

Barry Blackwell: Pioneers and Controversies in Psychopharmacology

Chapter 9: Women Pioneers

Nine Women Pioneers: Victoria Arango, Paula Clayton, Jean Endicott, Barbara Fish, Katherine Halmi, Nina R. Schooler, Rachel Klein, Judith Rappaport, Myrna Weissman

None of the major biographies in this volume were about women. Out of the 57 mini-bios (*dramatic personae*) I wrote for the OHP prior to publication in 2011 only 10 were women, nine of whom had careers that fell within the pioneer period 1949-1970. Putting aside differences in detail and length, the 10 male and nine female biographies can be considered a comparison group with regard to major career accomplishments.

Whatever cultural factors determined disparity in numbers between genders, competence and clinical diversity were not among them.

The women included basic science attributes and clinical accomplishments across the spectrum of child and adult life. Five women held Ph.D. degrees in a variety of disciplines including statistics; neuroanatomy; epidemiology; psychology and social work; and they made contributions in social function, suicide and relapse prevention, quality of life, interpersonal psychotherapy and multiple factors in schizophrenia, including the interaction of psychosocial factors with drug therapy. Four women were physicians working on clinical aspects, drug responses and outcomes of depression, bereavement, eating disorders, schizophrenia and a variety of childhood disorders.

By any measure of career accomplishment women performed with distinction equal to male peers, including grants awarded from government; foundations and industry; volume and impact of original contributions; and scientific publications, mentorship, leadership roles at NIMH or professional organizations, work as journal reviewers or task force members at the FDA or APA, including development of DSM diagnostic criteria.

These career accomplishments were recognized by prestigious professional and lifetime achievement awards to women simultaneously fulfilling traditional child rearing and spousal roles. Two of the pioneers also received recognition as outstanding female and scientific role models.

Dramatis Personae

Victoria Arango is a pre-eminent member of a handful of neuroanatomists in America who study the human brain in a search for correlations between structure, function and behavior. She grew up with plans to become a physician, but was enchanted with basic science in her senior year after she won a first prize for undergraduate research and graduated Cum Laude from the College of New Rochelle.

Her subsequent career path knits together basic science research and clinical psychiatry. After obtaining her PhD in Neuroanatomy she became a research associate in the Division of Neurobiology at Cornell University and a year later was appointed an Instructor in the Cornell Department of Psychiatry. After only 10 years she became Co-Director of Neurobiology and seven years after that was appointed Full Professor in the Department of Psychiatry.

The theme of Dr. Arango's research was set when she began a post-doctoral fellowship with Dr. John Mann (a psychiatrist) and Dr. Don Reis (a clinical and basic scientist). Later they were joined by her husband Mark Underwood (a neurophysiologist). Her colleagues had discovered that people who committed suicide possessed an elevated number of serotonin receptors and they needed a neuroanatomist to examine the brains to detect any associated anatomical and cellular changes.

This interview relates the innovative basic science and clinical strategies Dr. Arango and her collaborators developed and the intriguing outcomes that unfolded over the next two decades. She also explains how studying death has made her reverential of life and hopeful that one day the research will accomplish the dual benefit of predicting risk and diminishing cultural stigma that so often discourages people from seeking help. Untreated major mental illness remains far too frequently fatal.

While this research has a singular focus its progeny has been prodigious and diverse. In 20 years (1988-2007) the team has published almost 100 articles in leading peer reviewed journals of which Dr. Arango has been senior or first author in a third. The research has been funded by

NIMH grants totaling in excess of \$5 million, awarded over periods from 10-20 years. Victoria has also been a tireless and lifelong mentor to dozens of graduate students, research fellows and young investigators. She has been a guest lecturer and organizer for numerous national and international conferences and an active member of editorial boards and a referee to nearly 20 clinical and basic science journals. Finally, she is a member and often chairperson to many study sections and review committees that influence and fund the future direction of brain research.

To read about *Paula Clayton*'s early years as a medical student, psychiatric resident and young faculty member is to understand the Zeitgeist which gave birth to neuropsychopharmacology, those who helped create the new discipline and the pioneer role of women during its inception.

Dr. Clayton was born and raised in St. Louis to college educated parents who steered her towards medicine even though she was one of only two female medical students when she entered Washington University in 1956. Eli Robins, Chair of Psychiatry, had graduated from Harvard, imported scientific method to the department and recruited a likeminded faculty that included Sam Guze, George Winokur and Eli's wife, Lee Robins. Almost unique in America, the department shunned psychoanalysis to embrace the European brand of descriptive psychiatry epitomized by Kraepelin, Bleuler, Fish and Strömngren. From day one residents were required to become involved in research, encouraged in critical thinking and trained in diagnostic interview techniques that later became refined as the Feighner Criteria and incorporated into the DSM III. Imipramine was used as early as 1958 and lithium in 1962 before it was marketed or approved by the FDA. The department included a basic science laboratory with a mass spectroscope and she became involved in the first studies linking drug levels and clinical response.

As a "token" female, Paula was on the "lunch brigade" that welcomed many of Europe's outstanding young researchers and Grand Rounds speakers including Jules Angst, Bob Kendall, John Wing and David Goldberg. Mentored by George Winokur she was quickly immersed in research and developed her first funded study comparing the stages of bereavement with depression.

Dr. Clayton moved from chief resident to Full Professor in 10 short years, during seven of which she worked half time and raised three children. She co-authored her first book on *Manic*

Depressive Illness in 1969 having previously described the clinical and hereditary features of major depression, bipolar and schizoaffective disorder.

In 1980 Dr. Clayton left St. Louis to become the Head of Psychiatry at the University of Minnesota School of Medicine attracted by its potential for growth in research. As her administrative roles expanded she became less involved in first hand research but encouraged and mentored young faculty to undertake clinical trials in collaboration with pharmaceutical companies. She established separate academic and clinical faculty tracks to support research and education in the department and expanded the research budget from \$300,000 to \$11 million.

During the 19 years Paula was a department head she became involved in extensive committee work for the ACNP and the AMA and served as president of three organizations: the American Psychopathological Association, the Psychiatric Research Society and the Society of Biological Psychiatry. She also served on the boards of eight psychiatric journals and as a member of national and governmental research advisory committees, private foundations, pharmaceutical companies and advocacy organizations that included psychiatry, medicine, behavioral science and veteran's affairs.

Dr. Clayton's research output has been prolific including more than 150 scientific articles on which she is first author of a third. Not surprisingly, in 1991, she received a lifetime research award from the National Depressive and Manic depressive Association.

After she stepped down as Head of Psychiatry in Minnesota, Paula enjoyed a brief retirement before returning to half time work at the University of New Mexico where she is again involved in research and mentoring women residents. As she says, "I started with research and I'm going to end with research."

Jean Endicott is Professor of Clinical Psychology at Columbia University, an honorary Fellow of the APA and a member of the ACNP for over a quarter of a century. This interview, by the Director of Research for the APA, details her unique and unequalled contributions to the scientific measurement of psychiatric disorders essential to their classification and the assessment of treatment outcome.

Jean was born with a sense of curiosity and urge, to perform experiments that began as a young child cultivating beans and melons from worm beds in her father's garden. Her initial inclination to become an organic chemist was nipped in the bud when a summer student stint in a

hospital emergency room persuaded her that people were more interesting than molecules. She chose an eclectic undergraduate honors program that kept her options open until a course in abnormal psychology “hooked” her and she enrolled in the clinical psychology graduate program at Columbia University Teachers College, known for its strong curriculum in measurement, assessment and statistics. Married to a future psychiatrist at the age of 18, Jean’s first publication, co-authored with her husband, was on *Objective Measures of Somatic Preoccupation*, published in 1963 while she was still a graduate student.

Following graduation Dr. Endicott met Eliot Spitzer at a cocktail party when he had a new grant and was looking for a research assistant to interview patients using the Mental Status Schedule he had developed. Thus began over a decade of close collaboration at the time when NIMH was gearing up to perform large scale collaborative studies of the new psychotropic medications under the aegis of the Early Clinical Drug Evaluation Unit (ECDEU) program. A major task was to expand the Feighner Criteria developed by Eli Robbins and the faculty at St. Louis, leading to the Research Diagnostic Criteria (RDC), which in turn created the framework for DSM III. The scales developed in this period were employed in the five centers Collaborative Depression Study - begun in 1978 - which continues to provide follow up data. Much of the work accomplished in just over a decade was summarized in the Chapter on Psychiatric Rating Scales published in the *Textbook of Comprehensive Psychiatry*, published in 1980. These included the Global Assessment of Functioning (GAF) scale that replaced Axis V in DSM III R.

Overall, Dr. Endicott’s contributions to psychometrics have been prodigious. Prior to 1993 she had been a co-author on almost 300 studies or book chapters, many published in the world’s leading clinical and pharmacology journals. She has been principal, co-principal or co-investigator on 24 research grants, mostly funded by the branches of NIH and a co-author or consultant in the development of an equal number of evaluation instruments. These include seminal studies of premenstrual mood disorders that led to the inclusion of Premenstrual Dysphoric Disorder (PMDD) as a supplementary diagnosis in DSM IV. This, in turn, resulted in the FDA Psychopharmacology Advisory Committee (of which Jean was a member) approving several drug studies for this indication.

More recently, she has been involved in developing quality of life, enjoyment and satisfaction measures (Q-LES-Q) that are independent of diagnosis or specific symptoms, the adult form of which has been translated into 72 languages or dialects for use in both medical and

psychiatric settings. Many of these instruments may have an even more important role as computers and electronic records begin to play a larger role in contemporary medicine.

Jean Endicott serves on the editorial board of *Psychosomatic Medicine* and *Neuropsychopharmacology*, has been President of the American Psychosomatic Society and a consultant or committee member of many national organizations, including NASA as an advisor on astronaut selection!

Somehow or other Jean and her husband also find time to collect tribal and early American art.

Barbara Fish is an Emeritus Life Fellow of the ACNP (1961) which, in its earliest days, comprised a membership of 100 men and five women. She is a pioneer, the first female psychopharmacologist, whose scientific career is described as a model for professional women in Ruth Halcomb's book, *Women Making It*, published in 1979, in New York.

Barbara was the only child of a mechanical engineer devoted to science. As a five-year-old she remembers her father explaining the 1925 total eclipse of the sun with a light bulb, a grapefruit and an orange. Encouraged to study nature and science she earned scholarships throughout high school and college, graduating summa cum laude from Barnard College of Columbia University before completing medical school at the end of World War II and winning the Alpha Omega Alpha prize for the highest scholastic rating.

She completed internships in medicine and pediatrics before a residency in psychiatry that concluded with two years on the child psychiatry service at Bellevue Hospital where she was mentored by Loretta Bender as a senior resident, looking after 150 psychotic children a year, admitted from the Bronx and Manhattan.

Dr. Fish began her academic career in 1955 as an Instructor in Psychiatry at Cornell Medical Center and Child Psychiatrist in Pediatrics at New York Hospital. She completed psychoanalytic training the following year at a time when the only medical treatments for children with psychotic disorders were electric shock, phenytoin and diphenhydramine. Even before chlorpromazine became available her astute clinical observations in very young children convinced Barbara that "there was definitely something wrong in the brain in schizophrenia." Studying and comparing two birth cohorts from a Well Baby Clinic and a State Hospital sample of children of schizophrenic mothers she detected alterations and fluctuations in neurological and

psychological development as early as two and a half months that were clearly genetic. Her observations included home visits, immediate availability to mothers and long term follow up that has lasted 50 years in some cases.

Dr. Fish raised funds and quickly developed a large fellowship and residency training program at Bellevue including inpatient and outpatient care with parent and patient groups as well as weekly parties for the children. When chlorpromazine became available and proved effective in adult schizophrenia she collaborated with Ted Shapiro in a series of placebo controlled ABA designs that were the first successful psychopharmacology studies in children with the drug. In 1961 they set up a psychopharmacology research unit at Bellevue, funded by NIMH for a decade. She became the first child psychiatrist and only woman to interact with the small group of adult investigators that formed the NIMH funded Early Clinical Drug Evaluation Units (ECDEU).

Fifteen years after the start of her academic career in 1970 Dr. Fish became Full Professor of Child Psychiatry at NYU and in 1972 she and her husband moved to California where she became Professor of Psychiatry at UCLA. This marked a significant transition in her interests away from psychopharmacology. A number of factors contributed, scientific and socioeconomic, to her decision to move. In 1963 or 1964 she had listened and disapproved as the head of NIMH spoke to the ACNP, predicting a biologic cure for schizophrenia and approving of the closure of State Hospitals and inpatient units. This led to shorter durations of inpatient treatment and an attitude where “we start to talk about whether a drug works as opposed to really getting to know a child well.” Fragmentation of care made longitudinal studies difficult to conduct.

Dr. Fish also disapproved of the rigidity and diagnostic parsimony of DSM III compared to the typology of child development she had so painstakingly developed. And finally, she felt that pharmaceutical companies used financial incentives to divert academic interests away from long term outcome studies. “It’s not where you make money, if you really want to take care of sick people.”

These beliefs clearly influenced how Barbara Fish chose to spend the remainder of her career. She returned to her earlier interest in the phenomenology, natural history and outcome of childhood onset schizophrenia seeking funding exclusively from NIMH and private sources including the MacArthur Foundation, the W. T. Grant Foundation, the Scottish Rite Schizophrenia Research Program and the Della Martin Foundation which also endowed a named Chair of Psychiatry in her honor. The topics she pursued included risk and protective factors in prognosis,

information processing as a risk factor, adult outcome of infants at risk and the effect of early development on personality.

In 1987 Dr. Fish's lifetime accomplishments led to receiving the Agnes Purcell Mc Gavin award from the APA "for outstanding contributions to the prevention of mental disorders in children, including ground breaking research on the long term outcome of infants born of schizophrenic mothers."

As people read this interview they may well conclude that, for Barbara Fish, psychopharmacology was a rite of passage. When she left Bellevue and relinquished her interest she noted, "I'd learned what I wanted."

Katherine Halmi is the self-styled "grandmother of the eating disorder field," a title she earned by devoting more than 30 years of her career to research on a topic she was among the first to study.

Katherine earned her undergraduate and medical degrees from the University of Iowa on a General Motor's Scholarship and began her research career doing chromosome counts as a medical student and publishing her first paper on the identification of Trisomy 18 while a pediatric resident in 1968. Her other major interest was endocrinology, fostered by her husband, who was Editor of Endocrinology, and who mentored her in critical thinking.

After board certification in pediatrics she studied cortisol metabolism, completed a fellowship in child development as a faculty member at the University of Iowa and then decided to take a second residency in psychiatry. George Winokur was Chair of the Department, mentored her in research principles and methodology and suggested she explore the topic of anorexia, then a field with few publications on the border with endocrinology. As a first year resident she spent her lunch hours combing through the medical records of the Iowa Psychopathic Hospital to find a cohort of 96 women and four men who met the Feighner criteria for anorexia, published in 1972. From these she located a group of 76 subjects, admitted them for endocrine studies and a standardized interview, followed them up and published her findings.

With Winokur's endorsement and encouragement Dr. Halmi soon became identified as a regional and national expert in the new field of eating disorders, in charge of a 30-bed inpatient unit. In 1979 she moved to Cornell Medical Center (Westchester Division) to run an inpatient unit

and eventually become Director of the Anorexia and Bulimia Clinical Research Program and a Full Professor of Psychiatry (1986).

This interview provides an account of more than 20 years research supported by more than \$3 million in grants, mainly from federal and foundation sources, including seven NIMH projects, awarded between 1975 and 1996.

Dr. Halmi's studies were among the first to distinguish anorexia from bulimia nervosa and to demonstrate differences between them in response to serotonergic challenge tests. There were significant difficulties to be overcome, including the problem of adequate sample sizes in anorexia patients reluctant to accept treatment (cooperate with research protocols) and whose severe physical condition made randomization to a control group unethical. Bulimia patients, on the other hand, were motivated to recover and studies soon demonstrated the efficacy of antidepressants, irrespective of mechanism, although only 20 to 30% recovered completely compared to double that number treated with sophisticated cognitive behavioral methods.

Although antipsychotics have been used with modest success to induce weight gain and diminish hyperactivity in anorexia, there have been no controlled studies perhaps because the condition is too rare for commercial consideration, prognosis is poor, chlorpromazine is generic and weight gain due to olanzapine might draw attention to an undesirable side effect for its accepted indications.

This interview includes interesting commentary on the role of the press in capitalizing on the dramatic aspects of eating disorders, the popularity of esoteric unproven treatment programs and the influence of culture and cosmetic concerns on the incidence and prevalence of the disorders.

Dr. Halmi is the Chairman of the APA Task Force on Treatment of Eating Disorders and is critical of undue influence exerted by psychoanalysts and family therapists on the development of guidelines based on anecdotal outcomes. This "unempathic" attitude resulted in her being "disinvited" from the deliberations and led her to the interesting suggestion that, because the APA process is so heavily political, the ACNP might consider producing its own guidelines!

Turning from politics to science Dr. Halmi reveals some fascinating early data in a multinational study, funded by the Price Foundation, of 100 sibling pairs with either similar or discordant eating disorders which reveals DNA evidence of an abnormality on Chromosome 1 for anorexia nervosa (restricting type). This chromosome involves both a serotonin and an opioid

receptor site. She concludes the interview with her opinion that the future development in eating disorders lies in the genetic aspect – an interesting opinion by someone whose career began in that field more than 40 years ago.

In conclusion, Katherine Halmi has served as President of three national organizations in her areas of research; the American Psychopathological Association, the Society of Biological Psychiatry and the Eating Disorder Research Society. As a metaphorical “grandmother” she has spawned a heritage of fertile research projects and ideas in the field of eating disorders.

Nina R. Schooler is a pioneer in two senses; born in New York in 1934 she was a member of the first class of women (1951), admitted to the general study programs at the College of the City of New York (CCNY). She was also one of three women elected to the ACNP in 1975, doubling the total number of female members to six. Only three of 47 ACNP Presidents have been women, the first in 1988 (Eva Killam), 27 years after the ACNP was founded by an all male organizing committee.

Scientifically Nina has been a participant in almost all of the important research on schizophrenia over the last 37 years, beginning when Sol Goldberg recruited her as his part-time research assistant at the newly formed Psychopharmacology Service Center (PSC) set up by Jonathon Cole at NIMH (1963).

Nina’s undergraduate degree was in anthropology (1955), supported by a New York State Regent’s Scholarship and the Tremaine Scholarship from CCNY. Her graduate work in Social Psychology at Columbia University began in 1956 and continued part time for 13 years until her PhD. in 1961 on language patterns in schizophrenia, based on the patient population in the first NIMH 9 hospital collaborative study of chlorpromazine and placebo, co-ordinated by Sol Goldberg and Nina.

When that study began Nina “didn’t know anything about psychopharmacology” and she describes her feminine role, at a time of cultural “modest expectations,” with a quote borrowed from George Bernard Shaw’s description of women preachers: “It’s like a dog walking on hind legs. You admire the fact that it does it and don’t comment on the quality.” But Nina was good at what she did; prior to NIMH she worked in market research, co-coordinating researchers and their data, “a task I’ve been doing ever since ... but in other areas.”

Surrounded by a cadre of the best psychopharmacologists in the field and with excellent mentoring from the likes of Cole, Klerman and Goldberg, Nina quickly gained skills, credibility and responsibility. Armed with her new found title as “Dr.,” she attended her first ACNP meeting in 1970, joined Sol’s study group on “Prediction of Response in Schizophrenia” and from then on (1971-1988) she helped design and co-ordinate the NIMH sponsored series of drug studies in schizophrenia which set the benchmarks for future clinical practice. Nina notes, “I’m a really good collaborator and mentor,” talents predicted by a grade school report that, “she works well with others.”

The interview with Tom Ban in 2001 relates the sequential studies completed over 17 years, defining the short and long term effects of phenothiazines, optimal treatment regimens, relapse rates, compliance and placebo response and, ultimately, with Jerry Hogarty, the interaction of drug with psychosocial treatment.

Dr. Schooler retired from the NIMH in 1988 to become a full time academic at the University of Pittsburgh (1988-1997) where she was appointed Professor of Psychiatry (1992) and Professor of Psychology (1994) with the title of Director of Psychosis Research. She remained involved in bringing the NIMH studies to completion but also set up her own independent Special Studies Center at Mayview State Hospital where her research focused on treatment in both first episodes of schizophrenia and chronic refractory cases. In collaboration with industry she also began a series of studies on clozapine, and then other “second generation” anti-psychotics.

In 1997 Dr.Schooler moved to New York to join John Kane and became Director of Psychiatry Research at Zucker Hillside Hospital (1997-2003). In those five years she continued her work with second generation antipsychotics comparing clozapine with haloperidol and risperidone with olanzapine. She also worked with NMDA agonists in treatment, focusing on negative symptoms.

After New York, Dr.Schooler moved her base of operations to the VA Medical Center in Washington DC to become Senior Research Psychologist (2004-Present) with academic appointments as Professor of Psychiatry at SUNY and Adjunct Professor of Psychiatry and Senior Psychiatric Neuroscientist at Georgetown University School of Medicine (2004-Present). Consistent with her lifelong pattern of collaboration and continuity she maintains academic and collaborative relationships in both Pittsburg and New York.

Throughout her independent (post NIMH) career Dr. Schooler's research has been supported by 14 NIMH grants (two current) and 16 industry projects (two current).

The full measure of what Nina would make of her encompassing experiences and unique career were not clear at the time her interview took place in 2001. The subsequent decade (2001 – present) has been a period of remarkable productivity and expanding influence during which Nina remains fully active at an age when many colleagues and contemporaries have long since retired. Comparing the first half of her career (1966-1983) with the second (1984-present) the number of her scientific publications has quadrupled (26 to 104) and book chapters have tripled (8 to 22). The topics in this literature cover her personal involvement in virtually every aspect of schizophrenia, its treatment and outcome.

In the last 10 years Dr. Schooler has been active in sharing and disseminating her extraordinary knowledge of the field. In addition to teaching medical students, psychiatric residents and psychology interns in her hospital and university settings she has been a guest lecturer or visiting professor in 18 foreign countries (Europe, Asia, Africa, South America and Scandinavia) and 23 states in America.

In addition to research, teaching and her continuing collaborations Dr. Schooler participates actively in the professional arena. She is a Fellow and Past President (2000) of the American Psychopathological Association; Fellow and Past President (1991-1993) of the Association for Clinical Psychosocial Research; Fellow and Council Member (2004-2010) of the CINP and she has been a member of 8 ACNP Committees over 30 years (1979-2010).

Nina has served on the Editorial Boards of five journals and is a reviewer for many more; she is active in NAMI and NARSAD and an advisor to the APA DSM task forces on tardive dyskinesia, psychotic disorders and schizophrenia. She has been a consultant and member of work groups, research and advisory panels, review committees and study sections for the NIMH, VA and FDA.

At the end of his interview in 2001 Tom Ban's final comment is, "you seem to intend to keep on going." Never were truer words spoken!

Rachel Klein's precedent setting career in pediatric psychopharmacology did not evolve exactly as she anticipated.

Born of Russian parents and raised in France, she immigrated to the United States at the age of 15, after World War II ended. During her undergraduate degree in literature at New York City College she worked with ghetto children in a community center, fell in love with the kids and decided to do graduate studies in a prestigious clinical psychology program at Teacher's College, Columbia University. She took a summer job at Hillside Hospital, evaluating patient outcomes in the earliest adult psychopharmacology studies, conducted by Don Klein, Max Fink and Max Pollock. Despite the prejudice of her discipline against drug use, she was struck by the contrast between the ideologically based dicta of graduate school and the serious, empirical and data based approach she encountered in her psychiatric mentors. This viewpoint was strongly reinforced by witnessing the rapid recovery of severely depressed patients treated in one of the first pre-marketing studies of imipramine. "It seemed miraculous."

Rachel's first publication while still a graduate student was on the *Effects of Psychotropic Drugs on Long Term Adjustment*, published in *Psychopharmacologia* in 1964. Her PhD. dissertation topic, "The Prognosis in Schizophrenia," was influenced by the views of Max Pollock and Don Klein on developmental psychopathology and her reading of Kraepelin's descriptions of the influence of childhood on the natural history of the disorder. She graduated with her PhD in 1966 but only after a hostile and critical review of the dissertation for its relative lack of psychological input and failure to emphasize the role of families in the etiology of schizophrenia, the prevailing psychoanalytic theory at the time.

Following graduation Dr. Rachel Klein joined Dave Engelhardt in the new psychopharmacology branch at Downstate Medical School where he was conducting one of the first studies on the outpatient treatment of schizophrenia. She was hired to prepare and administer a grant for the comparison of chlorpromazine and diphenhydramine in young children with autism and developmental disorders which confirmed the superior benefit of the antipsychotic in reducing uncontrollable behavior.

This outcome reinforced her commitment to child psychiatry and she returned to Hillside Hospital to work with Don Klein (later her husband) on the treatment of separation anxiety in children (aged 6-15) with imipramine. Subsequently they moved on to study the use of stimulants in attention deficit hyperactivity disorder.

This interview documents her subsequent career and move to Columbia University (1978) where she has been Director of Clinical Psychology at Presbyterian Medial Center and Professor

of Clinical Psychology (since 1980). The topics discussed cover a wide range of issues in which Dr. Rachel Klein has played a pivotal role. These include the influence of adult psychopharmacology on pediatric research and clinical practice; the controversies surrounding the development of the DSM criteria for separation anxiety and attention deficit disorder; the social and cultural issues in antagonism toward drug use in children; the etiological theories of attention deficit disorder and the ineffective role of adjunctive cognitive; and behavioral and social interventions in its treatment outcome.

Prevailing throughout the dialog in this interview is a tone of creative and benevolent skepticism. As Rachel herself comments, “I’m not an easy believer and don’t join bandwagons easily; that’s probably why I went into research.”

It has been a productive career which includes more than 150 articles and book chapters published in just over 30 years (1964-1995), editorship of four books and author of two, including *Anxiety Disorders in Children* (1989). Dr. Rachel Klein is an Honorary Fellow of the APA and a Fellow of the ACNP (1973), a consultant to the FDA and the APA Task Force on Nomenclature and Statistics (DSM III), Associate editor of the *Journal of Child and Adolescent Psychiatry*, member of six other editorial boards and a reviewer for 15 journals.

Judith Rapport’s lifetime leadership role in child psychiatry began with an NIMH postdoctoral fellowship 47 years ago (1962) and continues today as Chief of Child Psychiatry at NIMH (since 1984). She is also a full Professor of Psychiatry at George Washington University School of Medicine (since 1979).

Although she claims that her choice of child psychiatry might have been “the best way to get a job,” her early career was shaped by a variety of mentors, role models and experiences. Included were a grandfather who produced theatricals (an asset in making scientific presentations), a friend’s mother who was also a psychiatrist and pioneer in the use of Antabuse (disulfiram) and a magna cum laude undergraduate degree from Swarthmore College where she was exposed to an experimental psychology department that did “reliable research in complex behaviors.” Because Harvard Medical School psychiatry at that time (1955) was dominated by psychoanalysts, she spent a student elective at Queen’s Square in London, working in neurology under MacDonald Critchley, where she learned “strange and wonderful ways” to view phenomenology. Judith completed her psychiatric residency at St. Elizabeths’ Hospital in Washington DC looking after

300 chronic patients, found “Kraepelin more useful than Freud” and learned to make “my own observations and come to my own conclusions.”

This was followed by a two-year post-doctoral fellowship in Sweden (1962-1964) where she was exposed to a strong biological approach including work on amphetamines in humans, physiological arousal in psychopaths and memory deficits following ECT. She also studied women coming from the USA to Sweden for abortions (later published in *Archives of General Psychiatry*).

On returning to America Dr. Rapoport took child fellowships for three years (1964-1967) including work with a pediatric neurologist at Children’s Hospital in Washington DC. After this she worked for a year at an inner city clinic where she provided medication for mothers and their children, a kind of “domestic Peace Corps experience.” This was where she first saw normal children sharing their siblings’ stimulant medication for ADHD and experiencing identical calming effects. This controversial observation (at the time) was later confirmed with carefully controlled experiments at the NIMH on her own and staff members’ normal children.

This interview details the next 40 years of Dr. Rapoport’s distinguished career at NIMH with increasing levels of administrative responsibility and growing international recognition (1967-2008). Early on she pioneered the introduction of structured interviews, inter-rater reliability and double blind studies. She was involved in the development of pediatric criteria for DSM III and its later editions and describes the competing ideologies among the public, psychotherapists, psychologists, social workers and managed care companies. She considers most of the criteria “probably premature” and introduced to satisfy the need to document care for reimbursement.

During this time her research included seminal studies demonstrating the specific response of OCD in children to clomipramine at a time when psychoanalytic theory still dominated the field. This work culminated in the publication of her book, *The Boy Who Couldn’t Stop Washing*, which was translated into 22 languages, sold more than a million copies and transformed public opinion about the condition.

In 1991 she began work on childhood onset schizophrenia and was among the first to show the superior response to clozapine, including an occasional virtual cure.

Later in the interview there is an interesting discussion of the differences between the USA and UK in the use of psychotropic medication in children and of Dr. Rapoport’s active involvement in the ACNP and its committees. She is concerned about a tendency of the organization and its members to shy away from clinical trials with a resulting loss of skilled observation in favor of

pharmaceutical company sponsored studies designed to satisfy FDA requirements for boiler plate documentation. This is occurring at a time when genetic studies are suggesting discrete new disorders concealed within the clinically homogenous criteria of the DSM system.

Dr. Rapoport has been the recipient of numerous awards including the Ittleson Research Prize (APA), Taylor Manor Research Award, NIMH Director's Award, Sacher Award, Winkleman Award, Presidential Meritorious Executive Award, APA Research Award, and the Institute of Medicine Distinguished Service Award.

She is active on numerous Editorial boards and College councils and has served as President of the American Psychopathological Association and the Society for Research on Child and Adolescent Psychopathology.

Myrna Weissman is an icon in our field; a social scientist in a neurobiological arena, a pioneer woman in a male dominated research world and a person who has balanced and excelled in professional and personal life. In this interview some of these accomplishments are hidden behind her sense of humor and humility. Asked if there are awards she would like to mention her reply is, "awards are only important if you don't get them." Listed on her resume, but hardly mentioned in the interview, are 18 prestigious awards from national and international organizations recognizing her lifetime scientific contributions.

Also listed are many named lectureships, Fellowships in the New York Academy of Science, the New York Academy of Medicine, the ACNP (1975), the Institute of Medicine of the National Academy of Science and Honorary Fellowships in the American College of Psychiatrists and the Royal College of Psychiatrists of Britain. Several publications Dr. Weissman has co-authored are citation classics and in 2000 the New York Academy of Science named her "one of the areas outstanding women of science."

The interview reveals a surprisingly mundane start to her outstanding career, the manner in which it blossomed and the influences involved. Myrna was the only child of a Boston small business owner and graduated with honors from Brandeis (1956) before obtaining her MSW from the University of Pennsylvania (1958) at a time when "women were shunted into nursing, social work or teaching." Twelve years later (1970) she was 30-years-old, had four children under age six and didn't like social work, although she had published three articles on social work topics. It was the beginning of the women's movement and when her husband (an NIH scientist) accepted

a faculty position at Yale she took a part time job, working two days a week, for Gerry Klerman and Gene Paykel on a study of relapse prevention in depression. She was asked to develop a cognitive treatment package and outcome measures to accomplish this.

Four years later (1974) the research team had failed to find a better qualified full time social worker and Dr. Weissman had proved her worth. She had obtained her PhD in Chronic Disease Epidemiology from Yale, written her first book (with Gene Paykel) on social relationships in depressed women and had published 22 articles in scientific journals of which she was the first or only author on 15. She had obtained several of her own grants; “it wasn’t difficult to get funded if you had ideas,” continued to work and write at home, care for her children and “had no bosses.”

Fifteen years later (1987) she was a Full Professor of Psychiatry and Epidemiology and the first woman to obtain tenure in the Department of Psychiatry at Yale. By now she and Gerry Klerman were married and in that year they moved to New York where Dr. Weissman became Professor of Epidemiology in Psychiatry at Columbia University and Chief of the Division of Clinical and Genetic Epidemiology at New York State Psychiatric Institute.

By this time she and her colleagues had published the Manual of Interpersonal Psychotherapy (IPT) and had initiated the multi-site Epidemiologic Catchment Area study (ECA). Both the Social Adjustment Scale and the IPT Manual had been translated into numerous languages and were in widespread international use.

Recently, Dr. Weissman has become involved in the genetic epidemiology of panic disorder and depression, including the identification of children at high risk and the possibility of therapeutic interventions in the depressed mothers.

The interview provides more details of Dr. Weissman’s research and the findings. She states that her future plans are focused on areas that are interesting, likely to lead to answers, and require “serious collaboration with people in biology”. If the past is prelude there is little doubt this will be productive. To date she has published seventeen books, over four hundred and fifty articles and more than one hundred and seventy book chapters. She is active on numerous scientific advisory and editorial boards and is the past president of the American Psychopathological Association (1998).

Three young girls who watched their mother working at home are now grown up. One is a psychiatrist and epidemiologist, a second is a physician and epidemiologist running AIDS

programs at Yale and the third has an MBA and manages a large medical practice. There are also seven grandchildren whose genes and role models are still helping to mold their future.

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