Rapoport, Judith 2017

Dr. Judith Rapoport Oral History 2017

Download the PDF: Rapoport_Judith_Oral_History_2017 (PDF 1.54 MB)

Judith L. Rapoport Oral History Interview

August 28, 2017

Interviewer: Ramya Rajagopalan

Ramya:	Okay, I am going to turn on these. I'm sure you've been interviewed many times before.
Rapoport:	Yes.
Ramya:	I don't know if you've ever had an oral history done?
Rapoport	Yes, through an organization I was in called the ACNP, which wanted an oral history of psychopharmacology. That was some years ago, but on one other occasion.
Ramya:	Okay. Great. I am a historian, and a sociologist and really interested in scientist stories, and like histories and how they come to the work they come to. So, what I like to do when I do an oral history, is start at the beginning.
Rapoport	Good.
Ramya:	I will get a sense of how you grew up, and your childhood. Where you were born, early academic and intellectual influences. So maybe you can talk a little bit about that.
Rapoport	Good.

Ramya:	And before we begin, let me just say this is the interview with Dr. Judith Rappaport. August 28th 2017.
Rapoport	Okay. Good. Well, I grew up in New York City, and by that I mean in Manhattan, where I was born, where my parents, I believe were born. And came from a very idealistic, progressive, secular Jewish family.
Ramya:	Okay.
Rapoport	That sent me to a simply wonderful private school, which doesn't exist anymore. But this is relevant because the Walden school, which was small. Had about 26 in the class, and went from nursery through high school. And they had an ideal, which was in the long run the sociology of education proved more specialized over the years. But during the years when I and my older sister went there, what they aimed to do is to have people, students, trained in the arts as well as the usual academic sciences.
	So that from the very beginning, it was an enormous influence, the emphasis on your own individual creativity. The chorus, which everybody was in, met three times a week, and you had to have a special reason not to be in the chorus. We made jewelry. A woman who taught at the New School, a very wonderful school for adults' downtown, was our oil painting teacher.
Ramya:	And from an early age, your development in oil painting was very important
Rapoport	The graduation ceremony at the school was each class wrote, produced, and directed a play for the parents. And the class play was an important part. The Walden School stopped, oh, a fair number of years ago [1988] merged with the Lincoln School, because more specialized schools in the sciences and in the arts took over, and it was small and it just didn't make it into. But it went for quite a long time. I mean, it certainly went through the 60s or something like that. And then I think that was really very special. And in retrospect I thought many times about how wonderful that is for a background for a researcher. Neither of my parents were scientists. My older sister is an artist, and my father was a, you know, a personnel and book keeper and accountant. My mother taught school and this was not from the family.
Ramya:	Yes.
Rapoport	Except that they thought that early childhood education was very important.
Ramya:	So you were there at the Walden School throughout?

Rapoport	In kindergarten through twelfth grade. And interestingly we tried to pull a 50th high school reunion off, which thanks to the web, we did better that we thought, and about half the class were people like me who become academics, or lawyers or doctors or something. And half the class, there was a modern dancer, there was a poet, and there were several artists. Almost half the class was really in the arts.
Ramya:	That's really interesting.
Rapoport	Yeah.
Ramya:	Yeah.
Rapoport	And the teachers, really from the beginning, you had a sense of how much they wanted you to develop your own ideas.
Ramya:	And so in terms of your exposure to the arts, what was interesting to you during your times at Walden School?
Rapoport	Well, I remember partly because the teacher was so very gifted of liking oil painting. And I discovered also that I like to sing and I have a pretty good voice. I never had voice lessons outside of a chorus, but there was a very dynamic-very dynamic chorus director I sometimes parts. Many of us liked him so much; he had an interracial fellowship choir that met in the evening.
Ramya:	Nice.
Rapoport	From people of all different backgrounds, and it was a big part of our life and a part of the family idealism that I still think of as the American idea.
Ramya:	Have you been able to continue your pursuit of any of these?
Rapoport	Well, one of the first things I've signed up for now that I'm retired, which is as of the end of July. And I'm emeritus here, but, on Thursdays there's a singing a group. A friend of mine through the school downtown called the Levine School of Music, which has become a wonderful force in Washington life. It's a music school that takes on not only the usual families that wants their children but they have sections in the southeast and the public schools and things like that. And, anyway they have during the day on Thursdays, they have a singing group that I'm told is much the one-I happen to have a friend from school who happened to end up in Washington, and then was one of the people that formed that school.

Ramya:	Great. So you have one sister. Any other siblings?
Rapoport	No.
Ramya:	And so are you the oldest?
Rapoport:	No, she's by far the oldest
Ramya:	Okay. Okay. And did she also go to the same school?
Rapoport	Yes.
Ramya:	Okay. In terms of your friends and sort of colleagues that you kept, it sounds like you went to school with them from kindergarten all the way up through 12.
Rapoport	Really.
Ramya:	So did you form close relationships there at Walden?
Rapoport:	Yes and no. One of them became a deputy director for intramural. A guy named Bob Goldberger who was a beloved member of the group here. And I don't know if he died some years ago and I don't know how long this oral history has been going on, was a very special person, very dedicated to NIH.
Ramya:	Ok.

Rapoport	And I kept up with him. Not a lot of high school. There is one person now, a guy that I edited the school paper with, but Tony is, retired and living on the west coast, but we speak about once a month.
Ramya:	Okay. That's great.
Rapoport	He became a folk singer. He went to Harvard and Aaron Copeland wanted him to be a music major, but in the end, he ended up working on NPR, and doing folk singing for children and square dancing.
Ramya:	And so you knew Bob when you were in Walden, was he a contemporary?
Rapoport	One year ahead, but he a good friend and all.
Ramya:	Okay. Great. And then you met again after you came to NIH?
Rapoport	Yes, yes we kept up.
Ramya:	Okay. Great. And so did your interest in the brain and in psychology, and neuro biology develop at Walden or was it-
Rapoport	Oh, that's an interesting story. Growing up in the 40s and 50s in Manhattan, psychology meant these fascinating people who were psychoanalysts who were coming largely because of the war to New York, and it was still at a point where that had become a very dynamic factor in treatment and I think in the long term all the psychoanalysis has had enormous influence on culture and literature. The evidence for efficacy, let alone efficiency and cost was lacking.
Ramya:	Right.
Rapoport	I think there were many good things that were good about some of the concepts but I certainly-so when I went to Swarthmore College, which was a place I just fell in love with that was co-ed like my school. It was smaller, liberal, and it had an education that was very, very good. I was excited to get in because it was a very good academic school. And the small seminars were among the best training I ever had, at any rate. So, naively, as a high school student, and because these almost local heroes were these psychoanalysts who were intellectuals, and European, and my parents didn't know any of them very well, but this was- So, I said I wanted to be a psychology major. Well, luckily for me, (laughs), in my naiveté, Swarthmore College had a very strong program for experimental psychology and it was dominated by a group called Gestalt Psychologists, which is not the way.

	There is something today called Gestalt Psychology, but this was a different use of the word. And that was experimental psychology, which dominated by people teaching rats to run mazes, and that kind of thing. Whereas the Gestalt Psychology was very interested in more complex behaviors, rating them. So that for example, in perception, there's certain illusions. Where let's say you stare at something and you see either a woman face, or a vase. They were interested in doing electrophysiological recording as you shifted. Because, if you keep staring at that. If, almost everyone has, what happens is you alternate between seeing the woman's face or the vase. And they were very interested in what was going on in the perception.
	Wolfgang Curler who was one of the best known preceptors, who was German and ended up in the United States. And he had been stranded on an island where he had a chance to observe monkey behavior, and it was very interesting to see a monkey put two things together in order to reach a piece of food outside a cage. It was very interesting, these were more on how you would rate this, but they were very careful scientists, and the notion of blind rating, rating scales, quantification, and statistics were very important. The honor seminars in psychology, and they did have a clinical thing, which was not very good chorus, which was taken mostly by people who were going to be teachers and should have some psychology, but it wasn't taught as an academic. Clinical work wasn't taught as an academic. Maybe it was just undergraduate, of course.
Ramya:	Yeah.
Rapoport	Anyway, so the undergraduate seminars were very special. I worked from an Oxford model, so that for the last two years of college you took two seminars a semester and a reading list of primary sources were so long that you almost never finished them and you had to write a short paper. There are about eight or ten in a seminar, typically meeting at the professor's house.
Ramya:	Really.
Rapoport	You had to write a paper every other week. And only about eight pages, but your take on the primary you read. And of course, you staggered it so you had to seminars, or what you did, you made sure you only had one paper a week, not two. And you had to give it out two days earlier. They were so fussy you know, in spelling, and typing, and we used carbon paper.
Ramya:	(laughs).
Rapoport	But, the ability to think based on primary research papers, plus having to write up a paper every week for two years. I can't imagine a better preparation for a research career.
Ramya:	Sure.
Rapoport	And I think that had much more influence on me than medical school, where perhaps oh, public health has some statistics in methodology. But medical school has been described by a class mate as trying to get a drink of water from a fire hose.
Ramya:	(laughs).

Rapoport	And I went to Harvard medical school, and my classmates were simply wonderful, and I've kept up with quite a few of them. Especially because I married one, so between us, we have several friends. But I really owe the combination of high school and the experimental psychology at Swarthmore too. A lot of why I was able to readily join in doing research after medical school.
Ramya:	So were you a psychology major at Swarthmore?
Rapoport	Well there was- Swarthmore broke the rules for pre-meds. They felt so sorry for us that we were going to go to medical school, and have such a specialized sort of life, that you could split your major. I was in an English split. Split English, and literature, and psychology major. And they let me you know, take some extra things, and so on.
Ramya:	Nice.
Rapoport	Uh, they felt very bad for people like me, so they waved the rules a little.
Ramya:	Do you think your high school experience sort of influenced your choice of splitting the major across the arts and the sciences?
Rapoport	We had a wonderful English teacher there. Yes, and creative writing, from what I have told you about my high school, would have been a strong point.
Ramya:	So you developed a strong interest in literature?
Rapoport	Well, actually looking back, I probably would have gone philosophy or history of art because it was a time in the history of English literature of a kind of deconstruction, it's changed now, but there was a, the phase was much more-I mean, the professor was horrified, not horrified, we liked each other very much but the honors seminar leader when I told him that sometimes I read literature because I felt I made new friends that way, it was the opposite of they wanted to know the balance of the chapters. And it was almost an architectural approach.
Ramya:	Interesting
Rapoport	To literature. Literary criticism goes in phases.

Ramya:	Sure.
Rapoport	And there was something sterile about it. Not the teachers, who were wonderful teachers, or the classmates, but looking back, and it's not a form of literary criticism that's extent now.
Ramya:	That's interesting. So then how did you decide to do a psychology major?
Rapoport	Well, as I say, I had this naïve assumption that the psychoanalysts who were on the upper west side, who were intellectual leaders and that's what psychology meant to me. And then I learned about-I met my professor and he talked about what psychology was, and he was one of the best teachers. And his seminars on cognition were always over-subscribed, and in fact this professor, Henry Gleitman, was a wonderful as an advisor. His textbook, which for many years went into four editions, was the most used introductory to psychology in colleges in the United States. And he said he liked, unlike most of the senior professors, teaching the first-year students because they asked the best questions.
Ramya:	(laughs)
Rapoport	I brought this-we are downsizing our house of 53 years. This is on the way to be throwing out, but I wrote him a long letter at the height of my work on OCD, and I consulted with him at the height by going to Penn. Many of the Swarthmore professors ended up teaching at the University of Pennsylvania. The ones that had been my heroes as an undergraduate at Swarthmore. And he did too.
Ramya:	Really.
Rapoport	I remember he did a consultation on something that excited me, the sort of thing that only at the NIH could you go on an angle like this they say, not directly related to patient care but intellectually, very exciting.
Ramya:	Okay, we can come back to that. In the mid-50s you ended up at Harvard Medical School doing your medical degree.
Rapoport	Yes.
Ramya:	Can you talk a little bit about that experience?

Rapoport	Yes. Well, Harvard Medical School, the classmates were wonderful. But, I'd probably, if had to do it over again, would have gone to Yale. It was smaller and had a reputation of making the medical students feel part of a community.
Ramya:	Right.
Rapoport	It was tough. I roomed with an old friend from summer camp who ended up a psychiatrist. She was going to BU, they had a dorm, but there were no women allowed. Harvard was one of the last to allow women, so I was one of six women in a class of 145. So we shared an apartment on the Fenway. She had gone to Radcliffe but she was going to B.U.
Ramya:	Okay.
Rapoport	I'd say the classmates were an enormous support group, it was okay, as I say, I like the classmates. I wasn't in Cambridge. The medical school is separate from the rest of the university.
Ramya:	Ok.
Rapoport	And, I met some friends and had broken up with a boyfriend who was six years older than me, whom I had known since high school and who would visit me at Swarthmore. And I, I didn't want to marry him, but the lack of that support in that world was a loss. And in terms of going to medical school the, the psychiatry was not that exciting. The neurology was more exciting.
Ramya:	I see.
Rapoport	So, some of my more inspiring teachers were neurologists, and a high point was taking a three month elective at Queens Square in London, which was very extraordinarily creative and interesting phenomenology in the brain. And the psychiatry was rather too psychoanalytic, and I had gotten past that point and didn't think it was that interesting, or appropriate. It was a very expensive, unproven treatment, although interesting in an important and a general cultural way. And there were some wonderful individual teachers that obviously did make some friends in the class.
Ramya:	You were not able to do any research during that school?

Rapport	There weren't research electives particularly. I tried doing something to do with was it an infant, or a child EEG program with somebody. Jerry Brunner had gone to Swarthmore, and was a professor of psychology at the University of Boston. And a graduate student of his and I tried doing something and I spent a time as a researcher with someone in the neuro- anatomy department. But, but I didn't really get involved, and I don't know was how much was being a girl, how much that was a couple of users in medical school. Because I played the guitar, I was able to go to Europe for free, on a boat, and one time just toured around Europe. The other time I took that three month elective in London.
Ramya:	What do you mean, because you were able to play the guitar?
Rapport	Well, I always started taking just folk song guitar lessons in like high school and in college I would go to parties with my guitar and singing folk songs. The model being more Pete Seeger and The Weavers.
	And I took a few years of classical but that never grabbed me. And I still have a guitar at home. Whether it is something I will do in retirement, I'm not sure. I haven't played in years. But the friend from high school, worked at the progressive-our kids went to a school like the Walden school, called Georgetown Day school here, she would guitar and singing folk songs with them, and she's the one that told me about the singing group.
Ramya:	Okay, so after med school, you did a couple of internships.
Rapport	I interned for one year in what was a mixed internship of neurology and pediatrics and I guess some general medicine, and a minimum thing on OB-GYN. Then went back to Boston at the Mass Mental Health Center for a year. But I got married, to a classmate from medical school, who was in New York doing an internship. Although he was at Bellevue, and I was at Mount Sinai.
Ramya:	Right.
Rapport	But I saw a lot of Stanley there during that year. And then when he came to NIH and I was at Mass General, we really realized we missed seeing each other, and decided to get married. He was in the public health service getting out of the draft, the Berry Plan. So I came down and for a year, my second year of residency I worked at St. Elizabeth's hospital. I would have come here, there was a guy named David Hamburg who invited me to be a postdoctoral fellow, even with only one year of residency.
Ramya:	I see.
Rapport	But, after he had accepted me, he decided to move to Stanford where he spent the rest of his career. A big loss for NIH, and so I went to St. Elizabeth's hospital for my second year of residency. At the end of that time, Stanley had decided to go to Sweden for two years for a post doc. Unfortunately, although I was unhappy about that initially, somebody knew someone visiting from Sweden who said he'd sponsor me for a post doc. And we each got post-doctoral research fellowship from NIMH for two years. So, we went off to live in Uppsala, Sweden.
Ramya:	Ok.

Rapoport	And, a lot of wonderful things happened. they didn't sound so wonderful in the beginning but there was an American, Ben Carlson, here who was into perception in the psychology laboratory at NIMH, taking a sabbatical for a year. His family was from Sweden and he thought he would look up relatives, and he was a wonderful man. And the person who was supposed to be my sponsor turned out to be having personal problems and wasn't showing up to do his lectures, or be my sponsor. So Ben took over, and I did a perceptual study, which we published in a very good journal, and then Ben was leaving for a year, but they introduced me to someone in Stockholm, and I could commute from where Stanley spent those two years. And we were living in Uppsala. But, it's less than an hour by train to Stockholm. So I commuted for the second year became very close too and very influenced by Boreo Crownhall and Daisy Shallen [?], who were both researchers. He was head of psychiatry, and she a psychologist. Off in the real researches and psychiatry faculties. And they remained lifelong friends as well as wonderful mentors.
Ramya:	And that was at the hospital?
Rapoport	Yes.
Ramya:	And the first year, where was that?
Rapoport	I was at the department of psychology of academic psychology in the University of Uppsala.
Ramya:	Do you know what year that would have been?
Rapoport	We were in Sweden from 62 to 64.
Ramya:	Okay. So you got married around 60, 61?
Rapoport	We got married in 61.
Ramya:	61. Okay so then how to you get back to NIH after that?

Rapoport	Well we left not exactly having plans for what we were going to do when we got back. And our first son Erik, spelled with a K, was born in Stockholm.
Ramya:	And did you name him with a K because you were in Sweden?
Rapoport	I fell in love with Sweden, being Swedish, I went from telling Stanley how could you do this to me, to saying we should stay here.
Ramya:	(laughs)
Rapoport	And I was offered a job at the as a junior faculty member. Because Daisy Ingoria [?] didn't have that many research oriented graduate students. And particularly not the MDs. A huge problem now, as I'm sure you know. I didn't go immediately to the NIH, what happened was that I looked at the academic jobs here and were terrible. What you did was you helped the private practitioner's inpatients. You basically helped take care of their inpatients, and there was very little academics in the academic local psychiatry department. But the NIH had noticed there was a terrible shortage of child psychiatrists. And they were paying very well. Like, 1000 dollars less than a faculty job. If you would get trained and boarded at, in child uh, psychiatry, so I had already two years. One at the Mass General, and one at the St. Elizabeth so, I was certainly eligible to do the two year child, which I did at Children's Hospital. Then Children's Hospital-oh, what is his name? He was a wonderful, very flexible leader of child psychiatry. Very open to me, I took-one of my clinics was in the neurology clinic because children with neurologic problems have such high
	rates of psychiatric problems, and that was fine with him. And they were not allowed to charge for services if you were on the NIMH fellowship, so it didn't matter whose patients I was seeing. And that was pretty good. And the first job that I took after that was working for a D.C. city clinic, but it was a Georgetown teaching clinic, so I got a faculty appointment at Georgetown.
	And then I got very interested, because this was when psychopharmacology had really started in the 50s and was the hot science driving psychiatry. And I of course, with my background, double blind, and ratings, and placebo controlled, and knowing how important blind rating are and so on. And quantifying behavior, I was just primed to go into research and psychopharmacology, which starting around 1954-55, for the next 20-25 years really dominated psychiatry as the cutting-edge angle into the brain, neuro chemistry. Today replaced, not I think as successfully by imaging and genetics.
Ramya:	I wanted to just go back one sec and ask did you always know, or did you know since med school say, that you wanted to do research? Or when did you decide that you were going to use your medical training to do research rather than in practice?
Rapoport	That's a good question. I, I thought patients were so fascinating, and I particularly like the psychiatric patients. That or neurology, and I thought I was going to do research, but it was really a yearning. You had to get your clinical training first, and I had several of these models, Daisy and Boreo Cornwall. Boreo was doing his research on memory effects of electroshock. But he had also written some fascinating pages on the change of the art of well known- two very well-known Swedish artists who painted very differently in and out of psychosis.
Ramya:	Interesting.
Rapoport	And he had written some very interesting papers on that so I was always a little attracted to the far out. And, Daisy was really an expert on the psychophysiology and character disorder. and then, but I never-it's interesting, with following my husband so much, I never had a mentor, which was good and bad. The good part was I never had the problem, which many people, men in their development have a way of distinguishing themselves, and differentiating themselves from their mentor. But I had a lot of warm and remarkable mentors, and Ben Carlson wouldn't put their names on my paper where everyone else would have.

Ramya:	They wouldn't too?
Rapoport	No, I met some wonderfully amazing, generous people, and some of the people who are most helpful to me, a guy named John Weary from Australia at the time, and a guy at Harvard who ran the papers I wrote. And started inviting me to places and proposing me for awards. And they would just like that even though I never worked directly for them, but they became sort of, in the cloud mentors.
Ramya:	It sounds like you had a very strong network of people kind of-
Rapoport	Yeah, it had just happened.
Ramya:	When did you start working with children?
Rapoport	Well, so, when I was in Sweden something very odd happened. Which is that, Sweden was in a rather conservative period of allowing abortions. Conservative for them, but America at the time in the 60s, abortions were all completely illegal, maybe except to save the mother's life. Well Sweden, a woman name Sherri Finkbine, had a thalidomide child, and had gone to Sweden to have an abortion.
Ramya:	Really?
Rapoport	She gave an interview to Time Magazine that was just wrong. She said, thanks, Sweden is wonderful. Anyone who wants an abortion should come to Sweden. Well, my Swedish was pretty fluent by this time because we had started studying six months very hard before we went to Sweden. And the second language was still German in Sweden when we were there in the 60s. And so, they said to me, look, there are all these hundreds of people applying, will you take care of them? So I interviewed all of them. If someone wanted an abortion following that article, they got me.
Ramya:	Wow.
Rapoport	On top of my research, which had to do with uh, perception, memory and electro- shock, things like that.
Ramya:	But not in children.

Rapport	Uh, no. So, I started, so I started interviewing all these abortion applicants and it was very interesting. Pretty normal, they were you know, they were just people who didn't want to break the law, and were uncomfortable getting an illegal abortion so it's a fairly well off group. And I wrote a much sided paper called American Abortion Applicants in Sweden. And it was these women that aren't taught parenting, and they all planned to have children, and you couldn't make much of a psych-and a follow up of how they often didn't get them in Sweden. Japan was the easiest place at the time. if you got turned down by Sweden, and so they all went there. And the many did get-and so this got published in a very prominent journal, and I got all sorts of job offers based on that article.
Ramya:	(laughs)
Rapport	But, but Stanley wanted to come back to the NIH and so what I did, at Georgetown, I was working at Peach Tree Clinic, then I, I moved, I got a grant. An extramural grant to study hyperactive children and so I had a grant to me, and but, to look at the urine and the platelets that I would collaborating with the intramural program. So I got to know a lab, Earl Copen was the chief of this, a guy named Dennis Murphy. These were people who don't work here anymore, in the mental health. And we were collaborating, we were bringing urine samples, and blood samples, on placebo before and after and trying to relate them to improvement, and so I had a working relation. Stanley of course was known because he was working in a basic lab in mental health, and a branch called the Adult Psychiatry Branch had decided that they would have a section on child psychiatry. I ended up moving there, and that took several years.
Ramya:	So it was a kind of gradual transition to-
Rapport	Yeah. From, yes-
Ramya:	From?
Rapport	It's a little silly having an extramural grant when you're five miles away.
Ramya:	Right, yeah. And working so closely with researchers in intramural.
Rapport	And that worked very well.
Ramya:	And so when did you full time formally come to the NIH then?

Rapoport	God, when was that? I think it was not until 76 or 75, something like that.
Ramya:	So until then, your appointment was really at Georgetown.
Rapoport	Yes, yes, part of it was. Part of it was in the city in D.C. that turned out to be very relevant because it counted toward retirement.
Ramya:	Okay.
Rapoport	The district being a district and not a state. So, I had many more extra years toward retirement.
Ramya:	Where was that? What was the institute?
Rapoport	Well, it was called the Peach Tree Clinic, and in the former school building that was turned into city uses of various sorts. But there was a training. You got an appointment because a lot of the residences for child and adult rotated through.
Ramya:	Okay.
Rapoport	The Peach Tree clinic, which is in Georgetown.
Ramya:	Okay.
Rapoport	Not far from the medical school.

Ramya:	And it's all clinical, or there is some research happening there as well?
Rapoport	It was all clinical.
Ramya:	Okay.
Rapoport	But we were very innovative in terms of approaches and what worked. And we do a lot too, you know we made sure the families had tokens that we would sometimes go to there, in a little like, little van and do an entire testing with interview and everything.
Ramya:	Right.
Rapoport	Where they were because to come back for the usual three sessions for testing and initial interview in terms didn't fit for the poor people. So, there were innovative things and I also saw some observations that led to one of my most famous papers.
Ramya:	Nice.
Rapoport	And that is with the bathroom down the hall, with poor families, what was hot news at the time was that for hyperactive children for which there wasn't any psychological treatments that worked but that the stimulants could really stop a child from being expelled of severely hyperactive, they were remarkably effective, at least for several hours. And since the bathroom was down the hall, the families would keep the pills in the most medicinal looking thing in this poor apartment, which was the refrigerator. So I saw a couple of cases where a healthy sibling of these children had, out of curiosity, taken one of these pills. And the family would bring the child to see me, and they were just calmer and quieter and it was clear that there was no paradoxical effect with what the stimulants do. Anyway, I made some observations clinically, that led to when I came to NIH.
Ramya:	Right.
Rapoport	Some of the best known studies that I've done.
Ramya:	Can you talk a little bit more about the observation, and what happened to the sibling that took the-

Rapport	Oh. Oh. Well, unfortunately a phrase paradoxical got into the literature. The first observation of how stimulants were useful was they used to give Benzedrine in earlier to get kids to lie still for pneumoencephalogram, which was an early type of brain imaging not used anymore. But it got the kids stiller, and the person who reported this said paradoxically the stimulant made the kids lie quiet so we could get a good-that was like in the 30s. In fact, stimulants have been used illegally to make race horses uh, run faster, to make football players go faster, and what they, stimulants do is complex. They increase on task behavior.
Ramya:	Ok.
Rapport	And in fact, we showed, so we started studying the stimulants in ADHD. Julie Axelrod, a Nobel prize winner was very interested in stimulant effects on dopamine and norepinephrine so, this fit in with the monoamine interests of the time in psychiatry and here at the NIMH. So, one of the first studies that I did and there was a wonderful RIB was we got normal, average children, not the quietest, and we made sure because of informed consents that their parents were all lawyers and doctors.
Ramya:	(laughs)
Rapport	And we had them come for three mornings. The first was just practice to learn the task. The second in counterbalance, then Wednesday would be drug or placebo and half had one first and half had the other first, and we did a variety of tasks but language, math and so on. And we had built an actometer that measured how an earlier version of what everyone now has in their cell phone, but this was in the 70s and we made sure that we had a group of kids who were hyperactive, who had ADHD, and that were both restless, and impulsive, and inattentive. And then we had, these healthy controls who the teachers considered you know, good, and certainly not particularly restless or inattentive, so on. And, everybody's improvement, everybody improved and did things much better on stimulants and improved their on task behavior and for the hyper-and that's not so surprising when you, most of the drugs we use, if you or I took insulin for example, our blood sugar would go lower. We'd be very foolish to do it, but there's nothing most of the drugs that people use have very similar effects. There are some exceptions, like if I took an anti-psychotic, I wouldn't think straighter. (laughs)
Ramya:	(laughs)
Rapport	And it wouldn't do anything good for me. But, so sometimes drugs act like thermostats, where they normalize.
Ramya:	Ok.
Rapport	But, most of the drugs have the same physiological effects. It's just if your physiology isn't out of whack, on that measure, you would be foolish to take it.
Ramya:	Yes.

Rapoport	Like diuretics would make anyone urinate more, but if you don't have extra fluid, again, that would be a silly thing to take.
Ramya:	Sure.
Rapoport	So, but that paradoxical notion had gotten in so that pediatricians were telling parents that when their kids improved, that they had something called minimal brain dysfunction. And the results of our study, published in *Science*, immediately became board questions and stopped the pediatrician and child psychiatrist from telling the parents that their children had a brain damage syndrome.
Ramya:	Oh.
Rapoport	Now, what's really complicated about that is there are subtle circuits that are abnormal in ADHD. But that, clinically, that was a very good move because we even showed in a later study that during basketball class, the hyperactive children move more than on placebo. Because when you should in basketball be running up and down the basketball court, well, say, they dropped a quarter out of their pocket, and were trying to find it when they should have been dribbling up and down the court.
Ramya:	Ok.
Rapoport	So, we did a lot of work on ADHD.
Ramya:	So what changed in clinical practice? They weren't telling the parents more of this-
Rapoport	The, well, a lot of our studies had a huge amount of change in clinical practice. One of them was to stop people from saying that the child had minimum brain dysfunction because they improved on stimulants.
Ramya:	And so what did they change too? What would they say after that?
Rapoport	They would just say the stimulants look like they are being very helpful to you, we should keep this up, we don't know a better treatment and the second change was that there were two competing stimulants, amphetamine, and methylphenidate. And we did a double-blind comparison across them, and a placebo, and different doses. And what was very interesting was that people, typically pediatricians, and psychiatrist would get used to one and they would pick one and we did a large study showing that for reasons we never understood, some children would do much better on one than another.

Ramya:	Really.
Rapport	Or some children would get side effects. There's always in pharmacology these things that you never quite understand why an individual patient tolerates one very similar drug from what you understand about the drug better than the other. And we found out that if you use three different doses of both different stimulants, and there's always a placebo control, that you need to try both, if you don't have a great ideal response because it's, many children for reasons you don't understand. So, we got it into practice to try both, and that's very important because for some children, even though they are behaving behaviorally, they get stomach aches, they get anxiety and things like that, so that changed practice enormously.
Ramya:	Interesting.
Rapport	Much to the better of the children.
Ramya:	So they would have two, two or more types of medications?
Rapport	Well, if a child does great, and the family and teachers say wonderful, of course they leave it alone, but if they were with these things, they would not only vary the doses, but try the other form of medication.
Ramya:	So, okay so, you come to that what now the new child psychology Branch here.
Rapport	Psychiatry.
Ramya:	Sorry, Child Psychiatry Branch at NIMH. How important was this branch to the overall activities, and?
Rapport	Right. Well, it was very interesting. When I retired I was one of the few in the history of NIH to say it is really good with the Child Psychiatry Branch, not be continued as a name, because, what-we could study whatever we wanted to, and we studied ADHD, and then we got into obsessive compulsive disorder, and most recently, childhood onset schizophrenia. trained people who went out and did this, but we started to realize how the field started to realize that developmental patterns were very important in virtually all of the disorders, and it got quite clear that there was childhood onset depression, and OCD, and rarely psychosis, and most recently my God, overboard on the subject of Autism Spectrum Disorders.
Ramya:	Right.

Rapoport	And so, when we first came, I had to battle history because there had been an absolute disaster. The first ward that had opened in the 50s- 53 or 4, in intramural and NIMH, was called something like the Child Mental Health Branch. It opened before the adult branch opened. And the very idealistic guy, what was his name? He had written a famous book called *Children Who Hate*, and he was very interested in behavior disordered children, conduct disordered children. And even though, his only went up to twelve, between about eight and twelve, these were really tough kids. You know, they were twelve going on 22, and they were big and bulk- and I think one of the nurses almost got successfully raped. A senator visiting the project had his wallet lifted, and that was never found-in an elevator.
	And what they were doing- they were doing some smart things, they were focusing on learning problems, and individual tutoring, and they were very interested in the kids, and trying to give them all the attention and what they needed. But that's a very tough group, and you really need to do research on such a group as part of a huge treatment program with a large number of efforts arranged at the treatment, and a residential treatment, and it's slow and it can take years and so on. Requires huge numbers of people monitoring their behavior all the time, including strong males. And it didn't stay long, although there's some-with his name, there's a treatment program clinic still. He had very strong positives and he had been given a very mixed message about whether he was supposed to be doing treatment or research.
Ramya:	Ok.
Rapoport	The early formulations. And Seymour Kety came along and it was much harder to tell, which was the neurology's program, and which was the psychology program. This is all history and from a wonderful book on the history of NIMH.
Ramya:	Really.
Rapoport	It is really worth reading. Anyway so I had a lot of prejudice and worry historically about children coming to the NIH, and doing childhood things, and we shared, we had an interesting experience, we shared-our first intramural beds were sharing a ward with Irv Copeland's program, who was studying people more like their grandparents age. And it worked very successful because it was the famous skipping the generation, and so they actually got along pretty well. All these older people liked the idea of children and the children saw them as kind grandparents and not their parents, who were always disapproving and correcting them.
	And that was surprisingly successful, but in the years since I came here, a number or programs started, someone who was a post doc of mine, Sue Swedo, took over studying obsessive with their own branch, the pediatric development of behavior, and they were studying OCD and autism spectrum disorder, she's still here. And, Phillip Short has a tenure track position in Genome, studying ADHD, and Dan Pine, and Ellen Leibenluft, have a branch studying childhood anxiety and depressive disorders. And a guy who left recently, James Blair doing electrophysiology, who was really studying conduct disorders. And the world outside with me, would mistakenly think that I was there you know, they think in terms of medical school departments.
Ramya:	Right.
Rapoport	And they would think that all these senior, tenured independent people somehow reported to me.
Ramya:	(laughs)

Rapoport	Because in a medical school, it's conceivable if I were head of child psychiatry that there'd be all these people that would technically be under me, but the, most of the world doesn't appreciate that, so they agreed that it didn't make sense anymore because the entire field has almost gone overboard with developmental theories and brain developmental theories. Which, are very strong in brain schizophrenia, for example. The evidence of early brain developmental disturbance and how they're more vulnerable in years in childhood sort of ways, years before they become psychotic, many of them.
Ramya:	Interesting.
Rapoport	So, it's a healthy change in the field.
Ramya:	So, when you came to the NIH, what was the work environment like? Was it collaborative, was it a small group initially working on child psychiatry?
Rapoport	When I first came, who was the, I'm trying to remember who was the scientific director, whether it was Fred Goodwin or not. Trying to remember who it was, I think it was Fred Goodwin. My immediate lab chief was Biff Bunney, whose still working in California, and it was smaller. We had the whole Christmas party of the intramural program could be in one room. And you got to know people well. I continued to collaborate with Dennis Murphy. What was interesting was how much benefit I got from having been extramural. Because I would be invited to meetings from contacts I had made through extramural meetings, which had done a lot to further pediatric psychopharmacology. It was nice having both because I found that in some ways, more stimulating.
Ramya:	Really.
Rapoport	Uh, there wasn't anyone else that interested in children intramurally, although they were very encouraging.
Ramya:	So you were the only one at the time.
Rapoport	I was the only one at the time, that's right. And we did some collaboration on whether lithium was useful on children with problems, or children with bi-polar disorder patients. So, we had a collaboration with Elliot Gershon. Dennis Murphy was interested in serotonin, and measuring platelets. That was the thing at the time, platelets and serotonin. And Steve Wise, who was a basic neuro anatomist uh, well, that was later when I got into studying obsessive compulsive disorder. And so conceptually, what was wonderful, and what was so special about the NIH was the lack of the need to apply for grants.
	You took your BFCs very seriously of course, every four years. But you really, your effort was trying to do the best research you could. And the ADHD took us quite a while when we compared different drugs, and, which ones were better from a parent point of view, and from the child's point of view, and subdivisions, at some point I really needed to pivot. We had published a large number of studies, and Javier Castellanos had gone off continuing some of our work to become a professor at NYU. People would go from staff positions to full endowed professorships.
Ramya:	(laughs)

Rapoport	Because most people who go into child psychiatry want to be therapist, and so really people trained and interested in research were highly valued, still are.
Ramya:	Nice.
Rapoport	And so it became a reputation of a very good place to work. But in visiting Sweden after about ten, twelve years on this, I was back visiting my good friends in Sweden, and because of their interest in was a drug that had been on the market a long time called clomipramine or anafranil was its trade name. And it had been for twenty years around in Europe and Canada, but for some reason or other, Sebagai, the company that had owned the drug, had batched the pivotal studies on depression, where they would make most of their money.
	And so it didn't get on the market in the U.S. although widely used in Europe. Just a peculiar, I don't know what went wrong with their pivotal studies. They usually don't mess up like that because it was quite a popular anti-depressant. But they did an open paper on obsessive compulsive disorder, saying that this drug was good for it. And then there was a controlled trial done from Sweden, and Sweden got a bunch of people with OCD on the board, all on one board, which it could be because they were all registered from various regional hospitals for chronic care.
Ramya:	I see.
Rapoport	So, these were very sick patients, and they got them on the ward, and I was visiting Marie and practicing my Swedish and interviewing all these patients, and of course one of the first things in the clinical interview is when did this first start? And, a large fraction of the twelve or so patients on the ward, started in childhood.
Ramya:	Interesting.
Rapoport	And yet, you never saw a case, in all my training, in child psychiatry, I never saw a case. And so it was clear that these people were there, but were hiding somewhere. So I came back, and wrote a protocol to do a double blind trial of anafranil, in children. And, at first we were recruiting through like military magazines. And people here said you'll never see a patient, and I think our first patient we had to fly in from some military base because we were using federal means to advertise the program. And then on of our-we got on 20/20 describing this, which was a big TV program with millions of viewers, and then locally we had one of our children being interviewed and describing his compulsion to wash his hands or to count. And, the phones never stopped ringing, and I, the obsessive compulsive disorder was the greatest intellectual and professional adventure of my life. And, I don't know if this is the time to go into that now or-
Ramya:	Absolutely. There was something I wanted to go back to. So the ADHD work, you were doing that at Peach Tree it started there, or?
Rapoport	No, the observation of the normalization of the same response of the healthy siblings was just an incidental observation at Peach Tree.
Ramya:	Okay.

Rapoport	I got my first study at Georgetown doing a double-blind comparison of placebo, I think it was imipramine, and methylphenidate, Ritalin.
Ramya:	Ok.
Rapoport	Or was it dextroamphetamine? I think it was Ritalin. Double blind comparison, and parallel design. And we got many at Georgetown in the pediatrics department. There were many large families, because they were Catholic. And they weren't poor, but the free services-we had a large number of patients, you know, at least 40 in the group.
Ramya:	Ok.
Rapoport	We were way ahead of schedule, and we were measuring simultaneously platelets, serotonin, some 24 hour urine measures, so it had biology, and um, we showed what changes in the blood and urine, correlated with improvement. And, it was very interesting because clearly the stimulant was much better for the teacher's point of view, and it really did work better for attention span. But at night, it could cause difficulty, appetite and sleeping, and the imipramine didn't work as well for the teachers. Thought it was marginally better than placebo, parents loved it because it improved behavior that lasted longer.
Ramya:	Sure.
Rapoport	And it didn't interfere with appetite, so each had its strengths. And I was in the pediatric department because I needed to use the lab, but had a joint department with a very, very nice, very open-and I would give seminars and teach there, and I would keep people up on the literature. I knew other exciting fields, which was epidemiology of child psychiatric disorders, which was the other source of intellectual excitement at the time. And after that, we were sending these, we were collecting things in the lab, but there were being measured at NIH.
Ramya:	Right.
Rapoport	And that's when I moved to NIH. And that's the first study I did, which was the normal child study.
Ramya:	Of the ADHD?
Rapoport	Yes, and we did a study of bed wetting, which was collaborative with the sleep program to see if anti-depressants had a very good effect on bedwetting, but it probably is a peripheral effect, because we took children who weren't depressed, and we looked at phases of sleep, and you know, did, when they wet bed, it was, you know, how did these drugs work, and was it peripheral, or was it central? We had a controlled drug that had just the peripheral effects, not the central effects and so on, and so forth. So that was the big ambitious study that they-we have loads of collaborators across the intramural program.

Ramya:	And so from there, you went on the OCD work?
Rapoport	Well, we did a lot of years of trying out different drugs and things I had mentioned in ADHD and then we went on to OCD, and we, we discovered quickly that it wasn't rare, that it was coon. That we had a dramatic effect and that we used, we ended up using three protocol that used placebo, anafranil, that is, clomipramine was the chemical name. And desipramine, which is a perfectly good anti-depressant, anti-anxiety, but it was no effect on serotonin.
Ramya:	Really.
Rapoport	And, we had this protocol, which at the time, without the enormous issues related to RIB is in getting protocols approved, that really were bogging down so much research today. Clinical research. We were able to just amend this protocol and an amazing, an astonishing variety of people went through this. So, we first showed with children and adolescents there was a very strong drug effect for OCD. And that that was almost electrifying because it was so specific and the desipramine didn't do anything. Because people often have coexistent depression or anxiety, and it was always assumed that when anti-depressants did something it was because of you know, the depression and anxiety improving. But this clearly wasn't the case, because an equally good anti-depressant, anti-anxiety did nothing. It was really not different from placebo.
Ramya:	None?
Rapoport	So we published that and that had an enormous influence because these patients were coming out of the woodwork because it would be on the radio. And it was probably two percent of the United States has OCD. And it's probably very good they were keeping it a secret. They were so reasonable, these patients, who had to, as an example, had to wash their hands until their hands are chapped and bleeding. And they knew that it was silly, that their friends didn't do that. These aren't people who are crazy, but they thought people would say and think they were crazy.
Ramya:	Really.
Rapoport	And they were embarrassed. And, this made them feel like legitimized, they had a biological problem, and a group started a patient support group started, which is very important to this day. And I became their hero, because I had a small private practice in my home as a- our home had a little room with a separate entrance, etc. I was able to see patients there, and I always had a waiting list, I didn't want anyone to have my phone number.
Ramya:	(laughs)
Rapoport	And so, we made sure this nonprofit didn't fall into the hands of a drug company that was trying to push their drug. Because by this time other serotonergic drugs, like Prozac, were getting on the market, which also helps OCD. And a remarkable thing happened that was fun, but that had enormous scientific benefit. I wrote a popular book, a professional book with chapters by our collaborators on OCD in children and adolescents, I did that as official duty, it was published by, I think, American Psychiatric Press or something. And, for an academic book, it probably sold a few thousand copies as you'd expect, and we got no money for it or anything like that, and did that as part of my work. But a friend of mine from high school was an editor at EP Dutton, and I had over the fifteen years we had been studying OCD collected stories, which were the sort of studies you tell people at parties.
Ramya:	Right.

Rapoport	And that wouldn't fit into a scholarly journal. Oliver Sacks books were inspiring me. And so, I wrote this book called *The Boy Who Couldn't Stop Washing*, and partly because Richard Merritt knew me well, and partly because I had the great luck of getting a very good publicity person. Usually publishing companies do badly because our publishing people were very unhappy who have to do public relations because most books don't do well, there are just so many books published every year. But the combination of the fact that this was the first popular book about OCD, that this publishing person got me on Oprah, and Larry King Live, and Donahue, with the replays. 45 million, they don't have these big TV things anymore.
Ramya:	I know.
Rapoport	It's too much work. But 45 million people heard me, and the support group in any city I went to in the 21-city tour, had patients come on talking about how their lives had changed.
Ramya:	Really.
Rapoport	And so, hundreds of thousands of people, you know, ended up joining the OC Foundation. Because that's the only phone number I'd give out, so I was their hero. And, I didn't want my phone to ring off the hook, so I was also self-protective. And then, because of this number of things, it turned out to have a scientific benefit. For example, I got a lot of calls about dogs. It turns out dogs, particularly Labrador retrievers had a condition that was very hard to treat, called canine acral lick. And at first, it just looks like a dog licking its paws.
Ramya:	Yes.
Rapoport	You know, like hand washing children. And, but then the skin, they lick the fur and the skin away, and it goes in the bones and they get osteomyelitis and they put these Elizabethan collars, you've probably seen them.
Ramya:	I've seen them.
Rapoport	Which don't work very well, and dogs hate them, and the owners hate them, and they thought-they don't work that great. And it turned out that these drugs work, and so I went to my vet and he said oh my god, and I cured his dog.
Ramya:	Ok.
Rapoport	And then we did a double blind study.

Ramya:	On dogs.
Rapoport	On dogs with acral lick, with the vet, local vets dying to see that, and we showed the Desipramine did nothing and placebo did nothing, but fluoxetine worked, and it was magic. The dogs tolerated it well.
Ramya:	I see.
Rapoport	And it was magic, and saved their lives in the severe cases. And we published this in the Journal of the American Animal Hospital Association, which was the New England Journal of Medicine of the veterinary world. I became very famous; the people were very amused by this. (laughs). Well, you understand it had all been worked out on animals years ago, and had been used by humans for twenty years, but they somehow got the mistaken notion that Judy had worked out this stuff in humans, (laughs), and it's now treating animals-they like to describe it that way.
Ramya:	Yes.
Rapoport	And several very senior people at the NIH, in the administrative field- I have a leg problem, so I'm not being rude.
Ramya:	No problem, no worries, no, not at all.
Rapoport	Several of the administrative people had dogs that I treated.
Ramya:	(laughs)
Rapoport	As a courtesy, who were very important in other institutes.
Ramya:	The dog doctor, yeah.

Rapoport	Yes. And so, we had what was probably the best animal model and a guy named Dodman, who was always giving me full credit, because of my work, it turns out that veterinary schools, some have behavior departments, and some don't. Which are very important. There are all these people who have to give away or put down their dogs because they can't stay alone in their apartments all day, because you shouldn't do that to a dog.
Ramya:	Yeah.
Rapoport	But, as it turns out there are medicines that help so you can keep the dog, and you don't have to be stuck home all day with it. So, a lot of people were calling, so there was this study with the dogs, and then there were negative studies. People wanted to know what about compulsive shoppers, or shoplifters?
Ramya:	Oh.
Rapoport	It turned out that there was an anti-depressant effect on shoplifting, but not, it was specific, and it wasn't serotonergic. So we used this sort of pharmacological dissection on a number of interesting sub groups.
Ramya:	Really?
Rapoport	And each of this really reverberated. What I got most interested in, and this is getting outside both of our fields, but the sort of thing that made me so happy I was working in the intramural program. So I don't know if you ever took Philosophy 101? And the section on epistemology, remember that you learned-remember the question of Barkley and if a tree falls in the forest and nobody's there to see it did it really fall? And remember that Hume said it, this is really, basically, he didn't use these words in neuro brain effect because it's sense data and how you know is your interpretation of sense data. But I got heavily into talking to these good philosophers, at least the East Coast local ones. Because let me tell you about a typical patient. And this is a patient who would lose jobs that he both wanted and needed, because he'd go back, he'd start to get in his car then he'd go up the steps and check the lock
Ramya:	I see.
Rapoport	And he'd say to me, and this would be typical of at least the sub group of patients who were very much later than helped by clomipramine, or later by a serotonergic drug. But there are a lot of sophisticated, epistemologist that said it's related to your sense data. But that doesn't really quite cover it, so this is my patient that says a question that first seemed astonishing. He said how do you know if your door is locked?
Ramya:	(laughs)
Rapoport	And I said, well I turn the handle, and if it doesn't turn, and in my days, I could even see the bolt that slid into the door jamb, and, I can't open the door, and he says, well, of course I know that. I do that two or three hundred times, and of course the door, and of course I see the bolt. But how do you know, and what some of the patients, and OCD is very complicated, there's a lot of anxiety so even if you or I thought our door wasn't locked, that it was broken, unless we lived in a very ad neighborhood, we'd probably go to work and make an appointment at five o'clock to meet the locksmith there. We wouldn't spend the day at the door.

Ramya:	No.
Rapoport	So, it's a very complicated, it's gotten over focus, it's got anxiety, but there is-the French call it the 'la folie de doute'. The doubting disease. And it made me aware that there's probably a biology of belief.
Ramya:	Really?
Rapoport	And that had really amazing implications, and I ended up- for example, and then there was a period where it looked like, and this may still be the case, there is a sub group of obsessive compulsive children who may be reacting to group A hemolytic strep. Sydenham's chorea, which is a reaction that people have when they have rheumatic heart disease called St. Vitus's dance. They almost all have OCD.
Ramya:	Right.
Rapoport	And it turns out that there is a circuit of the brain that involves the basil ganglia. Sydenham's chorea and rheumatic heart disease is because the, the antibody that is fighting this group A hemolytic strep. Happens just by chance to recognize your own tissue it's uh, molecular mimicry, so it attacks your heart, or a certain section of antineuronal antibodies just because there is a pattern that happens to be similar. And it's only this form of strep.
Ramya:	Interesting.
Rapoport	And in Darwin, Australia, they have a group that have a very high susceptibility to his kind of strep, and what this group, these are natives in Darwin Australia, but their life is full of rituals. They have the most complex ritualistic sets of belief for their religion. How you walk, how you speak all the time. And we ended up talking about could organized religion be a byproduct of man's evolutionary relationship to strep. And we got into the question of which of the classic philosophers ever thought there might be. Clearly Hume was wrong and well, take a conviction of religion, this is usually totally separate, and we started thinking about various experiments that you couldn't ever do.
Ramya:	(laughs).
Rapoport	For both practical and ethical reasons. But saying that, in theory if you would suggest that if you gave them afranil would say that they are fundamentalist Christians. Very extremely so. It would be a very interesting experiment which no one is ever going to do. (laughs). Don't quote me as suggesting that the NIH plans to do this, but-
Ramya:	(laughs)

Rapoport	But, cognitively, and intellectually, I don't know of any other job that would let me spend the time thinking and writing, and reading some of the most interesting, original and provocative areas of research that I've ever had.
Ramya:	Really?
Rapoport	And wrote my best college professor, and went up to what was, what was of that time, one of the best academic experimental psychology departments to talk about this.
Ramya:	Where was that?
Rapoport	Uh, University of Pennsylvania.
Ramya:	Pennsylvania.
Rapoport	Yeah, but they were Swarthmore professors from-
Ramya:	Yeah.
Rapoport	So I never expected to consult with them, but this, and who are very interested and very helpful. And that was very exciting. And so, the book became a New York Times bestseller. And sold many copies and got great reviews, and my small private practice, for several years, have people who come to America. Wants-business men from all over the world, who want to bring their child, or themselves, or their spouse to make sure that their local practitioner was doing the right thing. And that was fascinating. By and large out local practitioners weren't very open to suggestions.
Ramya:	Local practitioners-
Rapoport	In whatever country they were, for their OCD. Because it became recognized worldwide because of my work.

Ramya:	Was the foundation the same as your clinic, or was that separate?
Rapoport	No, the OCD foundation was a private organization that has a yearly meeting, and patients come, and people who do behavior therapy, which also works-a particular type of exposure with response prevention. So somebody who washes their hands all the time after the go to the bathroom might have to rub their hands on the floor next to the toilet and then not wash their hands for two hours.
Ramya:	I see.
Rapoport	And they have to do this even if they think they are going to go crazy and have a heart attack. But it works, it works for most people. That and drugs. So non drug treatments have gotten worked out which is very important.
Ramya:	The behavioral-
Rapoport	And of course, everybody would rather do a non-drug treatment if they can, and should. The combination is better for some people than either one alone. Anyway, it's become a huge field, and there are thousands of clinics around the country, and experts.
Ramya:	Did you help to start the foundation?
Rapoport	Yes.
Ramya:	And the-
Rapoport	In fact, because we are downsizing, I was going through things, I'm throwing this out, but I, this was a, they, they honored me, they honored me.
Ramya:	Wow.

Rapoport	I also used to get wonderful things from vets all over the country from paw licking dogs. I'm throwing this out, but I brought this just to, and some of the notes on psychology of knowing.
Ramya:	That's fascinating, that's great.
Rapoport	That is some of the things I was talking about. And I brought this out, there are things from every aspect of my career. Their equivalents, I mean the stimulant was very, very well recognized and I traveled all the world being invited to speak about the normal child study, and that led to more contacts and having a successful career here meant meeting people all over the world who are very creative and bright, more people interesting to me to talk to than someone who, let's say, has been in private practice for thirty years.
Ramya:	Right.
Rapoport	As happy as they may have been with that.
Ramya:	Yes.
Rapoport	But researchers are a special lot.
Ramya:	Yeah.
Rapoport	And so on. At any rate, and even what happens at the NIH is everyone gets on the same bandwagon, so fifteen years later I really needed to switch.
Ramya:	(laughs)
Rapoport	And luckily, I found myself as a pediatric psychopharmacologist.

Ramya:	Really.
Rapoport	And one, even though, clozapine has been around for many years as a drug that patients that, a toxic drug, but a patient that in one study as many as 20% of chronic schizophrenic adults could do better on clozapine, if they could handle the side effects, which are cardiac and metabolic. But they hadn't been studied in children. And they hadn't studied schizophrenia in children, which is really rare. So the last third of my career in part because I had wonderful people take over, and get tenure, and take over these things. And to be doing OCD research when now extramural has whole branched on it.
Ramya:	Yes.
Rapoport	And so on. But is this a good time to switch to that, or should we stay on other things we should cover.
Ramya:	No, let me just ask a couple more questions. You're talking about how OCD went from what you called a little known disorder to something on the international spotlight.
Rapoport	Right.
Ramya:	I'm wondering if you could trace a little bit, sort of some of the changes of how OCD, you talked about how it's treated for example, but how about the neurobiology or the ideology of OCD.
Rapoport	Right. Well, it hasn't worked out so well for that despite big numbers there was some very interesting connections in terms of the biology. The first was the group A hemo beta hemolytic strep, and Sue Swedo did a group, a small group of children showing that intravenous immunoglobulin compared to placebo helped. Suggesting that it was fighting the anti-neuronal, antibodies in acute onset with a history of strep. That's remained controversial. It's become her field, not mine, although I started it, I was happy to give it to her, it got her tenure, and I don't want to keep doing the same thing. I don't, I think it's an awfully small group and not a typical thing that led to these very interesting conclusions. She's still very much interested in it, and not so successful here but is still a branch in the intramural program. We also showed that the families of children with OCD who started in childhood had members who had tics. Motor tics, blinking, that sort of thing.
Ramya:	Really.
Rapoport	Or, had Tourette's syndrome.
Ramya:	Tourette's?

Rapoport	And that connection was very important. There were a few years there where there were patients who were in between. Yale was studying Tourette's and we were studying OCD and we were trying to send each other patients.
Ramya:	(laughs)
Rapoport	And the patients were going back and forth, then we realized that these two things weren't that different. I thought of a tic like a hiccup, not something you'd plan, but some of the people with tics in fact do have a feeling of planning it.
Ramya:	Interesting.
Rapoport	And our boys with OCD who had started young, before age seven, all had tics. And, so that again suggested the basal ganglia as a location. The much more sophisticated brain imaging of today has suggested that it's all circuitry and there was one wonderful study with PET scans showing that successful behaviors as well as successful drugs normalizes the same circuit.
Ramya:	Good.
Rapoport	And it's like there's a hiccup of the mind, causing a hiccup of behavior as a model.
Ramya:	I see.
Rapoport	But, they've done some big group studies, and like typical in psychiatry there isn't evidence for any strong genetic-there is no question the OCD runs in families, that's coon, but in terms of getting it down to genes, largely, that's not been successful.
Ramya:	Ok.
Rapoport	And the brain imaging hasn't been that consistent, but I'm not that up on the uh, complex circuitry, and white matter development, and imaging has split into, has become very complicated now where you use several kinds of images at the same time, and you relate them. I'm, I'm not caught up on it. I'm sure there's something happening there.

Ramya:	Were you prepared for the success of the book? Or did the exposure kind of catch you by surprise?
Rapoport	My editor, Richard Merritt was very funny when it first came out, because he was a friend from the Walden school many years earlier.
Ramya:	Oh.
Rapoport	And then he had left, he had gone somewhere else for high school.
Ramya:	Really.
Rapoport	But, when the book was about to be published and he had set up these several tours, and he had also put my book on the cover. The publishers go around to book stores, or used to, and my book was on the cover of the brochure they gave, so he knew there would be good orders.
Ramya:	(laughs)
Rapoport	And that is as far as I can see. Don't even think about it. And then in the middle of my tour, I was in some city somewhere, I was being interviewed, and it was a place with a lot of booths, and there was a phone at one end, and they said you're wanted on the phone. And so I go, and I'm in the middle of this 21 city author tour, and it's Richard to say he's just been called and that I'm on the best seller list for the *New York Times*. And I screamed out in this room of people in a cubby.
Ramya:	(laughs)
Rapoport	I'm on the best seller list for the *New York Times*, and everyone stood up and clapped.
Ramya:	Oh.

Rapoport	It was very funny, and I got home from that trip and there were flowers from the publicists waiting. And then it was translated into 22 different languages.
Ramya:	Really
Rapoport	And it did particularly well in France for some reason.
Ramya:	Interesting
Rapoport	China didn't do bad. Anyway.
Ramya:	And then you ended up on the talk show circuit as well.
Rapoport	Yes, I did that for a few. I did that in England. I did that in Brazil for some reason, but I didn't go to 22 countries to do a talk show.
Ramya:	Right, no, but here you said, you mentioned you had gone on Oprah.
Rapoport	Oh yeah, that is what got it on the best seller list.
Ramya:	And how was that experience?
Rapoport	I discovered I was good at it. That's where Walden and being in all those plays was useful. I learned-I got one session of training through the publisher for somebody who had done things like opera stars, and Richard Nixon and people like that. You learn that you need short, declarative sentences.

Ramya:	(laughs)
Rapoport	And not immediately contradict yourself like typical talking heads. And you know, we thought it was rare, now it's coon. We have very good news, there are two kinds of treatment, these people aren't crazy, they have a biological problem, then a patient would come on and tell their story, and the different patients for the OC foundation always, whatever city I was in, got a patient who wanted to talk.
Ramya:	That must have been helpful.
Rapoport	Often with a dramatic story.
Ramya:	Okay. So then you were talking about how you were working on this for about 10-15 years.
Rapoport	Yeah, and then what happens at the NIH doing cutting edge things, it's well recognized, and my work has been recognized beyond my wildest ambitions in all areas. And you are suddenly competing with extramural, and you're not supposed to do that in intramural. And, I was-
Ramya:	What do you mean? Can you say a little more about that?
Rapoport	Well, there are many people in extramural; it's part of 10% of the program, and it's usually for each institute, it varies between 9 and 11%. And, this was set up way before I came here, but the notion was, for some of the institutes at least, that there should be some things that would be much harder to do. For example, when imaging came along, we decided to do it, to get developmental norms. I knew that imaging was important and one of the things that I hadn't mentioned was getting a developmental control group that we could compare with our hyperactive, and our schizophrenic patients, because of the branch. They would come back every two years, the control group was mostly local, because you could get normal kids locally. The patients somewhere out of town. The ADHD weren't hard, where the schizophrenics had to be flown in.
Ramya:	I see.
Rapoport	We also took blood for DNA.
Ramya:	Interesting.

Rapoport	And you would never had gotten a grant for it. They had to believe, extramural hated getting norms at the time. They didn't know would the machine be a lemon. The 1.5 Tesla MRI, it turned out that it lasted 22 years but that was unlikely, they mostly don't, it's like cars.
Ramya:	Right.
Rapoport	The staff would stay, and the patients would come back, and you knew you would have funding if you chose to do this. And there weren't any automated ways to measure the scans. It was hand drawn so you have hundreds of scans. We ended up with 5,000 MRI scans.
Ramya:	Really.
Rapoport	But, it turned out that we made-and this was among our best known work. We made movies. You know how the old Hollywood cartoonist would make movies?
Ramya:	Yeah, frame by frame.
Rapoport	Well, you could take the MRI every two years over a 10-15 year period, and you could make a movie.
Ramya:	Right.
Rapoport	And we found out that what's interesting about ADHD is that about age 15, half of them get much better, and half don't, and have some symptoms the rest of their lives. And the movie was different for the ones who got better and the ones who didn't. And also, there would be certain genes- we had DNA, so we could measure genes, and look at how individual genes found in disease or an animal, and look at movies-subtraction movies for the alleles of the genes. So we had DNA, and movies for the development of all the patients, and that should probably be a fourth hole category, because we were years ahead. Then we started a collaboration with Alan Evans at Montreal-a psychologist there said we were made for each other because he didn't have a clinical, but he had engineers doing automated ways of doing brain measurements. And we published probably 50 papers together.
Ramya:	Really.
Rapoport	On normal brain development, sex differences, twins.

Ramya:	Really.
Rapoport	The differences between ADHD versus controls, and ADHDs IQ in brain development, and a lot of these papers published in nature and science, things like that. And the genetic effects on these movies. We are still working on making these public, and automized of course.
Ramya:	Really.
Rapoport	But this was a huge aspect of our work, and very well recognized, and appreciated. And the people involved going all over and writing wonderful pieces for everybody. Jay Giedd is a professor at UC San Diego.
Ramya:	Really.
Rapoport	Whose was in charge of this.
Ramya:	The longitudinal study?
Rapoport	Yes, that was his assignment.
Ramya:	Okay.
Rapoport	We wanted to be in control of the control group, to match it when our patients came back.
Ramya:	The norms.

Rapoport	And we picked every two years because it was hard to get the schizophrenics because they were so rare. Childhood schizophrenia really rare, much more rare than autism, which everyone is saying isn't that-
Ramya:	Or OCD?
Rapoport	It's about 1/300th of a percent.
Ramya:	Okay.
Rapoport	But we thought, and I had two motivations. Sometimes patients, at an age when it shouldn't happen, have a very strong biological factor that overcomes what is typically a childhood resilience to psychosis.
Ramya:	Okay.
Rapoport	And that was reason. The other, I'm a pediatric psychopharmacologist, and Clozapine, because people are worried children are more susceptible to the bone marrow effects and things like that. But if you have an inpatient ward to start, and have them stay three months, then it is a safer way to do the study. So we showed the Clozapine with a childhood schizophrenic was better than the previous existing anti psychotics. And that they were just as responsive, or probably more responsive as the adults. Although there were several who couldn't tolerate it as we expected, and couldn't take the drug. But that was very gratifying because we had a handful of patients whose lives really changed because childhood schizophrenia is a chronic severe form of the disease.
Ramya:	Right.
Rapoport	And we had a lot of papers on that, and it turned out that one form, a couple of forms of genetic abnormalities, when called rare copy number variants, associated with neuro developmental disorders. Adult patients, maybe two percent, have these and adult onset patients.
Ramya:	Right.
Rapoport	But our patients had like 14%.

Ramya:	Right.
Rapoport	And many of our patients had sex chromosome abnormalities, which are associated with a slightly higher risk, and I published one of those in again *Science* again, things like that. And our last interesting paper was how many of the children over the last 20 years, the childhood schizophrenia patient we had, we looked at thousands of referrals and we only diagnosed it in about 130-140 patients. So, certainly the largest sample in the world. And it was very interesting because some of the schizophrenic patients in the earlier years that had a form of autism, which they got over, and then they became schizophrenic. And the reason that's interesting is some of the copy number variants in schizophrenia adults also are copy number variants for autism.
Ramya:	Right.
Rapoport	So they are very different diseases- For treatment and diagnosis, but they have some coon brain developmental abnormality
Ramya:	Right.
Rapoport	Anyway, so a lot of very exciting things, a lot of interest in the public, a lot of gratitude from the patients.
Ramya:	But, you were saying a lot of this research couldn't never had taken place if you were an extramural.
Rapoport	Yes, can you imagine? Well, just getting the norms when you didn't know. You said someone's going to come up with some good automated ways to measure these. With small numbers, you could have hand outline, but it takes a lot of time to train, there's drift. That's not something with 5000 scans, and but we knew that this was a hot area, and Alan Evans was leading the pack. That was his field, best Ph.D. engineers, and this was an exciting field to go into. And by the time we had a few hundred scans he had automated versions of it.
Ramya:	Automated versions to read the scans?
Rapoport	A way you could send the scan and he could, you know, provide measurements.
Ramya:	What did you mean by norms?

Rapoport	Norm. Normative data as well of the healthy controls brain development compared to the ADHD, and compared to the schizophrenic groups. And we did some OCD too. Not big time, because Sue Swedo had taken that over independently.
Ramya:	But it was really important to get the norm as a comparative.
Rapoport	Absolutely. And the norms in themselves were very interesting. The sex differences, the areas with identical twins-there are some areas where they stay much more identical than others, suggesting that other areas of the brain are much more susceptible to environmental influences.
Ramya:	Right.
Rapoport	And that's hot stuff if you're talking about what years, or what types of information might be more important, and, which is going to be so heavily genetic. Jay Giedde's longitudinal study of mono and dizygotic twins was very interesting.
Ramya:	So when did you join that longitudinal study?
Rapoport	We started that when MRI first started coming in here. I remember going to John Dotman, who was head of radiology, and saying we needed an evening-and we had Tuesday from like four o'clock until midnight because everyone's parents worked and to get them to come in we really had to have it in the evenings.
Ramya:	Okay.
Rapoport	And although sometimes we could get a daytime slot for the patients who would come in for the day, or you could always get something. And, Jesus, when did this start? Late 80s maybe?
Ramya:	We hear a lot today about neuroplasticity, and the adaptive capacities of the brain.
Rapoport	Right.

Ramya:	Is that something that came out of these kinds of imaging studies or?
Rapoport	No, not any of ours, and there's a new book by Robert Sapolsky that really says it all. That what we're learning is that the brain and behavior is incredibly complicated.
Ramya:	Of course.
Rapoport	And how certain behaviors make you change your environment drastically, and how the more we learn, the more skeptical we are. That it's going to have useful, clinical applications. We're going to learn a lot about all the possibilities and all the myriad of things that are possible. But, without tying things to patients and outcomes, I think, I don't see a way forward for clinical usefulness from this.
Ramya:	Really.
Rapoport	Robert Sapolsky, who won a MacArthur, and wrote a previous wonderful book. This book really says it all in terms that it is so complicated.
Ramya:	Right.
Rapoport	And you have to not have practical expectations from it. you will just learn how amazingly complicated it is.
Ramya:	Can we talk a little bit about the schizophrenia studies?
Rapoport	Yes.
Ramya:	And when did they start? I think you were talking about-

Rapport	Right about 1989, we decided that somebody should try studying childhood schizophrenia, it couldn't be done anywhere else, you couldn't see telling a study section it was going to take you 20 years to get your sample. And we were doing a lot of these longitudinal imaging studies at the time, so we had a lot else that was keeping us busy, thank goodness. We probably got, if you counted phone calls, I don't know how many thousand referrals we got. We contacted every state hospital in the country.
Ramya:	Right
Rapport	We contacted psychologists. It's hugely over-diagnosed because psychosis, psychotic symptoms are rare in children but they do occur in other diseases. Depressed children can almost hear voices saying they smell bad and stink, and are very bad people.
Ramya:	Right
Rapport	A quarter of bi-polar patients have hallucinations and delusions. And there are other children who just have voices and things like that, and the psychologists, because they see them so seldom all say oh you need to see someone, you might have schizophrenia. But most of them don't, that are referred for psychologists.
Ramya:	You mentioned 140 out of thousands.
Rapport	Yeah, we ended up with a final number of something like that.
Ramya:	Yeah.
Rapport	And it was certainly very interesting, the other kinds of patients. We saw that if a patient is terribly severe and has mixed diagnoses, they get misdiagnosed as schizophrenic. For example, a patient with severe OCD who has is going to the bathroom has to move, and with their nose go in a certain symptom. And they'd be incontinent, and they wouldn't get to the bathroom. And if the nurses tried to force them because they were tired of cleaning them up, they would become violent.
Ramya:	Sure.
Rapport	Well, that person only had severe OCD, and not schizophrenia. So severe anything-anxiety disorder, and if you are very anxious and have ADHD, your thoughts look very scattered.

Ramya:	Right
Rapoport	I mean, if it's extreme. So we learned a lot about how complicated other very severe, with a number of diagnoses, which is coon in psychiatry, comorbidity, our biggest finding were two. One was that these genetic rare variants were much more coon with childhood onset than in adult onset. And we also, our brain movies, showed that during adolescence they were losing cortex. Which is a-normally you're thinning your cortex to get a sort of leaner, meaner thinking machine. But they were excessively pruning the cortex.
Ramya:	Interesting.
Rapoport	Now since they all were patients when we met them, we didn't know if that's what started the schizophrenia. But somebody had postulated, since most patients start schizophrenia in late adolescence, and what's going on in adolescence is cortical pruning.
Ramya:	Right.
Rapoport	There had been a hypothesis that that might be a trigger episode as to why during that period schizophrenia starts. So there was a lot of interest in the movies of the schizophrenia compared to controls, the subtraction showing that across adolescence, and there had been some studies showing that adult schizophrenics, if you have large numbers compared to controls, their cortex is thinning more. But that could be because of their withdrawal and lack of stimulation, and so on.
Ramya:	So your movies established that there was a cortical pruning happening? In adolescence-
Rapoport	It granted that it was dramatic during, during adolescence, and more so for these patients, but since they were all patients when we met them-
Ramya:	Sure.
Rapoport	We couldn't show. There have been high risk studies done since. Not done by me, extramurally. Taking people who were either clinical high risk or a genetic high risk.
Ramya:	Right.

Rapoport	And following them, with them, and brain changes seemed to go with who converts to psychosis.
Ramya:	I see.
Rapoport	But that hasn't been our work.
Ramya:	Can you talk a little bit about some of the different research methods and approaches you've used in your career to study these- this range of psychiatric diseases.
Rapoport	Sure.
Ramya:	So, there's imaging, there's a little bit of biomarkers, genetics.
Rapoport	Right. Well, to a certain extent it's all been technology driven.
Ramya:	Right
Rapoport	The fact that they had monoamine measures, which were the schizophrenics, psychiatry does not have any agreed upon successful bio markers, unlike the rest of medicine. But I've always used the one that looked the most promising at the time. And so, to a certain extent, it is methodology driven. Although, I think the real, real threat to my career, the biggest threat would be pediatric psychopharmacology.
Ramya:	Interesting.
Rapoport	And a gratifying threat, but we did get very much carried away into imaging for its own sake. Again, because we could do it, we could do the first longitudinal data set, which got, was pretty big, and on patients that we also had DNA. And so on, and so forth. And uh, so, so it was a mixture. So technology, and changes in technology obviously were an influence, but we were always very influenced by the differences between the different diseases. Those, being in NIH were unique. Steve Wise was an anatomist who was very famous as an anatomist for the development of the basal ganglia, circuits of the basal ganglia. And so he was very interested in our OCD patients who seem to have-later imaging has made other parts also abnormal in OCD and whole circuit, so we were too simplistic, but those were wonderful papers that were very well received. So it's a combination of things. Obviously, imaging became a very big thing in general, but only the notion that there's two types of ADHD. Ones who grow out of it, because the ones who just seem delayed in their cortical development are the ones who grew out of it.

Ramya:	Really.
Rapoport	Whereas the ones who didn't, who had a different pattern-
Ramya:	A thinning pattern.
Rapoport	Of development in their movie, of their cortical development.
Ramya:	Right, the thin-
Rapoport	They, well, that's still being worked out. Philip Shaw who is in the Genome Institute, which thought that they should a genetic component, a clinical component, and his differentiation looked like a sophisticated way and is looking to see if the genetics are different between these two patterns.
Ramya:	Sure.
Rapoport	And he's gone into doing all sorts of family genetic studies and follow up studies. He has a joint appointment at NIH.
Ramya:	Do you think there are strengths or limitations to imaging versus other ways of interrogating some of these diseases? And like, what's been the relative importance of them to the development of the field of psychiatry?
Rapoport	To these, to this point, as of today.
Ramya:	Yes.

Rapoport	Unless someone thinks they have a brain tumor, there is no reason for any psychiatric patient to pay for a brain image, or study. All of the findings I'm talking about are statistical with groups on the same machine with the same measurement rate.
Ramya:	Okay.
Rapoport	And, imaging has revolutionized everything from cataract surgery, heart, liver, just about every branch of medicine. It has no practical use in psychiatry.
Ramya:	In Clinical psychiatry.
Rapoport	Clinical psychiatry.
Ramya:	Really.
Rapoport	So there hasn't been-there's only been one conceptually different new drug and that is ketamine in 50 years in psychiatry.
Ramya:	What are the implications of that?
Rapoport	That it's very uncertain. Where the field is going, and what is going to pay off in terms of clinical care.
Ramya:	Interesting.
Rapoport	A lot of things are known socially known, badness goes with badness and that if you live in poor unsupervised circumstances and so on. There's a lot known socially, and a lot known that certain psychological therapies, behavior therapies, supportive. Not psychoanalysis but supportive therapies for people to look at patterns and see what they can change and what repeats.

Ramya:	Right.
Rapoport	That if they are treatment seeking, and it depresses them.
Ramya:	Right.
Rapoport	I may be misunderstanding your question.
Ramya:	No, no. I'm just curious to understand. You know, what's your sense of the field as it stands today?
Rapoport	Right. I have real concerns about it, and concerns for a number of reasons. I was on the, if a medical degree just teaches you enormous amounts about different sorts of disorders a little bit. And then if you specialize in your residency, you'll know more to be a specialist or a family doctor. You try to keep up as much general information as you can. A very important kind of doctor, of which there's not enough good family doctors. But, what a medical degree gives you right now, is the best field to go into with a medical degree is probably global medicine.
Ramya:	Sure.
Rapoport	And most of the research oriented medical students at Harvard medical school today, that's almost their universal choice.
Ramya:	Really?
Rapoport	And they do amazing things. One of the students, for example, showed that the cause of retardation is hypothyroidism, congenitally. And it turns out that all over the world, there are parts where the soil, and the, the soil doesn't have enough, is it iodine? And so, even within Britain, there are regions where the children are in danger.
Ramya:	Interesting.

Rapoport	So one of the exciting global medicine things was all over the world, just locating these areas, and probably saving thousands of children from being retarded.
Ramya:	Good.
Rapoport	That's global medicine. What's the problem with getting a Ph.D., the M.D./ Ph.D. programs have not been as successful as hoped in many places for many reasons. One is the fields are changing so fast. Two is if you get a Ph.D. and then do a residency, you're three or four years behind your class.
Ramya:	Right.
Rapoport	Even the Ph.D.'s is complicated because like in engineering and imaging, it's getting very complicated with different mathematical models of how you combine five imaging methodologies.
Ramya:	(laughs)
Rapoport	So, to urge M.D.'s to get Ph.D.'s in fields that are rapidly changing, where they are going to be several years behind, not surprisingly because of the increasing business model of American medicine, few physicians are opting for research careers. So, there's a lot of things interlocking it all at once.
Ramya:	Seems like it.
Rapoport	Particularly in this country. Some of the best people that I've had, and the last was Philip Shaw came from Canada.
Ramya:	So, I was just going to switch gears a little bit here. A couple more areas I wanted to ask you about. One was your study of trichotillomania.
Rapoport	Yes.

Ramya:	And curious to hear about the first animal model.
Rapoport	Oh.
Ramya:	First clinical animal study, sorry, in history.
Rapoport	Yes, we never did animal models of trichotillomania. Well, there was one example, Sue Swedo, on her own, decided that we should-this famous study that I told you about where they try-we compared placebo, desipramine, clomipramine.
Ramya:	Really.
Rapoport	And, Sue Swedo spearheaded that. We got referrals from trichotillomania, and we put them in a study. There had never been a drug study of this. And we did show clomipramine was better than-it hasn't been a huge success clinically. The effect size was not dramatic, but it was the world's first treatment study of trichotillomania, and I think it got published in the New England Journal.
Ramya:	Ok.
Rapoport	But, in terms of the clinical treatment of trichotillomania, it often doesn't work, or work well enough. And it's a very hard thing to treat. There's some behavioral people who try to substitute-they force you to substitute. There is also a form of baby trichotillomania, which is mostly in boys, and which does seem to be self-limiting. And we made it well known, and some of these people to go to the OC foundation annual meetings. But I don't think there has been any great treatment for it.
Ramya:	But you did an animal study?
Rapoport	No, no, we didn't do an animal study. I became aware of the fact that there was a problem, I consulted with the Baltimore Aquarium. Parrots have a habit, an abnormality, a behavior of pulling out their feathers. And, their tail feathers are vascularized, and they can bleed to death if they pull out a big tail feather.
Ramya:	Really.

Rapoport	And I remember consulting on a case, but, and that's a very interesting case because parrots have a giant liver, and it eats up-and to give a parrot a pill you have to hold it upside down.
Ramya:	(laughs)
Rapoport	For some crazy reason. And you have to give it many times a day because the liver chops up the medicine. With that exception of a case consultation at the Baltimore aquarium, we never did a study of trichotillomania.
Ramya:	Was it that work led to an animal model on OCD?
Rapoport	Oh well there was an animal-a mouse model on OCD, which wasn't our work.
Ramya:	Okay, what's been your experience working with children in pediatric psychiatric diseases, and you know, in terms of RIBs for example?
Rapoport	Right. Well there's been a huge change on the campus with respect to children and adults.
Ramya:	Right.
Rapoport	I don't want to be a downer, but recent reactive rules now-there's a rule, there are many rules now.
Ramya:	Sure
Rapoport	And it's gotten much more difficult. I think it's gotten difficult for everybody, and during much of our years the RIB has been pretty good. In recent years it's gotten to be so complicated that we had to hire somebody whose job is almost exclusively is just to deal with protocols.

Ramya:	Sure.
Rapoport	And they gave us the budget to do it.
Ramya:	Good.
Rapoport	Because the issues with the RIB, were just enormous. And gotten more complicated recently with the problems with un-unnecessarily stringent reviews, which led to the fact that right now you can't do a placebo controlled trial in mental health. Well, there's no new drug, so, I have no need to do a placebo. And with the child schizophrenics, they were so I'll we did a double blind compared to the type of drug they were taking versus clozapine.
Ramya:	Really
Rapoport	So recently we haven't needed to do a double-blind study since we just can't do it.
Ramya:	Why?
Rapoport	Because they just closed the pharmaceutical development service because of finding-no one has heard, but a potentially dangerous error. This is the whole issue on campus, I'm sure.
Ramya:	Really.
Rapoport	At any rate there's real obstructions to, to clinical research. Across campus they have a lot of trouble getting MDs to come and work here. A lot of foreign medical graduates, our best clinical care with the children, clinician was uh, well we know, we had one guy working on contract, and therefor earning a lot of money.
Ramya:	(laughs)

Rapport	At that time, he was a superb clinician, although not wanting to be a researcher. He runs a multi-disciplinary clinic with the rest of his time. His name is Roger, but we have a very good nurse practitioner. I mean we did, until I retired and they all work for other people now, very successfully. Most of the wards are run by foreign medical graduates, physicians assistants, nurse practitioners.
Ramya:	Why is that?
Rapport	Can't get MDs to do it. Pays too little.
Ramya:	So, your research hasn't been very much affected by this new transition?
Rapport	In the last five years, it took a long time for protocols to get.
Ramya:	Approved.
Rapport	Approved.
Ramya:	Really.
Rapport	And we have to pay for a full time person doing nothing, but-
Ramya:	Yeah.
Rapport	Working with a full time person provided by the clinical director's office.

Ramya:	Can you talk a little bit about you know, your leadership role at the child psychiatry branch?
Rapoport	Right.
Ramya:	What did that entail? What were you chief of?
Rapoport	Right. Well, I think I was very influenced by how I was trained at college. I was very enthusiastic that everybody write things. A feeling that you only know what you know when you're trying to write it up.
Ramya:	Ok.
Rapoport	And that even the, the post doc, we tried to give each of them, who come for two years, some aspect of a project to write up.
Ramya:	The who?
Rapoport	The post doc. You have, if you're a branch chief, you have permanent staff, who have staff physicians, or there are staff clinicians, or staff scientists, and then you can have post-doctoral fellows. And a lot of work gets done by what are called post baccalaureate.
Ramya:	I see.
Rapoport	Who come for two years, and they are usually trying to make up their mind, do they want a Ph.D. or do they want to go to medical school. And, occasionally won't do any of that, they go to the Peace Corps, or one in my entire experience ended up doing electronic music somewhere. (laughs)
Ramya:	(laughs)

Rapport	But in general, they're deciding whether-about half go to medical school, about half get Ph.D. in say neuroscience, or clinical psychology. And so there are all of these different kinds. A part of my leadership trial was very enthusiastic about teaching people how to write, I enjoyed it. Editing, working with them through five drafts. I think the findings, I was always very enthusiastic, we'd have weekly branch meetings, where people presented, the focus was in presenting not like an undergraduate paper reviewing something. Talking about your struggles with data.
Ramya:	Right.
Rapport	And, making it clear that-and this is very important because this country does this better. When we'd have European visiting scientists, they had a very hard time with our branch meeting, where what we were supposed to do was present your problems. This data looks like garbage.
Ramya:	(laughs).
Rapport	Well, I want to show it to you. What in the world can this mean? These are our ratings, really showing every data point.
Ramya:	Interesting.
Rapport	It was interesting because I think it's something Americans are prepared to do to really discuss your problems using the Swarthmore seminar method.
Ramya:	Yeah.
Rapport	You know, is this our design? What is it? And really, arguing and talking about it. And having people present pilot data, and how it's looking, and just getting a feel for it, and learning how to look a data. And I think that style was very important, the good post docs who were going to go on and get tenure were the ones who were good at this. You got so you could predict.
Ramya:	Right.
Rapport	There was some very nice people who didn't do this well because they wanted to sort of look on the bright side almost. It isn't like you had to be a-you had to be prepared to always be your own worst critic.

Ramya:	Of course.
Rapoport	And if you couldn't do that you could be very nice, very sensitive, a good clinician, intelligent, you weren't going to make it in research.
Ramya:	How did you get to the leadership position?
Rapoport	Well, actually within the child psychiatry branch, we just started publishing so many good papers and the then scientific director told the branch chief that uh, he wanted to name three people within his group that he thought should get tenure. And he named three people, and I was one of them. I don't remember who the other two were. And the scientific director looked at the CVs and productivity for that year, for me. I assume the others eventually got it, and that was a long time ago.
Ramya:	Sure.
Rapoport	And then, I was then-when Biff Bunney left, I was put in a section under uh, Irv Copen. And Irv Copen died recently, but he stayed for quite a few years and he was such a wonderful branch chief. Julie Axelrod, who was a Nobel prize winner was head of a section. We all like Irv doing the work of branch chief so much we didn't want to change. Mike Brown who later became his own branch chief and was briefly scientific director, and was head of it. It was very strong, Dennis Murphy, I think was head of it. So everybody, and then, we were very happy. I didn't want to be branch chief because Irv was making it so wonderful to work in there.
Ramya:	Right.
Rapoport	And then Irv got invited to be scientific director of the neurology institute and accepted. And we said how could you do this to us?
Ramya:	(laughs)
Rapoport	And we were all made branch chiefs.
Ramya:	Okay. And so you became chief of child psychiatry branch.

Rapoport	Right.
Ramya:	I see. Okay.
Rapoport	And each of the sections were-if it wasn't for Irv's wonderful leadership and the coolness, and adroitness, and lack of controlling-ness, and so on, we probably would have been lab chiefs earlier, but no one wanted to, it was so great.
Ramya:	So can you talk a little bit about the growth of the branch over the years, from when you first-
Rapoport	Yes, it was getting good people and trying to get support for them was really the strategy when you recruited a person and they'd have ideas. So Jay got staffed from his brain developmental, which was making a lot of news and Sue Swedo had gotten some staff. She got them and then she went off and did her own thing. And it really helped because if you got people and they would be doing something, it would sort of promote what they were doing. And there was always a section chief that had people who were going to be useful.
Ramya:	Of course.
Rapoport	Like technicians for the brain measures, and statisticians and things like that.
Ramya:	Did you do any of the recruiting?
Rapoport	A lot over the years, yeah.
Ramya:	Yeah. And so what kinds of, what were sort of the focus areas for the branch. Child psychiatry?
Rapoport	Well, as they say in the beginning we were studying ADHD, but we would get people earlier. What got harder and harder and then impossible was getting good M.D.'s.

Ramya:	Rea
Rapoport	And I think that some of this is age. I had heard many people say that as you get to be really older, or over 75-I'm 84.
Ramya:	Okay.
Rapoport	You don't get great post docs. They want someone who will play an avuncular role for a long time to come.
Ramya:	I see.
Rapoport	And so, no matter how distinguished-I have colleagues here who won Lasker awards and things like that, and they say that as their years went on, it was harder to get very good post docs. In the case of M.Ds it's become a crisis on campus, recruiting M.D.'s.
Ramya:	Interesting.
Rapoport	Thank goodness for these superb nurse practitioners. And physicians assistants.
Ramya:	Do you think there is anything the campus can do to sort of alleviate the problem?
Rapoport	No, it's a national problem.
Ramya:	Ok.

Rapoport	Lifestyle, and earnings. When my husband and I were at medical school we knew we both wanted to be-and we only got married several years after that, but we knew we wanted to do research but what never crossed our minds was that there would be model classmates going into surgical specialties, would earn oh, eight times a year what we were going to. Never crossed our minds.
Ramya:	Interesting.
Rapoport	We come back, you know, 30 years later to medical school class reunions, and there'd be half a dozen people who'd flown their own planes.
Ramya:	Wow, was there any role for collaboration or collaborative work within the branch, or did you…
Rapoport	Oh that was intense. The branch was enormously collaborative. There was head for about ten years on a section of genetics. And he worked with the imaging people, and the ADHD, and the schizophrenic she was part of everything.
Ramya:	Did you think the branch and NIMH as a whole has changed at all over the time you've been here, and if so, how?
Rapoport	Oh enormously.
Ramya:	Yeah.
Rapoport	Enormously.
Ramya:	What have been some of the big transitions or changes?
Rapoport	I think the increasing focus on neuroscience together with the lack of new-the complexity of the brain has made medical, has made pharmaceutical companies back off. They're more likely to fail. Trial drugs are much more expensive, and more likely to fail. The brain complexity, the lack of strong genetic, the lack of strong biomarkers. Things that look like they might be very promising haven't paid off so much like taking IPFCs, taking skin biopsies and turning them into your patients neurons. We certainly have skin biopsies in an extra neuro repository from all of our childhood schizophrenia. But it hasn't paid off yet, even in areas where there is a known biological disturbance. And I think that there are a few rare conditions where they do genetically alter the bone marrow, and eradiate and give the person back-there are some rare anemias. But in general, IPFCs that looked like they were going to be so exciting haven't paid off for a long number of reasons.

Ramya:	Really.
Rapoport	It's very hard to tell, but genetics has been a big disappointment in terms of any connection to anything useful. I have a very controversial point that is being used in Scandinavia. What has been discovered genetically but that's not going to happen in this county I think. It's too complicated. People who, for the cost of prenatal screening for Down syndrome, you can now, for severe mental retardation, there are many rare variants that account for maybe 50%. They are individually rare but they collectively account for half of children born with an IQ of, say, below 50.
Ramya:	Interesting.
Rapoport	In some places, like Denmark, this is automatically being screened for, and they are very much decreasing the number of children with severe intellectual deficiency. In this country, I don't know how often that's happening, but a lot less
Ramya:	Do you think there would be other considerations that would make it more difficult for that kind of a test to come to the U.S.
Rapoport	Yes, we're in a country that's trying to ban all abortions, even to save the life of the mother.
Ramya:	Yeah.
Rapoport	But, I think this country will be the last to receive help from its present types of guidance and go to the enormous focus on the business model.
Ramya:	Interesting.
Rapoport	And the huge charges that are totally inappropriate for procedures and hospitals are what's running medicine today.
Ramya:	Right.

Rapoport	People don't do physical exams.
Ramya:	(laughs)
Rapoport	I don't see this country as benefiting from some things like that.
Ramya:	That's kind of a shame.
Rapoport	I think it's very sad.
Ramya:	Yeah.
Rapoport	I don't want to be an older person who deplores, but I know Scandinavia well, and their single payer systems just like France, they just work better.
Ramya:	Phenomenal, yeah.
Rapoport	Yeah. I have a son who married his French girlfriend and he lives in France. And they've lived in the United States for some years, but he was very happy in France, and his wife wants to stay in France, but he wouldn't come back to this country because of the medical system, among other things.
Ramya:	Has the branch, or NIMH played any role in technology development in psychiatric research?
Rapoport	I'm not as up on that as I should be. I do think that the MRI group is very well thought of, but I don't know how much is original. I think some of the analytic methods of the MRI that have been adopted widely in the field were developed here,

Ramya:	Interesting.
Rapoport	Under Peter Bandettini, I'm not sure I'm up on things like statistical leadership and so on. I know that pediatric epidemiology has had some real leadership roles historically under neurology institute.
Ramya:	Where do you see the future of child psychiatry at NIMH and at the branch going forward?
Rapoport	Well, I think I mentioned there are now five branches specifically studying child psychiatric disorders.
Ramya:	Yes.
Rapoport	So, it's huge, it's almost taken over.
Ramya:	And you think that, I mean obviously the significance of child psychiatry too, the field is old, psychiatry is old, has changed enormously in your time.
Rapoport	Right. Absolutely, and part of the problem is access to care. Child psychiatrists are very busy, and they charge at least $300 an hour.
Ramya:	Sure.
Rapoport	For middle and upper middle class, and people who have insurance that pays some. But, the cost of seeing child psychiatrists is out of reach of most Americans, especially with the gap, and more people becoming poor.
Ramya:	Right.

Rapoport	So, how to have inexpensive forms of diagnosis and treatment. There can be. One of the things people have tried to work with to see what's sort of screening apps can be used, and, which one-getting valid and reliable ones out to people is an area, a public health area, that I think will be very important and useful in child psychiatry, and there are people trying to work on that.
Ramya:	Here, at NIH?
Rapoport	Google is big on it.
Ramya:	Oh. Yeah.
Rapoport	And I think if I were to, if I were to be working on trying to get a reliable app for screening, and getting people to be able to use it would be a future thing to do for the health of- there are people, there was a guy in India who took several very poor states in India, and he trained people who couldn't even read or write to give interviews and to do kinds of brief psychotherapy.
Ramya:	Right.
Rapoport	And he's apparently done an amazing job. You can manualize some of the therapies.
Ramya:	Really.
Rapoport	There have been experiments in several other poor countries showing you can affect the benefit of the poor, and prevent suicides and get people better with psychological disorders. So there's been some very good work in other countries that had to have a low cost delivery of care.
Ramya:	Have the boards of scientific counselors, have they had any impact guiding, helping to guide your work or your research?
Rapoport	Not recently. In the beginning I found them very helpful.

Ramya:	Yeah.
Rapoport	But over the years, less so.
Ramya:	Less and less.
Rapoport	I think that was just because I got more sure in knowing what I wanted to do and so on, and they got more and more respectful.
Ramya:	And you had a lot of freedom, pretty much.
Rapoport	Yes. No one ever told me what to do.
Ramya:	So you could investigate anything of interest.
Rapoport	Right. Though I'm sure if I picked some really peculiar topic-
Ramya:	(laughs)
Rapoport	If I wanted to study green plants, or something, they probably would have wondered.
Ramya:	Right, and has sequestration had any impact at all on the work at NIMH.

Rapoport	What?
Ramya:	The sequestration, the funding difficulties at the national level…
Rapoport	Not yet. Listen I see, it's 12:20.
Ramya:	Oh yes, okay.
Rapoport	So I think I have to go.
Ramya:	Let’s wrap this up then. Is there anything else that you wanted to talk a little bit about?
Rapoport	No. No.
Ramya:	I think you did quite a lot of talking.
Rapoport	No, I've enjoyed the interview, thank you.
Ramya:	Thank you very much. I hope I covered all the important parts.
Rapoport	I think we did.

Ramya:	Okay, great, well, it was really nice to meet you.
Rapoport	A pleasure. Are you enjoying this job at the NIMH?
Ramya:	I am, I'm actually just visiting for a couple of days.
Rapoport	No, I know, but I mean, is this something that's a big part of your life, doing this?
Ramya:	It is, but not at NIH.
Rapoport	Oh, at somewhere else.
Ramya:	I do it all over.
Rapoport	Oh, I see. Okay.
Ramya:	Thank you very much for coming.
Rapoport	Thank you.
Ramya:	Good, I think, yeah, it's always too short.

End of Interview