72: 91-99.

Lehmann HE. Neurophysiologic activity of chlorpromazine in clinical use. *J. clin. Exp. Psychopathol. Quart. Rev. Psychiatric. Neurol.* 1956 a; 17: 129-141.

Lehmann HE. A dynamic concept of the action of chlorpromazine at physiological and psychological levels. *Encephale*; 1956 b; 4: 1113-1118.

Lehmann HE. The problem of evaluating psychotic art at three levels, objective, interpretive and intuitive. In *Congress report of the Second International Congress of Psychiatry.* 1957; 4: 362-367.

Lehmann HE, Csank J. Differential screening of phrenotropic agents in man: psychophysiological test data. *J.Clin.Exp. Psychopathol. Quart. Rev. Psychiat. Neurol.* 1957; 18: 222-234.

Lehmann HE. Tranquilizers and other psychotropic drugs in clinical practice. *Can. Med. Ass. J.* 1958; 79: 701-708.

Lehmann HE, Knight DA. Psychophysiological testing with a new phrenotropic drug (trifluoperazine) In *Trifluoperazine: Clinical and Pharmacological Aspects.* 1958; 34-45 Ed. Brill H; Lea and Febiger, Philadelphia.

Lehman HE, Cahn CH, DeVerteuil RL. The treatment of depressive conditions with Imipramine (G22355). *Can. Psychiat. Ass. J.* 1958; 3: 155-164.

Lehmann HE. Methods of evaluation of drug effects on the human central nervous system. In *The Effect of pharmacologic agents on the nervous system.* Ed. Braceland FJ. 1959 a; 37: 126-146. Williams and Wilkins, Baltimore.

Lehmann HE. Concepts, rational and research. In *Psychopharmacology Frontiers*. Ed. Kline NS. 1959 b; 21-30, Little Brown & Co. Boston.

Lehmann HE. Psychiatric concepts of depression: Nomenclature and Classification. *Can. Psychiat. Ass. J.* 1959 c; 4: S1-S10.

Lehmann HE. The place and purpose of objective measures in Psychopharmacology. In *Drugs and Behavior* Eds. Uhr L, Miller JG. 1960 a; 107-127. John Wiley & Sons, New York.

Lehmann HE. Psychoactive drugs and their influence on the dynamics of working capacity. *J. Occup. Med.*, 1960 b; 2: 523-52.

Lehmann HE. Combined pharmaco-fever treatment with imipramine (Tofranil) and Typhoid vaccine in the management of depressive conditions. *Amer. J. Psychiat.* 1960c; 117: 356-358.

Lehmann HE, Knight DA. Placebo response and placebo resistance of different psychological functions. *Psychiat. Quart.* 1960; 34: 505.

Lehmann HE, Knight DA. Measurement and changes in human behavior under the effects of psychotropic drugs In *Neuropsychopharmacology* Ed. Rothlin E. 1961; 2:291- 303. Elsevier Publishing Co.

Lehmann HE. New drugs in psychiatric therapy. *Can. Med. Ass. J.* 1961; 6: 150-157.

Lehmann HE, Ban TA. Notes from the log book of a psychopharmacological research unit 1. *Can. Psychiat. Ass. J.* 1964; 9: 28-32.

Lehman HE, Ban TA. Notes from the log book of a psychopharmacological research unit. 11. *Can. Psychiat. Ass. J.* 1964; 9: 111-113.

Lehmann HE. The placebo response and the double-blind study. In *Evaluation of Psychiatric Treatment* Eds. Hoch P, Zubin Z. 1964; 75-93. Grune and Stratton, New York.

Lehmann HE. The pharmacotherapy of the depressive syndrome. *Can. Med. Ass. J.* 1965; 92: 821-828.

Lehmann HE. Pharmacotherapy of schizophrenia. In *Psychopathology of Schizophrenia* Eds. Hoch P, Zubin Z. 1966; 388-411. Grune and Stratton, New York.

Lehmann HE, Ban TA. Comparative pharmacotherapy of the aging psychotic patient. *Laval Med.* 1967; 38: 588-595.

Lehmann HE. The psychotropic drugs: Their actions and applications. *Hospital Practice.* 1967a; 2: 74-80.

Lehmann HE. *Comprehensive Textbook of Psychiatry* Eds. Freedman AM, Kaplan HI, 1967 b,c,d: History, 593-598; Clinical Features, 621-648: Atypical psychoses, 1150-1161. Williams and Wilkins, Baltimore.

Lehmann HE, Ban TA. ECDEU Progress Report (1961-1963) INHN.org in Archives at Lehmann Collection. 07.04.2013.

Lehmann HE. Before they called it Psychopharmacology. *Neuropsychopharmacology.* 1993; 8: 291- 303.

Lehmann HE. Psychotherapy's empathy and intuition versus modern drug strategies and brain investigation technology. Quebec Regional Branch of the American Psychiatric Association. Oct. 27, 1995. In INHN.org Archives; Lehmann Collection 04.07.2013.

Lehmann HE, Ban TA. The history of the psychopharmacology of schizophrenia. *An. J. Psychiatry.* 1997; 42: 152-162.

Lehmann HE. Interview with William E. Bunney Jr. 2004. In: *An Oral History of Neuropsychopharmacology* (series ed. Ban TA) Vol.1 (Ed. Shorter E) 2011, ACNP, Brentwood Tennessee.

Mann A, Lehmann HE. The eosinophil level in psychiatric conditions. *Can. Med. Ass. J.* 1952; 66: 52-58.

Paris J. Heinz Lehmann: A pioneer in Modern Psychiatry. *Can. J. Psychiatry,* June 1999.

Tone A. Heinz Lehmann: There at the Revolution. *CINP Newsletter,* March 2004, 16-17.

Vacaflor L, Lehmann HE, Ban TA. Side effects and teratogenicity of lithium carbonate treatment. *J. Clin. Pharmacol. J. New Drugs* 1970; 10: 387.

Vacaflor L, Anath JV, Lehmann HE, Ban TA. Prophylactic use of lithium. *Indian J. Psychiat.* 1973; 15: 250-263.

Warnes H, Lehmann HE, Ban TA. Adynamic ileus during psychoactive medication. *Can. Med. Ass. J.* 1967; 96: 1430.

November 5, 2015

Mary and Philip Seeman's comment

Thank you, Dr. Blackwell for this great biography of the wonderful Heinz Lehmann. He was one of our instructors in psychiatry in the late 1950s at McGill Medical School. In our class, an unprecedented number of us went into psychiatry and there was undoubtedly a cause and effect relationship between Dr. Lehmann's teaching and that outcome. He used to do tandem teaching with Dr. Tay Statten, a child psychiatrist, another great teacher. The lecture I remember best is the one about the cigarette case. Dr. Lehmann told the class a story about a patient who, after her consultation with a psychiatrist, left behind her silver cigarette case. "What caused her to do that?" Dr. Lehmann asked the class. "It was an accident," we said. "Too many things on her plate," said the feminists. "In a hurry to get back to her lover," said one smart alec. "Her parking meter ran out," said another. "Ah," said Dr. Lehmann, "You are ignoring the interpersonal. She may have wanted an excuse to come back. She may have expected the doctor to run after her with the case and, thus, to spend more time with her, shortchanging his next client, whom she saw as a rival. She may have wanted to give him the case as a gift, but had not wanted to do it directly, in case he refused. Maybe it was a test to see if he would keep it, if he could be trusted. Maybe she wanted to show him that, despite medical advice, she was a smoker, a rebel. Maybe it was an expensive case and she wanted to show off her wealth. Or it was a

stolen case and her guilt made her leave it behind, a confession and an expiation.” Dr. Lehmann went on with more possibilities, more on the mysterious motives that make people unconsciously do things to evoke complicated responses from others. It was this lesson, more than reading Freud, that taught us about transference and the power of the unconscious, and this from a man who is considered a “biological” psychiatrist.

In later years we used to meet Dr. Lehmann at the ACNP conferences in Puerto Rico. This famous, beloved man was always wandering around alone. It said something about him, but also something about the sociological aspect of large group meetings, the loneliness of being in a crowd. Sometimes we saw him go scuba diving and he was no longer young by then! An intrepid man. Independent. Brave. Thoughtful. A man for all seasons.

January 28, 2016

Barry Blackwell’s reply to Mary and Philip Seeman’s comment

Thank you for this tribute to Heinz Lehmann’s teaching, along with that wonderful vignette of the “silver cigarette case.” As you testify, Heinz was indeed an inspiring mentor and powerful role model. You perceptively note he was also far more than the stereotype of a “biological psychiatrist.” I have found this to be the case, almost without exception, in the many brief biographies I wrote for the Oral History of Neuropsychopharmacology and even more obviously so in the lengthy biographies posted on the INHN website. Your comments will become part of the Heinz Lehmann file as a valuable contribution to a full portrait of the man admired by so many of his colleagues and students.

April 7, 2016

Per Bech's comment

I started as a research assistant at Professor Ole Rafaelsen's Psychochemical Research Unit at the University of Copenhagen in 1970. I was, therefore, too young to take part in the 7th CINP Congress in Prague, in 1970 with Heinz Lehmann as president. However, in 1972, I participated at the 8th CINP Congress in Copenhagen. Erik Jacobsen acted as president with Tom Ban as secretary. Some years later, I followed Jacobsen as a committee member of the Scandinavian College of Neuropsychopharmacology (SCNP).

My personal contact with Heinz Lehmann was established through Professor Paul Kielholz in Basel. Kielholz played a major role in encouraging, on the one hand, the WHO Department of Mental Health in Geneva to focus on the treatment of depression, and on the other hand, the drug companies in Basel to continue their development of antidepressants, e.g. Ciba-Geigy on imipramine and clomipramine, Roche on amitriptyline and isocarboxazide. At a meeting at Kielholz' Department of Psychiatry at the University of Basel, I was introduced to Fritz Freyhan and Heinz Lehmann. Both were German emigrants to the United States or Canada after having studied medicine in Berlin. Like Kielholz (1974) himself, they were thoroughly versed in basic German psychiatry of Kraepelin and Jaspers and they were very interested in my study from 1975 on the six target symptoms in the Hamilton Depression Scale.

Later on, I contacted Heinz Lehmann about the Brief Psychiatric Rating Scale (BPRS) and was informed that in connection with the multicenter trials on clozapine he had produced a video-taped interview with schizophrenia patients in his Department of Psychiatry at McGill University in Montreal for Sandoz, a Basel based drug company. I received a copy of these BPRS interviews from Dr. Kurt A Fischer-Cornelssen of Sandoz' Medical Research Division. However, after the 1990 CINP Congress in Kyoto, I realized that the Positive and Negative Symptom Scale (PANSS) which was based on the 18-item BPRS was enlarged into a 30 items scale and it was this 30-items scale that was used internationally in clinical trials with

antipsychotics. Then I received the video-taped PANSS-30 interviews from Janssen Pharma, the major promoter of the PANSS-30. They were certainly not with Heinz Lehmann as interviewer.

We have recently made a clinimetric analysis of the PANSS-30, resulting in a “target symptoms” version with six items (PANSS-6) (Ostergaard, Lemming, Mors, Correll, Bech, 2015).

These six items are quite concordant with the DSM-5 schizophrenia symptoms. These six items are included in the Heinz Lehmann interviews using the BPRS. It is really a privilege to have access to these Heinz Lehmann dialogues with schizophrenia patients. His empathy (Gehör) and his flexibility in capturing the target symptoms of schizophrenia are based on his “Gemütlichkeit” which I myself felt from the very first moment when Paul Kielholz introduced me to him in Basel.

When I was asked to find a motto for my chapter on the assessment of positive mental health in the Clinical Handbook on Positive Psychiatry edited by Jeste and Palmer (2015), I recalled these words from Lehmann: “I don’t care whether it is mind or whether it is organic – it is clinical!”

I have never visited Heinz Lehmann’s clinical “garden” in Montreal but I have the video interviews and for many years I have been in close contact with Tom Ban, who still reminds me of this garden.

I would very much like to finish this Comment by referring to Heinz Lehmann’s retrospective view on his CINP Congress, in 1970, in Prague. He concluded with this very personal opinion quoted in a book edited by Ban and Hippus (1988), on pages 26 to 27:

“Psychopharmacology had its start with clinical observations on associations between drugs and their clinical effects. Stimulated by these observations, research was then able to establish causal chains in neuropharmacological discourse. But we do not know – and possibly never will – a transducer from neural events to experiential effects. If we want to remain knowledgeable about the notorious psycho-physical parallelism on which psychopharmacology, after all, has to rely for its clinical pay-off, we must renew our clinical contact with individual patients – a contact that is in danger to be lost in the virtual onslaught of new, exciting and anti-

intuitive neuroscientific data which research has produced in recent years. Most of these data are instrument-oriented and some of the many find clinical application only in a faraway Star Trek future. The psycho-social, even the idiosyncratic personal components of a psychiatric pharmacology will need to be re-integrated into neuropsychopharmacology. But perhaps time will take care of this in the never-ending dialectic of the insoluble mind-body problem.”

These considerations are very much in accord with the historical review of the SCNPN made by Bech and Ban (2014).

Recently, when I made a follow-up study on patients with treatment-resistant depression, I found that the clinically most important paper in this respect was authored by Heinz Lehmann (1974).

References:

Ban TA, Hippus H, eds.. Thirty years CINP – A brief history of the Collegium Internationale Neuro-Psychopharmacologicum. Berlin: Springer-Verlag; 1988.

Bech P, Ban TA. A short historical review of SCNPN with special reference to the UKU. *Acta Neuropsychiatrica* 2014; 26(1): 4.7.

Jeste DVP, Palmer B.W, eds. Positive Psychiatry. Washington D.C.: American Psychiatric Publishing; 2015, pp 127-143.

Kielholz P, ed. Depression in everyday practice. Bern: Hans Huber Publisher; 1974.

Lehmann HE. Therapy-resistant depression – a clinical classification. *Pharmakopsychiatrie-Neuro-psychopharmakologie* 1974; 7: 156-163.

Ostergaard SD, Lemming OM, Mors O, Correll CU, Bech P. PANSS-6: a brief rating scale for the measurement of severity in schizophrenia. *Acta Psychiatr Scand* 2015. DOI: 10.1111/acps.12526.

February 4, 2016

Irwin J. Kopin's comment

I first got to know Dr. Lehmann when I was medical student at McGill and have added a short comment based mainly on that time, as follows:

What I remember best about Dr. Heinz Lehmann are the times that I, along with about other medical students at McGill University, spent during a rotation in Psychiatry with visits to the Verdun Protestant Hospital. This was in the spring of 1954 (Class of 1955) and was a weekly session in which we were supposed to see patients. Dr. Lehmann turned out to be a master educator. Each week he would have arranged for a single patient introduced to us and explain how we should converse with the patient and what we should observe in their behavior. The patients that he chose were so typical of the subtype of mental disorder, that even today I can recall each the patients that he introduced to us and the kindly, friendly manner with which he presented the patient.

I cannot forget the lady who danced into the room, flitted from one student to the next with comments about their hair, their ties, and making us feel like we should enjoy, indeed over-enjoy her presence. Everyone agreed this was manic behavior. Another time he brought a young man who had obtained a PhD in Chemistry, but soon after had been found wandering in the street nude. When he was induced to us, his conversation was silly and distracted making no sense...hebephrenic. Another patient came into the room dressed appropriately in a suit carrying the daily newspaper and completely appropriate until we asked him why he was in the hospital. He told us about his wife who had controlled his thoughts by X-ray until he was forced to kill her...Paranoid. Dr. Lehmann warned us never to turn our back on a patient with paranoid schizophrenia because they might pick up a heavy object and attack you.

I have never forgotten the psychiatry that I learned for Dr. Lehmann. He had mentioned at that time that there were becoming available medicines that might help these sorts of patients but did not mention chlorpromazine. There have been tremendous advances in Psychiatry and the

subgroups of schizophrenia that we were taught over 60 years ago are not presently fashionable. But the warm, empathetic and gentle manner of meeting with patients that Dr. Lehmann taught by example will never go out of fashion.

I was privileged to be able to see him at meetings of the ACNP and at times remind him of those old days that I so appreciated.

February 4, 2016

Paul Grof's comment: A few personal recollections

Barry Blackwell did a fabulous job describing the life, discoveries and achievements of Professor Heinz Lehmann. Nothing noteworthy could be amended to his description except perhaps complementing Blackwell's essay with some personal reminiscences to add my own touch.

Professor Heinz Lehmann was a major influence in my professional life. I met him for the first time in 1961, when he came to lecture in Prague as part of an international symposium on antidepressants. Having read his earlier papers on the topic, I was curious what he would be like in real life and went to his lectures. As with his publications, I was very impressed by his presentations.

They stood out then and again whenever I listened to him during later years. I found in his thinking unusual combinations: originality linked with an intimate knowledge of tradition; and American-style borderless innovation united with classical German precision. Added to all this was an intense fascination with the mystery of the human psyche. He encouraged me to continue with my research on mood disorders, and I kept following his publications carefully, whenever I could get my hand on them in communist Czechoslovakia.

After the Red Army had occupied Czechoslovakia and I came to North America, I was faced with the decision of where to settle and continue my research. Working with Heinz Lehmann, who I so profoundly admired, was high on my list of options.

After I had contacted him, he invited me to visit and give a talk about our lithium research at Douglas Hospital in Montréal. He offered me to work with him. But getting a medical license in Québec and passing French exams turned out formidable obstacles. With only \$20 in the pocket, there was no way to survive the next couple of years that would have been required.

As a solution, Heinz suggested that I could work experimentally, utilizing my Ph.D., but that would have stopped my clinical research in mood disorders. Fortunately, through his multiple connections, Tom Ban found for me a position at the newly opened McMaster University in Ontario. The dream of working under Professor Lehmann had to be abandoned, and I wrote to Heinz how disappointed I was about that.

Since then, Heinz and I kept meeting off and on, in Canada and abroad, at clinical conferences, research meetings and similar occasions. Some events stand out, in particular, a trip to South America.

But I have to preface this. In 1972, Professor Lehmann completed his assignment as a psychiatrist on the Canadian Royal Commission for the Nonmedical Use of Drugs. Set up by the Canadian federal government and chaired by Judge Le Dain, the commission traveled across Canada for two years to collect relevant information. After a very careful analysis of the facts, they then recommended decriminalizing the use of marijuana. The commission was forty years ahead of its time, as in 2016, the federal government finally has the legalization on its agenda.

His task on the Commission was completed but his commitment to the task continued. In 1974, we both participated in an international meeting in Buenos Aires and an extended tour through South America. In Peru, Heinz invited me to visit together some farmers' markets, where Heinz searched for various types of coca leaves and similar products, so that we could sample them by chewing. Heinz felt that it was important to test out the substances about which he had been writing. But the main effect of using the leaves was a temporary anesthesia in the mouth.

This self-experimentation approach was just part of Heinz' philosophy, as he explained it to me – to try as many medications as possible before one actually prescribes them to a patient or passes judgments about them. He was correct, and I fully agree. It is imperative to experience the side effects that patients later describe. Without that subjective experience, the clinician can never fully appreciate what some of our patients go through. From what he told me, Heinz applied some of these principles also to the members of his family.

In Brazil, we had a wonderful time on the beaches of Rio de Janeiro and took several boat trips. Heinz rented diving equipment. And although he was the eldest member of our group, he never missed the opportunity to dive into the ocean. He told me that it is an addictive experience and once you submerge in the sea, you will always want to go back. At the next opportunity, I followed his example, got certified and fully concur with him.

In Rio, we also spent much time in the jewelry shops and admired particularly Brazilian emeralds that Heinz considered special and collected. It turned out that he was enormously knowledgeable about the precious and semi-precious stones and was intrigued by the fact that, with the right equipment, one can identify each precious stone precisely. Another hobby of his, stargazing, was driven by the same desire to identify exactly what one observes. His point was that, in clinical psychiatry, one can never diagnose with the same certainty.

In Canada, Heinz and I met on a number of occasions. One that stands out, in particular, was his visit to Hamilton. In 1978, we designed an early project with transcranial magnetic stimulation. I was afraid to tell him, as I assumed he would be critical of a seemingly far-out idea and think that I was out of my mind. But to my surprise, he had similar interests and could offer many useful suggestions. The extent of his appeals was extraordinary, indeed.

Interestingly, one more opportunity to work together with Heinz came up in 1990's, when I was invited to interview for the Directorship of a psychiatric research institute in Montreal. Despite his retirement, Heinz became a senior member of the institute's leadership. But it was a complex situation, not meant to be. This time, it was Heinz who wrote to me, regretting that another opportunity for working together did not materialize.

The last time I talked to him was a couple of months before he passed away. The Canadian Journal of Psychiatry was preparing an issue on mood disorders, and my task was

asking Heinz for an Editorial. In the past, he had never shied away from any challenge. This time it was different. He did not feel well enough to take on the task.

Heinz Lehmann was an extraordinary man to whom I feel very grateful and whom we all deeply admired.

April 07, 2016

Barry Blackwell's reply to Paul Grof's comment

Thank you Paul for your kind words on the bio and for providing such wonderful reminiscences and anecdotes. They will be incorporated in the Lehmann file and included in a future e-book.

June 23, 2016