

AN INTERVIEW WITH RICHARD TESSEL

Interviewer: Jewell Willhite

Oral History Project

Endacott Society

University of Kansas

RICHARD TESSEL

B.S., Experimental Psychology, University of California at Los Angeles, 1962

M.A., Experimental Psychology, University of Illinois at Chicago, 1969

Ph.D., University of Michigan, 1974

Post Doctorate Fellow, University of Colorado, 1974-75

Service at the University of Kansas

First came to KU in 1975

Assistant professor (please supply dates)

Associate professor (please supply dates)

Professor (please supply dates)

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Q: I am speaking with Richard Tessel, who retired in 2003 as Professor of Pharmacology and Toxicology at the University of Kansas. We are in Lawrence, Kansas on June 16, 2004. Where were you born and in what year?

A: I was born in Cincinnati, Ohio, three days after D-Day, June 9, 1944.

Q: What were your parents' names?

A: My mother's name was Ann and my father's name was Louis.

Q: What was your parents' educational background?

A: My father drove a milk truck and my mother is the only one in the family, in addition to me, who had a high school degree.

Q: Did you have brothers and sisters?

A: Yes, I did. I had a brother whose name was Carl. He was 12 years older than I was. He joined the marines in 1952, so I really didn't get to know him very well. He passed away in 1984. He was a marine and served in Vietnam. Unfortunately, he had cardiovascular problems and he died of a stroke. I never did know very much about my father's family. In my mother's family my grandfather left Russia to escape conscription into the Czar's army. Jews were not really happy. It was not a good place for them to be.

Q: What was your mother's maiden name?

A: Silverman. My father apparently had pancreatic cancer. One day my mother asked me to bring a suitcase to the hospital. I thought he was coming home. Wrong. He just passed away.

Q: How old were you?

A: Sixteen. Then my mother decided that we would move to California, which is where her mother and father had moved to stay with my mother's sister, Rose. My grandfather was Max and my grandmother was Bertha. He ran a little tailor shop.

Q: Where in California did you live?

A: Downey, California, which is a suburb of L.A. I finished up high school there. Then I went to U.C.L.A.

Q: We'll get to that. What elementary school in Cincinnati did you attend?

A: Bonn Hill. And for Middle School, Walnut Hill. They had modernized the language requirement, because they had previously required Greek. So I studied Latin. This was a school for better learners.

Q: Was this in the public school system?

A: Yes. My brother went to Hughs, which was the how to build trucks kind of thing. I had wanted to be a scientist. I was just fascinated with dinosaurs, as are most boys of five or six. Then In Los Angeles I had a physics teacher at Alexander Hamilton High School on Robinson Boulevard in L.A. My class just recently had their 40th graduation thing. Of course, I didn't get to go there. But I still know exactly where it is. I had a very good physics teacher. I thought, "Wow! This is really cool stuff." I read everything I could find about Einstein. I still haven't finished *A Short History of Time* by Stephen Hawking. I thought that's what I would do for the rest of my life, be a physicist, maybe a theoretical physicist. I

had a lot of good friends. The problem was that I had moved around so much so I didn't have a base.

Q: Did you have honors in high school?

A: I don't know if I did or not. I seemed to do pretty well on the SATs every fall. I think I was 85th in English and 93rd in math. A friend of mine and I went to U.C.L.A.

Q: Were you in extracurricular activities in high school?

A: Politics was always a fun thing for me. We would just sit around the table and listen to my parents and grandparents discuss things. My grandfather was a Communist or a Bolshevik. He was alive at the time that the revolution took place. He thought finally something good was going to happen. So I used to argue with him and with my uncle, his son, about the problems associated with this wonderful stuff, such as Stalin and few other things. They loved to hear me give my opinion. I was six or seven. I became interested in languages. I used to think that everybody spoke English but they had to translate it into different languages so they could speak their language.

Q: Did you take languages in high school?

A: German. That was the scientific language at that time. It turned out to be useless. They changed the doctoral requirements. Foreign language was no longer an option as an extra skill. I was the kid that nobody chose, the last one remaining against the wall.

Q: You mean not good at sports.

A: Yes.

Q: When did you graduate from high school?

A: 1962.

Q: Did you have summer jobs or jobs during the year?

A: Oh, yes. When I was 12 I used to take the bus to downtown Cincinnati to the Young Women's Christian Library. My job was to dust the books. The problem was the dust didn't go anywhere except up in the air. So I found myself reading and they would not be thrilled with me being paid to read. My mother worked at Chilites, which I hope is still there. It was a department store. Then I got to California and I don't think I worked during high school, or did I? My mother had a friend whose husband was a manager of a supermarket chain called Lucky's. So I got to work there for \$3.85 an hour—it was union—which was not bad for a kid. I replaced stuff on the shelves. I eventually got to be a cashier. So that was really helpful. My mother didn't really have any skills. Actually, she came to work for her brother, my Uncle Sam in Monrovia. That's where she worked for years. He became my surrogate father.

Q: What sort of business was he in?

A: He had a jewelry store. This was in the 1950s after he got out of the Navy. He was on the staff of MacArthur, not that it was any big deal. He was a sailor. MacArthur wasn't a nice man. Anyway, he came back and learned about the jewelry business. Recently on television there was a commercial with a tall clock, which said Box. That was the name of my uncle's store, Box Jewelers. He has had many movies made in his store. In fact, I got to see one being made. It was boring sitting all night watching guys move the lights around.

My friend Ken and I drove to UCLA to school. I always insisted on taking 8 o'clock morning classes because I didn't want to waste time. We would get there at seven because the parking at UCLA was not very good.

Q: Did you have a car, or did your friend have a car?

A: We both had cars. It was my mother's car. We would get there and the parking attendant had a real sense of humor. One day when we arrived the sign in front of the place where he collected the money said, "You may be wondering why I've asked you all here today." I thought that was amusing because it was a parking lot.

Q: What was your undergraduate major?

A: I had two of them. One was physics. That's what I started with. I began to realize relatively soon that this was not going to be real good for me. The physics sequence at that time was Physics 1A, 1B, 1C and 1D. One of the professors said, "I shouldn't have to teach this stuff. You can get it all from the book." So that gives you some idea. I got a B and one A, a C and one B and a D and one C. That didn't look very promising, so I ended up with a minor in Physics. But I took what was called a Strong Interest Blank, which is the name of a person, not intensity. It is a psychological test that is supposed to help you figure out what it is you would like to do. It came out psychology. I thought, "That's not science." Well, little did I know. So I changed to psych, experimental psych, not clinical psych. The guy who was teaching us a course on learning and perception was Alan Jacobson, who had just published a paper in the magazine *Science*. The *Journal of Science* is prestigious. He had taught a rat to do something and then

extracted the RNA from that rat's brain and put it into another rat's brain. He thought that the second rat learned faster than the first one. Well, it turns out you can get the same kind of effect with yeast RNA. In other words, it didn't matter. I had a real interest in how the brain worked. So I thought maybe I could make a contribution in that kind of thing because there is so much unknown. And I really wasn't good at math, not good enough, I should say. So in psych I started to get As and Bs instead of Cs and Ds.

I now know, however, that I have been diagnosed and treated for many years for agitated depression. I just get real scared, real terrified. I wouldn't do well on tests. I would think my life would be over and then it would turn out okay. In fact I sometimes think that (unclear) should follow his role, the direction he's setting out for me. Now I was doing pretty good and enjoying this stuff. But I wanted to go to graduate school because I knew that to be a scientist you had to do that at that time. I applied to the University of Illinois at Chicago.

Q: When did you graduate from UCLA?

A: 1966.

Q: Did you have influential teachers there?

A: Not really.

Q: Did you continue to live at home?

A: Yes, until I left for graduate school.

Q: Were you employed during this time?

A: I don't recall if I was working at the supermarket at time or not.

Q: Then you graduated from UCLA in 1966 and went directly on to graduate school.

A: Yes.

Q: Where did you go?

A: I went to the University of Illinois at Chicago.

Q: Why did you choose that school?

A: Because they accepted me. You see, my GPA was 2.58 because physics dragged me down. The other part was okay. The University of Illinois at Chicago had just started a graduate program. So they had a lot of young faculty and it was a fun time to be there. It turns out that one of my best colleagues here has an uncle by marriage who was the chair of my department in Chicago. I had a 2.58 but I had good ACT scores so they thought I might be worth something. I started working for a guy named Alexander Rosen in rats.

Q: Was your major psychology?

A: Yes, experimental psych. I met my first wife there. We got married. Al was my best man.

Q: What was her name?

A: Patricia Creeden.

Q: Was she a student also?

A: No, she was a technician for Al. I published three papers there. I thought, "Wow, this is really cool."

Q: What was your major interest there, what your dissertation was on as a master's student?

A: The guy I was working for was a physiological psychologist. We explored drugs and brain damage and how it affected learning and stuff like that. At the end of

my third year on my master's, they finally got around to figuring out how they were going to do the comprehensive exams. What they did was use the introduction and method to a paper and we were supposed to write the discussion. As we all know, discussion is the hardest part of any paper to write. Anyway, I just froze solid. I couldn't even remember my name. I was terrified. They said, "Well, it's been nice knowing you," and gave me a terminal master's.

Q: Did you have children with your first wife?

A: Yes, my oldest daughter is Lauren. She has two of my grandchildren. They live in Kansas City. She decided to move out here. Her husband is from Los Angeles. That's where she met him. She has Ben and Libby, (Elizabeth), two of my grandchildren. Then my other daughter, who is younger than Lauren by about three years, was married three years ago. She works in California.

Q: What is her name?

A: Jennifer. She had a boy just recently. So I have three grandchildren.

Q: After you got a terminal master's at the University of Illinois, then what did you do?

A: I thought with a master's in psychology I wouldn't have any trouble getting a job. We drove out to L.A. I found a job in a hospital for the mentally retarded. It was near the University of California at Irvine. So I was doing this and then a very famous man who just recently passed away decided to become governor of California, namely Ronald Reagan. He said, "We don't need hospitals for the mentally retarded," so he terminated them. So we have lots of people living out of boxes and I didn't have a job. I had trouble finding another job.

Q: What had you been doing at this hospital?

A: I was figuring out where most staff injuries occurred. Was it pinning on diapers, was it fighting, was it cuts? Anyway, I didn't know what to do. So I had heard of a program in psychopharmacology at the University of Michigan. I was interested in learning something about how drugs work. I wrote there and they told me that that program had been cancelled. Psychopharmacology is really a medical situation, not experimental. They said, "Would you be interested in applying to pharmacology?"

I said, "Yes, I sure would."

My wife Pat was not real thrilled about this option. She liked L.A. So I applied to the University of Michigan in the Pharmacology Department, which is part of the medical school. They looked at my stuff and said, "We don't really want another psychologist here." So I wheedled, I begged, I groveled. The biggest S.O.B. in the department, I was put in his lab. They called him Ted. He had a reputation of terrifying everybody. Plus he was a Harvard MD, PhD. So I got accepted and they put me in his lab. At the same time there was a woman named Peggy, who had been an electromicroscopist at the university for years and had heard about this man, Ted. Anyway, one day Peggy and I were doing something in the (unclear). Ted walks up and says, "Peggy." She just about went through the ceiling, fell over backwards and glass went everywhere. Ted said, "Get a hold of yourself." Right. Anyway, they subsequently married and are good friends of mine. I was carried around as a chaperone when we all went to meetings so it wouldn't look (unclear) for them. First I worked with Ted in the

lab. Then in time we had to declare a major. I went to do my rotation in cardiovascular pharmacology with Benedict Lucasy, a very well known guy in cardiovascular, heart attacks and stuff like that. I went to his lab to start my rotation with him. He said, "You don't have a tie."

I said, "No, I don't have a tie."

He said, "everybody has to wear ties in my lab." This was in 1970, Vietnam and all that stuff. It took him about 10 years to decide they could wear something other than white shirts. So I went downstairs to one of the faculty who always wore a bow tie.

I said, "Ben won't let me in his lab because I don't have a tie." So Carl, my professor, made a bow tie for me out of paper toweling and put magic marker dots on it. I went up to Ben's lab and he looked at me and said, "Okay." It's not that Ben didn't like me. I don't think he felt my thing was with him. He thought I had best move on. Well, there was a man named Dr. James H. Woods, who is still there. His mentor had left to be director of the (unclear) of drug abuse. It is still at Michigan. It is where drugs from NIH are tested for abuse liability in primates. I thought this would be good. I would learn about drugs and animals and stuff. Jim and I got along real well. The whole lab would go out on Friday nights to an all you can eat fish fry. The one who could eat the most got dessert. He is still a friend of mine. I haven't turned him off totally.

One day someone said, "If you want to work with monkeys, you'd better get one. "

“What?” What they do is they put you in a room with cages of rhesus monkeys. There is a narrow place to go through and a door at the other end. They put you in there with a huge piece of bottle brush wood and shut the door behind you. You’ve got to get that monkey out of the cage and bring him out so that he can be tested. I don’t know who was more afraid, the monkey or me. It was an interesting concept, and it worked. I didn’t get bit. One day a monkey got out of his cage just as somebody opened the door from the lab to (unclear) Hall. There goes the monkey. I had what was basically a butterfly net, which is something you scoop up the animal with. Somebody was coming to the door of (unclear) Hall. I said, “Don’t open the door.” They shooed the monkey back in my direction and as he ran by I scooped him up and put him back in his cage. It was just fun because we thought we could do anything. We really could study anything that we wanted to study.

Q: Were you studying the effect of various drugs on monkeys?

A: That’s correct. Monkeys will self-administer drugs.

Q: Really?

A: They don’t do it easily. They don’t have a syringe.

Q: Do you mean you would give them a pill and they would take it?

A: No, I mean you put a catheter in their vein and connect it to a drug reservoir. If they press a lever they get some drugs intravenously. They love cocaine. They love barbiturates. They love narcotics.

Q: What was the purpose of giving them cocaine?

A: To study its effects on behavior. It's reinforcing and rewarding. We wanted to find out what would antagonize it.

Q: You mean find a drug that would make them not want it.

A: That's right. I wouldn't have said it that way in strict scientific jargon. I don't know what they want. I don't speak monkey. Anyway it was just really a good time. Then it came time for comps and of course I was terrified again. I had diarrhea for weeks. I was totally freaked out. I just remembered something I should have put ahead of that. While taking a course, the major pharmacology course, we were given a question. We had to go to the library and document our answer to it. Well, I just freaked out. It was too open ended and I didn't trust myself. But eventually somebody helped me convince myself that I could make it through the program. There are two theories. Which is better? It doesn't really matter about what. Then I remembered my psych training. One theory is better than another theory if it requires fewer assumptions, if it is more testable. So I approached the thing in that direction. Ted was the instructor. It was the best answer he had ever seen. A plus, plus, plus. Wow! That was a big deal. He didn't hand those suckers out very often.

Back to my comprehensives. I was terrified there because they asked questions anywhere from molecular biology to behavior. So I managed to answer enough well enough to get out.

Q: Did you ever teach during your graduate school days?

A: No, we didn't do teaching at that time. In fact, it was questionable if they taught. They lectured. I asked my friend Ted where I should go for my post doc. He said

he had a friend at the University of Colorado. I thought, “Okay, I’ve got to take it, this stuff I’ve been doing, and move on to the next step.”

Q: In what year did you get your Ph.D.?

A: 1974.

Q: The time when you were at the University of Michigan was the time when a lot of protests were going on here. Was that sort of things were going on up there?

A: You know, I don’t recall. But I sure know I was in Chicago in 1968.

Q: Oh, you were?

A: Yes, the police riot and Mayor Daly. That was just awful. It had quite an impact. I remember watching TV coverage of that university in Ohio where people were killed.

Q: Kent State.

A: The federal government decided that I was necessary for them in 1969.

Q: Were you drafted?

A: If you were a college student you got a deferment.

Q: That’s what I thought.

A: Now was the time they needed more gun fodder. So I went to where I was told to go. I thought this would keep me out. When I was three years old, I fell out of a building, 80 feet, I was told.

Q: Did you fall out of a window?

A: No, off a fire escape. In those days they had fire escapes. My mother had left the door open, I was three, and I crawled up the ladder. I landed on the only patch of ground in the middle of a cement lake. My father burned his hands on the

banister because of the friction. He got everybody and his brother to help give me blood and whatever at Jewish Hospital in Cincinnati. I got fixed up. I'm not sure whether God was laughing at me or not, but I did survive that.

Q: So the Army wanted to take you anyway?

A: No, the Army didn't want me because it turns out I have 2500 vision.

Q: So that's what got you out.

A: That's right.

Q: I would have thought being in school would get you out.

A: Not at that time. I don't know if my poor vision is associated with anything that happened to me. Anyway, they didn't want me and I was thrilled. I would be more likely to shoot myself than anyone else. I would see films and listen to the news. It was a horrible place to be, absolutely and astonishingly bad. Well anyway, I didn't have to go.

Q: You were talking about your post doc.

A: My friend Ted knew Charles Rutledge, a person who interested me and it was an obvious connection, the next obvious thing to try. I got about eight papers out of my dissertation, and I have the smallest dissertation I have ever seen.

Q: What was the name of it? I suppose it was about monkeys.

A: Have you heard of Fen-fen?

Q: It's a drug that people took to lose weight.

A: That's correct. Fenfluramine is the fen. That's a drug that has an amphetamine like structure. But monkeys wouldn't take it. So I asked my boss why that was. Anyway, he made a whole bunch of compounds for me to test. Then I went on to

test my hypothesis with Chip Rutledge in Colorado, little realizing that the drug was going to fall off the market. But it was the only amphetamine like structure that monkeys wouldn't take. So it looked like it didn't have abuse potential. And you could lose weight with it. Isn't that wonderful!

Q: Sure.

A: But apparently you can lose your lungs too, and that's not too good. You could get acute pulmonary hypertension. Anyway, once you are successful with something, if you want to get funded you have to move on in that direction. Chip Rutledge helped me learn to do the techniques he used. I was there about eight months when he said, "I am going to move to the University of Kansas to be department chair of pharmacology. Would you like to come with me?"

My wife had just said, "If you go to Kansas, I'm going to L.A." She took the two babies. I had to have money to pay child support so I needed a job. So I came here. I was terrified again. I didn't know a soul here. I was now an assistant professor with responsibilities. I had to generate grants. I had to teach classes.

Q: And you had never taught before.

A: No. And other things. They were not so concerned about the extent to which faculty were beneficial in the education of students. Did you show up? Did you tell them about the stuff? Remember the professor who said, (unclear). This was more progressive than that. In fact, the dean of the School of Pharmacy, Howard Mossberg, when students came in to complain about me said, "Do you learn anything?" They said yes. During my entire tenure here in the School of

Pharmacy I think we had basically 95% or 99% of the students graduate and second, pass the boards.

Q: That's really good.

A: Well, I got grants and got funded and turned out okay. But I began to realize that the direction my research was leading me was not the direction this field was going. And I wouldn't be able to get funded. So I began to think about local funding. The American Heart Association at that time was offering grants. And I had learned something about cardiovascular. So I got funded, not a whole bunch of funding but enough to keep me going. I chose a sabbatical to learn more about cardiovascular stuff and about peptides and proteins and things like that, which is where I thought things were going, which was true. In 1985 I got a sabbatical at the National Institute of Health.

Q: Where is that?

A: Bethesda, Maryland. I was terrified again and there was nobody that I knew. I was scared I would lose my job and that I wouldn't publish and that would be the end of my career as a scientist. Well, it turned out not to be that way. I was reasonably successful at the cardiovascular stuff, particularly when a guy, Mike Dody was his name, was hired by the Pharmaceutical Chemistry Department. He knew about peptides. So I banged on his door the first day he was here.

Q: Was that at KU?

A: Yes. I said, "We really ought to do this because it is a brand new peptide." Well, we got about 10 years worth of stuff out of that. But I'm not happy just doing things. I have to have a direction because science for me is discovery. The

person who has the most papers when he dies does not win. So I'd rather be somebody who produced something. I mattered. Well, Chip Rutledge's career was not going where he wanted it to go. He was a pharmacist who decided to start doing the clinical route and became Dean of Pharmacy at Purdue in Indiana. So we got a new chairman. I subsequently learned about the politics of the situation that I didn't want to be in any more. And the dean who had replaced Howard Mossberg, I had assumed that he would never be able to continue a five-year, (unclear) the next five-year review. It became not a place I wanted to be. Then I had to leave.

There were some people at the Life Span Studies who needed somebody who knew about animals and mental retardation. So I read everything I could. I put some stuff together and they seemed really excited about it. It was the best thing that ever happened to me. These people were people people. Most people around here were not people people. That lasted about 15 years.

Q: About what time period was that?

A: About 1990.

Q: And you were studying retardation?

A: Mental retardation in animals. How do you do that?

Q: I didn't know animals were retarded.

A: What we do is look at the effects of manipulations on the animals' behavior and ability to learn. See, there are ways to make rat pups with small brains. Then you see what you can do with them. What are their limitations?

Q: So you were working with rats now rather than monkeys.

A: They were working with people. I was working with rats. I got a post doc and things were looking really good. We were doing exciting stuff. I mentioned that we can make rats with small brains. Basically you give the mothers a drug or a chemical at a particular time during gestation. Then the rats that are born come out with small brains. You can't tell them apart from normal rats unless you work at it. My idea was that I would try to generate about a gazillion tasks. I decided we would use tasks that would allow the animal to succeed as rapidly as possible. That was to tell the difference between how many levers they had to press to get a reward under a certain condition and then another condition. They learn which one is likely to get reward and which one is not, basically discriminating between 16 lever presses versus 10 level presses. And they did it. The small-brained animals did wonderfully because we started with one versus 16 and then four versus 16. I thought we were screwed. I thought the only way to make something out of this was to take their brains apart and weigh the various parts of the brain because it is a thing people had used to illustrate that this compound works. Well, we found out that only one part of the brain, at least in terms of weight, was changed, the part typically associated with memory. We made them use what they didn't have in order to get reward and it changed their brain.

Q: Really? It changed their brain?

A: Right. It's exciting. It's astonishing.

Q: Do you think it would work that way in people?

A: I don't know. This is where it was going to be going until (tape stopped) The hippocampus, which is associated with short-term memory, got bigger. It weighed

more, you know, with controls and what have you. There is another model of rat that we used. If you give another compound to a newborn rat pup at a particular time, ten days or whatever, then when they grow up and are stressed, they bite themselves. I don't know if you are familiar with a disease called (unclear) syndrome in people. These kids have to wear helmets to keep from bashing their brains out. Sometimes all their teeth have to be extracted to keep them from biting themselves. It's horrible.

Q: Of course.

A: And nobody knows why. Theoretically, what is responsible for it is that they don't have an enzyme. But how the enzyme ends up in (unclear) is not clear. But it had to do with the loss of this compound called dopamine in the brain. People who lose that compound in the brain when they are older they get Parkinson's Disease. That's what causes it. When it happens early, when they are born, they have this other problem. I thought that was real interesting too. How come it matters? Why do they do that? How does the brain know that? Well, we would train these newborn animals up and when they got to be adults they were learning just fine. We took their brains out to check to see if the compound was down. It wasn't. What? The dopamine is normal? I gave them the compound. We took some animals out randomly before we trained them and checked their brains. Ah, the dopamine is gone. And with training they were having no problem learning. What is going on? They are learning fine. I talked to my student. "Are you sure you measured everything right?" This is not supposed to happen. Impossible.

This would be a (unclear) lesion. My friends talked to me and I said, “Do you believe this?”

They said, “Yes, early intervention.” But the problem was that yes, it was early intervention when I made the lesion but it was not early intervention when I tried to train them.

Q: They were adults then when you started to train them.

A: That’s right. The dopamine came back, whether we did it earlier in life or later.

Q: It came back with training?

A: Yes. I thought that was real cool.

Q: Oh, yes.

A: Fixing the brain with training. The effect of behavior on the brain as distinguished from the effect of RNA or DNA. Fifty percent of the variability of most things is genes and fifty percent is not genes. If I could put the two together I could spend the rest of my life and the rest of my students’ lives to figure this out. To discover things that weren’t supposed to happen. I used to tell my students, “Doing your experiments is the most fun you can have standing up, discovering things.” I said, “We’re on a mission from God.” I was supposed to come to Kansas. I was supposed to go over and be in the whole thing and come to here. Unfortunately, science has a very short half life. You either make a splash and people pick up on it or you don’t. I published the stuff and was able with the help of friends and whatever to get my last grant with the Institute of Child Health and Human Development. I got a million and a quarter funding for four years to explore this stuff. It worked out that my chairman didn’t like me.

I'm not a very good lecturer but I'm a pretty good teacher. The students in pharmacy don't want to know that. They want to know what's on an exam, how many questions are going to be on there, what do they have to remember. There were also faculty and the chairman gave me about 15 different areas to cover. And he was on my case. He sat in the lectures that I gave. I wasn't very happy and he didn't appreciate me. And all these other things happened, so I said, "To hell with it." I talked to the provost and a lawyer and we arranged that I could leave the university at 59 and a half. But I tell you, to discover things no one else has ever known before. That's why I went into science.

I forgot to mention this. A few years ago these findings did come out and I'm a member of the (unclear) Pharmacology Society, a very small group of people. Skinner was a founder. Peter Doos was at Harvard and knew (unclear) Knew a guy in physiology and his chairman of Pharmacology said, "You ought to talk to this guy named Skinner. He thinks if you put drugs in these guys it will be different." That's how the field of (unclear) pharmacology began. Peter is a friend of mine. Anyway, I went to a meeting . It's about a day and a half meeting every year. A guy I know, a friend of mine, (unclear) my research, me. I didn't know whether to be embarrassed or jump for joy. He said, "That's the feature of (unclear) pharmacology." They can do lots of stuff with biochemistry. By the time we are needed, we won't be around. Everybody will be a gene jock. So anyway, it was the premier of my whole life. I made a contribution and I have been recognized by people whose opinions matter to me.

Q: I read somewhere that you had studied whether brain exercise could help with Parkinson's.

A: Yes. Let me back up. And that's where I wanted to go. I wanted to use the newest techniques in people. There are some people who say that exercise of the body helps improve blood flow to parts of the brain where they are necessary. My thing was to what extent can animals overcome the problems they are faced with. So I did a complicated experiment, the same thing that I mentioned about the dopamine coming back didn't happen in these animals. It appears to matter the age at which the lesion is produced, not necessarily the age at which they are trained. My graduate student at that time, bless her heart, just finished analyzing the data and said, "It doesn't work. It doesn't work."

I said, "Kendall, that's my job to figure out. May I see the data, please?" I designed the experiment so that no matter what happened I would have positive things to talk about. Well, apparently this whole (unclear) transmitter coming back didn't happen. But we did get more dopamine to get released from the neurons in sufficient amounts that it overcame Parkinson's like symptoms. Tissue (unclear) transmitter is a really tough thing to see a change in. Because the brain is set up not to have that. That's what makes (unclear) so astounding. Content went up astronomically. These animals didn't and we got data. We could have explored why. Well, then all this other stuff happened. I'm very naïve about politics. That is not to say I didn't help them. I was very good at getting rid of myself. I just love to do science.

My new family. I have a second wife.

Q: What is her name?

A: Julie. She kept her maiden name, Bramschreiber. My last name only has six letters in it. You have to spend half an hour spelling the other one to the people on the phone. Anyway, she has worked for the pharmaceutical industry for many years. She was a nurse. She went to the University of Northern Illinois. One of her instructors was a woman I went out with for a while when she came to KU, long before I met Julie.

One of the things my first wife did for me was to say, "I don't think we should have any more children. It is easier for you to go change than for me." I said sure. This is almost a comic thing. You bring the sample into the office and there is this gorgeous blonde sitting behind the desk who picks it up and says, "That will work." It is one of the most embarrassing things that can happen to a man. Anyway, my second wife Julie wanted children and I couldn't do that. So artificial insemination led to the creation of my son Zachary and my daughter Megan. They are just wonderful people.

Unfortunately, my father worked two jobs. He never had any hobbies. My hobby was watching TV, reading and learning things, watching educational TV and discussing politics, which doesn't hold you well in Lawrence, Kansas. Unfortunately, you don't have friends, you have acquaintances here. You don't have friends. I am reminded of what Harry Truman said, "If you want a friend in Washington, buy a dog." Now I have to learn how to be a retired person.

Q: Back to when you were at KU, you did teach classes, didn't you, in addition to research?

A: Oh, yes.

Q: What classes did you teach?

A: I taught The Effects of Drugs on the Brain, Autonomic Pharmacology I guess you'd call it, and Central Nervous System.

Q: Did you originate any classes?

A: No. At that time people taught less in medical schools than Schools of Pharmacy, who teach less than (unclear). Our primary responsibility is to get money in, to generate research and build programs.

Q: You have talked about papers you have had published. Did you ever write a book?

A: I didn't write a book, but I have contributed to books, chapters and whatever. Writing a book is a daunting thing to do. I would love to be able to put all this stuff that I've talked to you about into a book. But without the facilities, secretarial and stuff like that... There are people around here who want to have buildings named after them. Budig was one. My understanding is that he was a crappy chancellor. So having a building named after me is irrelevant to me. I want people to be able to say, "He made a contribution." I don't want to have to toot my own horn. I'm not good at that. I don't think Einstein had to toot his own horn. People came to him because he knew things and did things. And that's how I felt about science. Do the best I can. Sometimes you have to kiss a whole bunch of frogs before you get the prince.

Q: You belonged to professional organizations, I suppose.

A: Yes. I was an editor. I was a member of the American Society of Pharmacology and Experimental Therapeutics. I was an editor of that journal for about 10 years, I think. I would write reviews of articles that were submitted and see if I couldn't help them make a better paper out of the thing. Three or four years ago I was asked to be on the editorial board of the American Psychological Association journal, *Political and Experimental Psychopharmacology*. That was based on a whole other thing that I did. I was on the review committee for the American Heart Association of Kansas affiliate. Then I became chairman of that committee for a few years. Then everything got reorganized. I think I have put in my time.

Q: Do you remember outstanding former students who have gone on to greater things?

A: Yes. My first student, Susan Burgess, and I were trying to figure out what she should do. Ralph Adams—unfortunately, he passed away not too long ago—was on the same floor, although he was a chemist, a world famous electrochemist. He devised a procedure for measuring electrochemically active things and applied it to the brain. I thought, “Wow! If we can't make hay out of this we shouldn't be here.” Anyway, it turns out the brain makes adrenaline as well as the adrenal gland makes adrenaline. We don't know what it is there for. At that time we believed it was important because it would have evolved out if it wasn't. Wrong. I am very good at discovering things that don't work. So Ralph Adams and I did a lot of things. I worked with Ron Borchardt, who is a big muckity muck in KU and internationally loved for the stuff that he does. Gary Griswold, who just retired as the chairman of his department, Medicinal Chemistry. I tried to

collaborate with anybody who would be interested in what I had to do. So Susan left. She just got divorced and found a job in industry. That is the last I heard of her. Tom (I can't remember his last name) was not a happy person because he had not got into medical school. So he stuck around long enough to find out a way to get into medical school. Andy Snoddy's father worked at Eli Lilly. He was a technician there for a guy named Ray Fuller, who has since passed away. He was a giant in understanding how drugs work in the brain. In fact, Prozac came out of work, among other things. Lilly has been milking that thing for years. When the patent was about to expire, they gave you a controlled release one so they could patent that. It is real important for the treatment of depression. Andy's father was Ray's technician. Ray knew me and said, (unclear). So Andy worked with me and got his Ph.D. but found his career to be more towards clinical stuff. So he got a job in industry. He does clinical research that people want him to do. We talked off and on over 15 years. During the time Andy was here a guy named Manly Paulus came to my lab. He was in psychology and didn't like it. (unclear). Apparently, schizophrenics have a lot of phenylethylamine in their urine. This compound that the body makes is like amphetamine. And we know that amphetamine can produce paranoid schizophrenia. Of course the idea was to link this up to the disease and this is what is wrong with them. This guy comes up and says, "What do you think about stress?"

I said, "Well, stress pushes a lot of stuff out in the urine." Now Manly has been my best friend for a long time. We would just yell at each other about

science. Andy had to leave the lab because it freaked him out so bad. I was just doing fun science and so was Manly. Manly's goal was to get his paper in the journal *Science*. My friend Manly was at the time a licensed jump master. There used to be a place you could parachute out at Wellsville. I've been there. I'm afraid of heights and I thought maybe I could do that and that would help. That's where I met Manly and I associated with him. I jumped out of an airplane. The first time I totally...I mean the former president just did that. Well, when I jumped out it was just you, nobody to help you or whatever. Anyway, the pilot was flying around and he said, "Do you see the drop zone?" I said no. He turns the plane on its side. "Do you see it now?"

"No."

"Then open the door." Fortunately, there is this thing that opens your chute for you because I would be hitting the ground with my hand around the thing. I am totally amnesiastic between the time I left the plane and when the chute opened. I don't think I want to do that any more. As they used to say, "What sane person would jump out of a perfectly good plane?" Anyway, I managed to get some funding for that and some graduate students volunteered to jump out of an airplane for the first time and we measured their heart rates and collected their urines before and after the jump. My chairman at that time was furious with me.

"Are you crazy jumping out of an airplane? I just brought you here."

Anyway, we wrote the article. Stress produces enormous increases in this compound in the urine in normal people.

Q: Are you saying that stress has an effect on schizophrenia?

A: Yes, I think that's true in any event. What I'm saying is that stress causes things to change. The question to ask is does it happens in normal people too. They are not paranoid schizophrenics. I should have asked...Maybe they have to do it repeatedly, continuously...stress. Because paranoid schizophrenics are under a lot of stress.

Q: Their disease would cause them to be under a lot of stress.

A: They think someone is out to get them.

Q: Then it would be hard to tell whether the stress causes them to feel that way or whether they feel that way because of the paranoia.

A: There are ways to try to figure that out. So we wrote a paper and got it accepted in *Science*. My chairman had a picture framed that said, "If you can dream it, you can do it." It is a picture of a guy in a parachute. That was nice.

Q: Did you have honors at KU?

A: Teaching honors?

Q: Whatever.

A: Behavioral Pharmacology is kind of one of those things that, "What do we need to know this stuff for? All we need is to know about drugs so we can get a license and practice and make money, \$80,000 a year." I had hoped to do some teaching at the Life Span Institute. One learns quite early not to increase one's nongrant making papers, dollars. (unclear)

Q: Have you been involved in community activities in Lawrence?

A: Not really. I wanted to do science. This is my avocation and my vocation. It's what I loved.

Q: Will you have continued involvement with KU?

A: Perhaps. I'm not real happy with KU. It was a different time when I started here. We all felt young when the future was in front of us. It has often been said that Kansas has a better university than they are willing to pay for.

Q: I've heard that a lot.

A: I calculated my original salary and adjusted for inflation. I probably ended up making the same amount of dollars as I did in 1975.

Q: Is that when you came to KU?

A: Yes. Howard Mossberg used to say, "They don't pay you much, but they leave you alone." Now they don't pay you much and they don't leave you alone. I'm sorry to say it. Let's say I would not throw liquid at the university if it were on fire. Have you been around this place long?

A: Since 1969.

Q: Okay. The previous governor I think it was sent a letter around asking state employees how he might be able to save money. I was tempted to write a letter to him and say, "Close the University of Kansas." If you are not going to do it, don't do it. This state does not have the population that will support a state college system, Emporia State, Pittsburg State, etc. California has it all over the place. But there is not enough money. There is not enough expertise, in my opinion. KU, of course, is a very snooty place. K State is just honest to God farmers is all. I'm sad. I planned to continue doing this until I died. Another

thing, Don Bahr, internationally respected faculty member, died the day after he retired. One of my colleagues in the department was visiting his daughter in England. He had a heart attack and died. The assistant dean, on whose committee for a Ph.D. I served, Jerry Matchet, he died. I said, "I am not going to let this place make me commit suicide or kill myself or die in the saddle." For what, this? So I got enough money. My wife is not real happy with me, not having to work. She has to work. Let's say that our lifestyle is determined to a great extent by her. My children, I'm a little worried about them. They don't seem to have a driving thirst for knowledge. I just loved learning things. Wow! That's what I still do at home. I try to learn things.

Q: What are you planning to do in retirement?

A: Part of my problem is that I've had a stroke and it turns out I have only one of the two major arteries (unclear) that goes to the brain. That was getting clogged up and so I had a stroke. Fortunately, I was among people who recognized the symptoms and got me to my doctor. Oh yes, I had a cancerous polyp in the colon. My father died when he was 60. My brother died when he was 60. And I just turned 60. So I don't know. I'm reminded of a famous baseball player who had to have his liver transplanted. That didn't last very well. He said, "If I had known I was going to live this long, I would have taken better care of myself." That's my story too. I don't want to live forever. I don't want to exist forever. I'd like to live and I don't know. Right now I clean the toilet, do the shopping, I make meals, do the dishes, vacuum, all the things I dreamed of doing in my worst

nightmares. So I don't know what I'm going to be doing. I hope I will be around long enough so that my kids will remember what I look like.

Q: How old are your children?

A: One is 16 and the other one just turned 13. I didn't plan on having this situation at this age. For a guy who didn't want kids, I sure got a lot of them. They are wonderful people, but I am just not trained to be a parent. I'm only following the only example I ever had, and that was my father. He had a lot of anger. My brother had a lot of anger. I tried to not do that. Maybe I will spend some time paying attention to what KU has for retirees. I don't know. I'm just trying to take it one day at a time. I'm trying to enjoy life. I just love sitting out in the back of my house and look at the bunnies run by or the squirrels and the smells that remind me of my youth, when the sun hits the grass. If my wife is in a good mood, I have a good day.

Q: Is there anything I haven't asked that you would like to include?

A: I just love science. I continue to get the journal, *Science*, just to see what is happening and what kind of jobs are out there. I don't want to move from Lawrence because of the kids. Can you understand how it feels as though this whole thing was planned out for me? My father was supposed to pass away. I was supposed to go to California. I was supposed to go to Chicago. I was supposed to go to Ann Arbor. I was supposed to come here and meet the people I was supposed to meet. I'm the only person in my family who has ever gone to college. This kind of hierarchy that I kind of made up for you, felt to me in a way that this is what I was meant to be. This was why I didn't die when I was

three. This was why the cancer was discovered and why I was able to have the stroke diagnosed and was sent to the hospital. It makes a wonderful story. It's fun to think we are here for a purpose.

Q: Sure.

A: At least it is fun for me to think I am here for a purpose. But sometimes I think God has a sense of humor and he doesn't like me very much, or she doesn't like me. I can't think of anything else. I appreciate you taking the time. I hope this is some help to somebody some day.

Q: Thank you very much.

A: You are welcome.