

## Len Katz oral history

CAF: OK. So this is December 14, 2015. Carol Fowler and Donald Shankweiler talking to Len Katz from whom we're gonna take an oral history. So do you want to ask the questions, Donald?

DPS: OK. We'll go through all the questions. What can you tell us about your childhood and early years that might have prepared you for a life as a science researcher?

LK: Yeah. My...Well, I was always a kid who was interested in science. In college, I started out majoring in chemistry. This was according to my parents' wishes. But, after a year and a half, I was what...18 years old, chemistry wasn't feeding my soul. I wasn't...I was at that age.. And it was a big disruption. When I left school, I joined the army. It was a real major break with my...

DPS: Before you went to university at all.

LK: Right, but there's a longer story which I'm not going to go into.

CAF: But wait. You went to college in chemistry and then disliked chemistry and then joined the army? Is that how it worked?

LK: At the break in my sophomore year, Christmas break. So I joined the army and then it turned out that I did not have to serve active duty, because the army decided they had too many bodies at that time. This is what...1957, I think. And so they said: "You're going to do 6 years of active reserve." Which I did. I was in the reserves six years, but I never had to disrupt my college schooling.

CAF: Right.

DPS: What kind of activities did you have during those reserve periods?

LK: I started out...Well I went through basic training. Then I had... I was in infantry. I was in tanks for a year. In the last four years, I was in army intelligence.

CAF: A spy!

LK: I was a spy. I was..not quite. I was reading about Soviet Union cybernetics as it was called at that time...you know, computers and that sort of thing. Anyway I did go back to school.

CAF: Same school?

LK: Same school, UMass. And majoring in Psychology. Once I got into Psychology, I thought it was just too soft. And so I drifted towards the harder, more scientific aspects of Psychology, statistics, and experimental design, experimental psych.

DPS: So you decided after that first period in the army that you wanted to major in Psychology.

LK: Well, I didn't have a choice. The army didn't want to take me.

CAF: You didn't have to be a psychologist though.

LK: I didn't have to be a psychologist, right. Yeah.

CAF: So you knew you didn't want chemistry. You didn't think you wanted physics, apparently.

LK: Right. Actually, I'd had introductory physics at that point and I liked it. I don't know why I didn't go into physics. Probably too lazy. Just lazy

CAF: And was Jerome Myers in the Psych Department?

LK: He was not at that time. He got into the Psy... So I went to graduate school at

UMass also, the same as my undergraduate. And this is in part because my undergraduate record was not stellar. It was, I think, basically a 3.0 average out of...I don't remember.

CAF: That's OK...In that time of gentlemen's Cs. That's good.

LK: Yeah. And, but the faculty, which was small at UMass, knew me well and were very happy to take me as a graduate student. So..and Myers was there. I didn't know him til I started graduate school. But he offered me an assistantship, and I started working for him. We got along pretty well.

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And I liked statistics, which was his specialty

CAF: I'm really glad you used his stat book in our class.

LK: You liked it?

CAF: I thought it was just beautif...It really helped me understand ANOVA very clearly.

LK: Good.

CAF: I inadvertently gave it away at some point, and, like five years ago bought it again.

LK: Yeah

DPS: I used Lindquist's book. I don't think it helped me that much, but maybe that was because of my brain rather than the book.

LK: No, I think it's more rudimentary than the Myers. The Myers is a little more advanced.

CAF: It judy does a really nice job of laying out the various different designs and where the error terms came from and so on.

LK: Yeah, I think that was partly why I went into statistics. Myers was a really good teacher. So.

CAF: So what was your dissertation on?

LK: My dissertation...I think I'd have to look it up to find out what the title was. It was about two-choice learning. So in those days, a very popular paradigm was to make the subject guess which of two lights is going to come on next. And you just push the button under the light that you think is going to come on next. And, you know, we would vary...The experimenters would vary the percentages of a light coming on or the sequences and so on. So it was vaguely risk taking. There were a lot...not a lot. There were a few mathematical models. Bill Estes had a mathematical model, So it was more of the model aspect that interested me.

CAF: OK.

LK: So the dissertation was on that...in that area. I published it in JEP. At that time there was only one JEP, not four.

CAF: Right, At the beginning of my time, there was only one JEP too.

LK: Oh really? I also published my masters thesis in JEP. Slightly different topic.

DPS: That didn't hurt your career.

CAF: Right. Good journal.

LK: No, I had a few publications when I went looking for a job.

CAF: So you were at Stanford before you came to UConn?

LK: As a post doc. For two years. The Institute for Mathematical Studies in the Social Sciences.

CAF: Now when would that have been?

LK: That would be 1960 to 1960 to 63. Well, two years.

CAF: Uh huh. And you met... Did I read that you met Al Liberman there? And that's kind of how your... you got to UConn?

LK: Yeah. I did. That's sort of how I wound up UConn or part of the reason. Al was at the Institute for...

CAF: Advanced Studies...

LK: Advanced Studies in the Behavioral Sciences. Something like that. And so he was there that year. And my guess is that Bob Rollin wrote him that I was interested in a job.

DPS: You already made an application.

LK: I think so. Things were pretty informal. The Old Boy network was pretty much the way things worked. And I knew someone at Stanford who knew [David] Zeaman at Connecticut. I don't know the sequence of events at UConn. But Bob Rollin wrote me that they were interested. He didn't know if there was a job. He suggested, I think, that I get in touch with Liberman. Or Liberman got in touch with me. And so I had a couple of interviews with Al Liberman at Stanford. I think I told the anecdote that on the first visit, he handed me a little book. And he said, "Tell me what you think of this." And it was Noam Chomsky's *Syntactic structures*, which I think probably had been published only a year or two before?

CAF: '57

LK: '57, a few years before. But I had never heard of it. And when I came back to Al, I allowed how this Chomsky fellow had a couple of fairly interesting ideas. And I think that's what convinced Al that I was OK.

CAF: Now he [Chomsky] might have appealed to you for different reasons from appealing to Al, because he was very interested in formal languages. Noam Chomsky that is, not Al. That might have appealed to you as a mathematician.

LK: Yeah. No I certainly liked the structure.

CAF: So you came to UConn in 1963.

LK: Yes, and what would you like to know?

CAF: Um, well...

DPS: What was most memorable about your early years? That was..

LK: We had very nice offices up in Monteith. It was an old cheaply constructed building, but the offices were sound proof. They were large. I remember I often ran subjects in my office. I had plenty of room. I had a desk. I could set up apparatus on the other side of the office. I think what I remember most from those days are the early laboratory computers. Peter van Gelder, another faculty member was the computer guru. And with his prodigious help, we set up experiments, running experiments on these laboratory computers. They were very primitive by today's standards. Our machine had 8K of 16 bit memory, and we used a teletype for input and output, punched paper tape.

CAF: Wow. And so what would ..would you somehow be able to present stimuli to subjects on a computer screen? How did it work?

LK: No there were no such things as computer screens. Later, a few years later when we decided we wanted screens, we had to use video displays. And we hooked up

computers so they would actually run video displays, But..Oh or we also had them run oscilloscopes. That's very different from the screens that we now have.

CAF: Right, a lot less convenient.

LK: A *lot* less convenient. No we had...It was kind of clever, I think. The teletype had a spinning...what do you call it type thing...

CAF: Like a ball or like a...

LK: It wasn't a ball; it was a cylinder. So it typed from this cylinder. And it typed on teletype paper, which was just a continuous roll of sort of brownish white paper. What I did was I masked the paper where the teletype printed. So the teletype would print out the stimulus for the subject for that trial and then it would advance. When it advanced, it would advance past the mask so the subject could see it. And then the subject would hit a teletype key, and we would record the reaction time and the keypress.

CAF: Wow. Pretty neat. Pretty neat.

LK: Yeah.

12:05

So we just had a little square cut out of cardboard superimposed over the teletype.

CAF: I took an early, probably early, computer course from Peter [van Gelder] and first he taught us assembly language and then he taught us Basic. Were you guys programming in either of those?

LK: Yeah. So he taught you assembly language?

CAF: He did. Yeah. JMP for jump.

LK: Because I learned assembly language, and I was not too good at it, but you had to know a little bit.

CAF: Yeah. Well, Basic was a big relief after that.

DPS: George Scholes tried to teach a group of us assembly language when the first computer arrived at Haskins in 1965, and he was sent to learn to use it. He was sent off to a workshop at IBM by Frank [Cooper].

LK: But you were using DEC machines.

DPS: Yes.

LK: So actually, I ran some experiments over in Electrical Engineering. Taylor Booth was head of Electrical Engineering. He was just very kind to let me use their DEC machines. So I had to use a different assembly language to program that machine.

DPS: So: When did you join Haskins Labs, and what were the circumstances?

LK: Well it was much later than 1963, 4, 5. I joined the Labs in 1974, so I was an Associate Professor with tenure. I had already had a couple of grants from the National Institute of Education, which was the federal Department of Education in those days. And I had been doing studies in reading, and Donald, you'll remember that we used to meet with Isabelle Liberman.

DPS: Yeah.

LK: We just had these wonderful meetings with graduate students on...

DPS: Carol, you probably came to some of these.

CAF: Well, you know, I don't remember these.

LK: I don't remember Carol.

CAF: Would they have antedated me? So I came in '76 [no, in '71]

LK: Yeah, so this was maybe a little earlier.

DPS: I think we still had them.

LK: I don't know. But they were just great fun. They were filled with...Not filled, there were only a few, bright people. And we just had a great...

DPS: Benita Blachman, Joanne Carlisle

LK: The young woman who didn't want to change her working class accent.

DPS: Hyla?

LK: Hyla Rubin.

DPS: Hyla Rubin

CAF: I remember that name

LK: Because I remember a little argument between her and Isabelle. Isabelle was trying to shape her into someone who could get an academic job, and this meant working on...You know, this is 1974 or so, and this meant making her present..making her accent presentable.

CAF: Yeah

LK: And Hyla resented that as I recall.

DPS: It didn't prevent her from getting a good job, however.

LK: Well, she was a talented young woman. Yeah. So those were very exciting times.

CAF: You were talking about child reading? Is that what the topics were.

LK: Yes. And of course Isabelle and Donald were proposing phonological knowledge as the key to early reading instruction, and I picked up on that. I had been doing research on reading for years. Had lots of papers on reading. But..

DPS: With [David] Wicklund, right? Some of them?

LK: Some with Wicklund, some with Millie Mason.

DPS: Yes, I remember her.

CAF: Millie overlapped with me. But I dimly now remember that you collaborated with him.

LK: Yeah.

DPS: And he was a developmental psychologist, right?

LK: Yeah. I felt I needed a developmental psychologist, because I was going to work with children. I had no experience with children. So...

DPS: I don't know what kind of research he did before he teamed up with you.

LK: Well, he did verbal learning. We outfitted a large van with a tachistoscope. And we tested...We would drive it into a schoolyard. We would ask the principal if we could test the children. The principal would invariably say: If it's OK with the teacher, it's OK with me. We'd go in, take a child by the hand, lead him to the van...

CAF: Jeez!

DPS: Nowadays

CAF: You could get arrested for that!

LK: Nowadays, for sure, it would be a three year sentence.

Laughter

LK: Them were the days!

CAF: Yeah, really. Good thing you were good intentioned. So both of you: When would the idea of phonological awareness have started to be talked about by you guys.

LK: Yeah, Donald?

DPS: Well, probably as early as '70. or '71

CAF: Yeah.

DPS: Yeah.

LK: And how did it come about?

DPS: Well, it partly came about, I think, by frustration. Because we had been approaching reading differences from a neuropsychological angle, and we were looking for hemispheric...evidence of hemispheric differences. Because the idea was that poor readers would not be as consistently left hemisphere dominant. So we were working on that angle, and it wasn't paying dividends. We weren't getting results that were more than marginally significant if that, and so we began to think about reading in terms of speech.

LK: Yeah. I recall that. There's a lot of British work... Not a lot. There's some British independent reading...

DPS: Yes. We were talking about this the other day. There was a meeting that...One of the first reading meetings that I was invited to by NICHD auspices that was held near Baltimore. It was organized by...it was convened by Al Liberman and Jim Jenkins jointly. And everybody who had done experimental work on reading was there. It was where I met Eleanor Gibson, for example. But one of the people I met there and the one that had the greatest influence on me personally was [R.] Conrad, from Cambridge, England. And he presented research on short term memory in hearing-impaired kids that showed so dramatic...their difficulties in verbal memory, particularly, verbal short term memory. And I was so impressed by that that I wanted to do experiments like that with children who were not deaf but...

CAF: Which you did. Which you did.

LK: Yeah. I did some of that left hemisphere-right hemisphere stuff with good and poor readers

DPS: With a tachistoscope.

LK: With a tachistoscope. When I was in England with Tony Marcel.

DPS: Oh yeah

CAF: What was the vintage of that trip? When would that have...

LK: The whole year...academic year of '71-'72. At University of Sussex.

CAF: Yeah.

LK: Tony and I ran this left hemisphere-right hemisphere thing. I recall Tony, who, I think really has a brilliant mind...Occasionally we would flash a word like "king" and the child would respond "queen." And Tony said; Hey that's interesting! And I said: Oh, it's just messing up my standard error. You know, too much variance. I acted like a wonky statistician. But I did not continue that work when I came back to the states. I began doing what we called Sternberg scanning work...visual scanning of print...lines of print. And looking at good and poor readers, varying the redundancy of letters in print. Things of that sort. But I wasn't onto phonology. I was still working with sort of statistical variables, redundancy...

DPS: Statistical variables regarding the orthography.

LK: Regarding the orthography, yeah.

21:13

So meeting with you and Isabelle just pulled me in the phonology direction. You know I had been reading a little psycholinguistics. And I was interested in Chomsky.

We had a group of professors who would meet, reading a chapter of Chomsky every week. I don't recall if you were part of that group.

DPS: I don't think so.

LK: Bill Wilson was, I recall. So I was interested in that direction. But it was really you and Isabelle that jelled my activities. So..

CAF: So was Al involved in...not in the reading meetings apparently.

LK: No.

CAF: He wasn't. 'Cause it seemed to me that Al's interests and Isabelle's interests kind of....should have led to an interest in phonological awareness. Just because he getting interested in a specialization for speech perception, and it wouldn't be a specialization for orthography. And so how do you get that specialized knowledge into the reading domain.

LK: Exactly! Exactly. So I can only think that there was dialog that happened in the Liberman home.

CAF: On the breakfast table.

LK: Around the breakfast table. I wish both of them were here now so that we could...

DPS: Yeah. I think that Al did not get interested in the reading research until we began relating it to speech and speech perception. And then he got very interested.

LK: Yeah.

DPS: Because I remember that he and Ignatius and Isabelle and I collaborated on a paper that was called, I think, Orthography and the Beginning Reader [1980, In Kavanagh and Venezky, eds]. . But it was ...we looked at both the memory phenomena that we had started to study, and the phonological awareness idea was also discussed there.

LK: Was that a book chapter?

DPS: Yeah. It was a book chapter. It was for a conference that was held in '76, or '77, an NIH conference, that I would have gone to but I was on sabbatical in England. at that time, so Isabelle went, and she presented the paper.

LK: But there were a lot of ideas popping up at that time. It was an exciting time.

DPS: It was. I think that we made a lot of headway during the decade of the seventies. From the....being mostly on the wrong track perhaps at the beginning of the decade and doing more interesting things later.

CAF: So should we move on to: Tell us your early impressions of the Labs.

LK: Well, I guess I first started going to the Lab around '71, probably about the same time I was attending the meetings with Isabelle and Donald. And I ...you know it was an exciting place. Lots of very smart, very specialized people there. It was a fun place. There were interesting people. I liked the grunginess of it. This was the old Labs [270 Crown St, New Haven]

CAF: Me too.

LK: But I didn't go on the payroll til I joined the A40, and I think that was 1974.

DPS: Could well be.

LK: You asked me what was on that early A40, and I cannot remember.

CAF: Yeah.

LK: Yeah

CAF: Yeah, '74. Well, you know, speech projects, reading projects.

LK: Yeah. Yeah, yeah.

CAF: The way I remember it, they probably had A64 at the time, so all the speech production work would have been on the Kathy Harris program project grant. And then speech perception and reading, long term would ...

DPS: That's right. They had two going on parallel for quite a few years.

LK: Has anyone mentioned on tape yet, Kathy Harris' predilection to pick up keys off people's desks?

CAF: No! No, I think of her more as a person who leaves her keys in the bathroom, but...

LK: So brilliant Kathy Harris, if she stopped to talk to you at your desk would frequently leave with the keys on your desk. She did this totally absent mindedly.

CAF: Right, right.

LK: And so you had to...Well, the first place you'd look for your keys would be..

CAF: On her desk. So she didn't notice that your collection of keys was different from her collection of keys? Looked useful so she took it.

DPS: So then you asked Len to...If he remembered some of the tutorial topics that Ignatius discussed.

CAF: Yeah because in the previous...he had said that "Ignatius Mattingly played this tutor's role for me." And certainly I think of Ignatius as sort of a teacher that way.

LK: He didn't present any formal classes, did he?

CAF: You know. I can't remember taking a class from him, but....

DPS: Yes, he taught.

CAF: What would he have taught?

DPS: He taught phonology in the Linguistics Department. He taught that course for years.

CAF: So when would David Michaels have come? Because I almost think that when I came...

DPS: Well, Ignatius was the very first person. He founded the Linguistics Department.

CAF: I know, I know

DPS: He came one year to sort of make the arrangements for it. He came before anybody else. Then Arthur [Abramson] came the next year. Then...and Philip Lieberman and David Michaels soon followed.

CAF: OK

DPS: So there were three of them.

CAF: I thought of David Michaels as the guy who taught phonology when I was a student, and I came in '71, not '76, so maybe by then David was teaching...

DPS: Maybe they alternated or something.

CAF: Maybe so. I just can't remember taking a course from Ignatius which seems like a [...]

DPS: But Ignatius also taught a graduate course in Linguistics and Reading

CAF: Did he?

LK: Ignatius was very approachable, so, certainly for myself, who could ask a lot of stupid questions. Because I was really out of my depth. Let me back up a little bit. One of the great things about Haskins, is still true, is that you can, a young

researcher...or an old researcher...can access people who are expert in areas that he or she is not.

CAF: Right. Right.

LK: And, it's understood in the Lab that the other person will give some time.

CAF: Yeah.

LK: And that was really invaluable to me. I could get out of my comfort area in topics that I chose to do research on. I could extend myself. And Ignatius was one of those people from whom I got a lot of reassurance, and information.

DPS: Well, I had the same sort of experience when I came to Haskins in 1965, that I think it was Arthur who told me: We don't expect you to be an expert on everything. We're here to pool our resources as it were.

CAF: Well, it was also what was great for graduate students because they.. You know, there were a lot of language people here at UConn, but you'd go down to Haskins and there were those [UConn] people and all these other people at well. You know, speech production, speech perception, language, phonetics. It was just a wonderful resource for a graduate student.

Let me just stop this and restart it [the recorder]

29:41

Second file

DPS: So you're perhaps best known for your work on cross language studies on reading.

LK: Mmhmm

DPS: So how did you become involved in that kind of work?

LK: Haskins made a connection with Belgrade, Yugoslavia with Georgije Lukatala. George came to Haskins, I think in the late 60s. He was an electrical engineer interested in telephony. And I suppose he wanted to know something about compressing speech.

DPS: Pitch extraction was what he was working on initially at that time.

LK: But he just happened to mention to Michael Turvey that, in his country, Yugoslavia, people could read in two different alphabets, in the Roman alphabet and the Cyrillic alphabet. Both of which addressed the absolute, identical phonology. So it's the same spoken language but two different orthographic systems. And Michael immediately saw that experimental psychologists could make a lot of mischief with this kind of situation.

CAF: Right, right.

DPS: A psychologist's dream!

LK: It really was.

CAF: Weren't there something like four shared letters and four of them had...sorry eight shared letters four of them had the same pronunciation in both alphabets, four of them had different pronunciations? Golly!

LK: You couldn't have designed...

CAF: I know. Exactly!

LK: It was just wonderful.

CAF: And a lot was made of that...of those two alphabets.

LK: So Michael brought me in originally to buttress the statistics side of the research, but I quickly began doing research on the two alphabets. And so that's basically how the two-language, working with two languages got started.

2:09

Laurie Feldman came in very early. I think actually the first paper I published was Katz and Feldman. And, it proved to be just a very rich research setting. Michael a[Turvey] nd Claudia Carello published a lot of work. Georgije Lukatela, a lot of the Yugoslavs. We began bringing a number of the younger Lab people to UConn for PhDs.

CAF: So name them.

LK: Well, Mira Peter, Sasha Kostic, Dan Todorovic, somebody else....

CAF: Kaca Lukatela

LK: Kaca Lukatela

DPS: Dragana..

LK: Dragana Barac. So it was a very...It was a research context with a lot of people involved, UConn-Haskins people and Belgrade people.

DPS: One of the Deans here was interested in promoting this.. I remember being at a...

LK: Tuckish...

DPS: Oh yeah.

LK Rudy Rudolf Tu... I'm trying to think of his name...

DPS: Maybe he wasn't a dean

LK: Turkish, Turkish [sp?]

DPS: I remember attending a meeting when he was there and some of our people...Michael Turvey was there, I think..to try to set up the formalities for an exchange. I don't know why I was there, because I never...

LK: Well..

DPS: But anyway, you remember it.

LK: There were a few such meetings. They never came to much

DPS: I think they did.

LK: Like what?

DPS: They set up the machinery for...

CAF: For smuggling laptops over there?

DPS: Well for reciprocal...

LK Well what did we do reciprocally? I mean we brought Yugoslav students over here, but we didn't need the graduate school. Well, they had to get admitted, but other than that...I don't think UConn...

CAF: There never was any formal relationship with University of Belgrade.

LK: There was. There were formal documents, but I don't think they..Can you think of anything concrete? By concrete, I guess I mean money.

DPS: I don't know. I guess we'd have to ask Michael [Turvey].

LK: Michael might know. But Ram Frost came to the Lab in 1985, I think, 1985. So I started working in Belgrade in 1979. By 1985 things were going very smoothly. Ram was a PhD student from Israel, Hebrew University. And we thought that his dissertation could include Hebrew...the comparison...could include a comparison

between Hebrew reading, English reading, and Serbian reading. So this would be three...

DPS: You would have three poles for alphabetic languages if you represent it that way.

LK: for orthographic depth, Serbian is a very shallow writing system. English is deep, not very shallow at all. And Hebrew without the vowels is quite deep as we say. That is, there's not much in the print itself to give you a clue as to how to pronounce the word. That's a deep orthography. And so Ram did this dissertation, which actually made a big splash. I think it set his career off.

DPS: And that was your idea? This three-cornered comparison?

LK: Yeah, it was a mutual...as these things are.. It's always..The ideas always come out of..

DPS: Well it was very productive. We're still following that paradigm.

LK: We are.

CAF: But the paper I think about was Turkish, Hebrew and English, right?

[No Hebrew, English, Serbian: Frost, R., Katz, L., & Bentin, S. (1987). Strategies for visual word recognition and orthographical depth: a multilingual comparison. *Journal of Experimental Psychology: Human Perception and Performance*, 13(1), 104.]

LK: No.

CAF: Wasn't it Turkish?

LK: I did a Turkish-English paper, but not Turkish, English, Hebrew, no. It was Serbian. I think it was published...If it was published in '85, then the work would have been done earlier.. But

CAF: So there's a famous figure [showing RTs in different conditions in 3 languages]. And so it is English, Serbo-Croatian and Hebrew?

LK: Yes.

CAF: I would have said it was in the... '87, something like that? The reason why I'm even familiar with it recently is because I think Anurag [Rimzhim] might have had a picture of it in his dissertation? Or he thought about having a picture of it in his dissertation or something.

LK: It's a paper that's frequently, frequently cited. I think it's Ram's and my most frequently cited paper. I wonder...

CAF: Oh. The research was published in 1987, Frost, Katz and Bentin? In JEP

LK: Oh, OK.

CAF: Yep, yep.

LK: So it probably was '85 [when the dissertation work was done]

CAF: Yeah. Then how about other cross language collaborations, e.g., Banu Oney.

LK: with Banu, we did I think only one paper, a Turkish-English comparison. We compared...I can't remember... kindergarten or first grade children, fourth or fifth grade children and young adults both in Turkey and in America. And again... not again...we showed that the Turkish children learned to read very rapidly because they had a very shallow orthography, and English speaking children do not. But by the time that both groups were adults, they were on a par; they were equal.

DPS: We did a little bit of work on...with Isabelle and Ognjenovic on... looking at learning to read in Serbian and found similarly that they were well ahead of their English-learning counterparts in those elementary grades.

LK: If you said to a Belgrade schoolteacher: How do the kids do on spelling? You had to ask this question a few times, because she would not understand what you were talking about.

CAF: Right, how could you possibly have problems?

LK: "We don't teach spelling"

CAF: Yeah, right. It's obvious.

So how did you meet Banu Oney?

LK: I'm pretty sure she contacted me. So I ...probably after the Frost, Katz and Bentin was published, I got a lot of queries about possible collaborations. So Banu was one. And Turkish of course is an interesting, shallow language. It has a very different syntactic system than English, so it was a chance to try something different.

CAF: And how about Elena Grigorenko?

LK: So Elena was already at Yale. So it was quite natural to...She contacted me to do studies in Russian. And we did. We did some very nice work in Russian. And later some genetic work.

CAF: Yeah. She's quite a remarkable person, isn't she?

LK: She really is.

CAF: Just has a vast array of skills.

LK: She really is. She's the equivalent of two of most of the rest of us.

CAF: Is she still at Yale?

LK: No. She just transferred. She just, I think this month, is transferring from the Child Study Center at Yale to University of Texas at Houston. And they've given her a lot of stuff, at University of Houston. She'll be working with Jack Fletcher.

DPS: For goodness sakes.

CAF: Oh my goodness!

LK: But, I said to her: What's wrong with working with Jack Fletcher at a distance. I've been doing that for 20 years. But, no, she changed. As always, Elena is a very personable woman, but she is a little bit of an enigma. One never quite knows what her motivations are.

DPS: She's been involved in promoting literacy in African countries too.

CAF: Oh! Has she. Oh.

LK: Yes, she has a lot of African work.

DPS: Before we leave this area, I was interested in your contacts with the Brussels group. And it seemed to me that you had quite a few.

LK: I think the only work I published with the Brussels group was some work with Daniel Holender.

DPS: Tell us a little about that.

LK: Well, it's not very interesting actually. It was letter spacing. The only result I remember is that if the spacing was...becomes greater than the spacing between words then the reader is in trouble. And I think I could have told you that before I ran the experiment. But I didn't do...I don't think...I'm pretty sure I didn't do any other work. Alain Content...Holender is pretty much retired from research. Bertelson passed away a few years ago. Alain Content was very active in that lab. And he's still very active in our area.

DPS: Also [Jose] Morais, right?

LK: I don't know how much Morais does these days. Have you seen things?

12:46

DPS: He was a leader in these studies with adult illiterates. And that have continued and blossomed out in some ways. And he was one of the first people who was involved in that, because he is Portuguese himself.

LK: Yeah. Uh huh.

DPS: And that's where these illiterates came from.

LK: Didn't Kaca Lukatela's dissertation stem from that?

DPS: No.

LK. No. I thought she worked with...

DPS: There was...She did research there that was Haskins sponsored research that she did in Serbia with illiterate mountain...

LK: But that was not her dissertation.

DPS: That was not her dissertation, But we published it, and Claudia Carello was...

CAF: This was on phonological awareness in illiterates, right?

DPS: Yes. Very striking results were obtained from that. But Paul Bertelson was an important person for Haskins Labs because he embraced some of Al Liberman's ideas and probably arranged for him to get an honorary doctorate at Brussels and...

LK: He was certainly very friendly. I know that I visited his lab a few times. Once or twice for a couple of weeks. And Bertelson was always fun to talk to, interesting to talk to.

DPS: Very interesting man.

LK: As I said, Alain Content is sort of holding up the flag these days. He has some good graduate students. And he's doing nice work. One of his students, a young woman I met, asked me for an early publication of mine, and I wrote her back saying I don't have a digital copy of it. It was before print was invented or something; it was a very old paper. And a few weeks later, I got a copy. She found a print copy, digitized it, and sent me the print copy.

CAF: Very nice of her! That was very nice.

LK: Very nice of her, yeah

DPS: One of the students, I think a Content student, had a predoctoral year here at Connecticut.

LK: Oh yes, he became a professor

DPS: Perseman

LK: Peereman

DPS: Peereman

LK: He's a professor, I'm not sure...the Eastern part of France, Lyons maybe...Ronald! Ronald Peereman

DPS: Yeah, I remember. He took my course.

So, looking back on your own research, what work are you proudest of?

LK: Well, I think that the work that was part of the Shankweiler, Isabelle Liberman, nexus, I think the work on phonological awareness was...is undoubtedly the most important because of the effect it has had on education, reading education in the United States. It really...That work plus the efforts of a lot of other people inside of Haskins, but a lot of people outside of Haskins, we changed the way that reading instruction was done in the United States. You know the battle is not finished. We all know that, but that was a substantial effect of all of that research. I mean other than

that, I'm best known for my work on orthographic depth. And a lot of that work I did in the 1980s and it's still cited.

CAF: But what would you say is the status of the idea of orthographic depth. Do people still accept that dimension as an important one?

LK: Yeah. It's not a dimension, and I never...I may have talked about it informally as if it is unidimensional. But it's not, and...so several people have been making the notion more complex, more sophisticated: Zeigler is one, and I'm blocking on the name of the British woman, I don't know why.

DPS: Frith?

LK: No, not Frith. Oh! Usha Goswami.

DPS: Usha, OK

LK: Goswami and Zeigler have extended the notion of orthographic depth. And recently, I've noticed...I got some papers from...the Israeli. Help me Donald.

DPS: Share?

LK: Share. David Share. And...I'm blocking on the other name...William... You probably all know this one. He's an orthography person. Sheer orthography. Books on the world's writing systems...William. [William Bright?]

DPS: You've got me.

LK: Sorry, I'm forgetting it.

CAF: That's OK.

LK: But he and David Share have been..Well they've published a paper recently which looked at several dimensions of differences between writing systems.

CAF: So the idea is that...there are a lot of reasons why the mapping from orthography to phonology can be complex, so you, instead of laying them out on one dimension of so-called depth, you just figure out what the different...

LK: Yeah

CAF: So, like for example, for English, there's mapping inconsistency, but with Hebrew, there's lack of vowels, so it's like two different reasons why...

LK: Yeah, I mean in English there are morphological reasons

DPS: Morphological penetration of the orthography is key...is a big aspect of it.

LK: Is a big aspect of it. Sure. So sometimes in papers people publish, I'm taken to task for being too simple minded.

CAF: Well, you know, I think they should be a little historically more sympathetic. That this was the seminal idea, and of course it's going to get worked on if it's a good idea.

LK: Sure, yeah.

CAF: So it shouldn't be a criticism, it should be a development.

20:04

DPS: Well I threw in this question at the end about political aspects of reading, and I noted that recently politicians from both parties have retreated from strong nationwide standards and mandated benchmarks for reading.

LK: Yeah. Yeah.

DPS: And I just wanted to get your views; What are the implications of this pullback for reading research.

LK: Yeah. I mean...

DPS: How should we respond to these developments?

LK: I think you're really asking a political question and that...I have opinions, but I really don't have very informed opinions. I mean like any other academic, I would prefer that the ideas promulgated by the federal government are the good practices to instruct children, should be carried out to the letter by everyone. But you know people have [their own?]...and there are other reasons a lot of these...a lot of the results, a lot of the effects of the federal regulations had unpleasant consequences. For example, school systems had to spend...states and school systems had to spend more money on testing and special preparation for the tests. I think the real thing that hurt people was the evaluation part of it. Teachers would be evaluated by these tests; their careers could depend on it. Principals' careers could depend on it. People just naturally enough don't like being evaluated, particularly under those kinds of circumstances.

DPS: True. So all the objections to testing have been placed in one bucket as it were, but there really are very different considerations.

LK: Yeah.

DPS: One consideration would be that assessment, or uniform standards of assessment, are essential to achieve access to quality education for all. So that's a...one reason for testing. But bad uses of testing were incorporated into the original law, as you said, when tests were used as a hammer to beat teachers,...

LK: Right.

DPS: underperforming teachers in schools into submission. And that was probably a bad thing, because it, for one thing, it completely ignores some of the most important sources of individual differences, genetic sources and those based on economic factors.

LK: Yeah. Economic factors are extremely important. And the whole country is at a loss as to how to deal with the effects of social class, poverty...

DPS: So to try to say by mandate that these differences will be obliterated by the year X was extremely unrealistic.

CAF: Right.

LK: Yeah. Well people knew they wouldn't be obliterated; instead they would just show up, and Mississippi couldn't hide behind its own lenient testing to say that they're doing OK. It would be obvious that Mississippi is down at the bottom of the heap, and..Yeah. But..So it's really a political issue. And I've come to believe..You know, I've seen a lot of...I've taken part in a lot of studies that Haskins has run, and I've read a lot of research, and you know we have a lot of excellent colleagues in Education at UConn and I've talked to them. It's pretty obvious that a large part of the variance in school performance has its origin in social class differences, and...

DPS: That's becoming clearer and clearer.

LK: And we're not ...you know, we're not equipped to...we're not even equipped to study that...I mean *us*.. we're not equipped to. Other people are equipped to study it; we're not. And no one knows quite what to do about that. I mean there are efforts. I think the early reading efforts, these programs, typically nongovernmental programs, to get books into the homes of people with infant , and to have, you know, mommy and daddy read to the kid at one year old. If the parent says; But he can't understand a thing we say. Well, so what! You know, you're cuddling; he's got a book in front of him. All of that stuff. So it's...

CAF: There's a very nice book by Tracy Kidder called *Among Schoolchildren*. He kind of sat in the back of a fifth grade classroom in Holyoak, Mass for one year. And you just see the challenges that this absolutely wonderful teacher had. You know, one kid's parents let him stay up til 2 in the morning and he spent the day sleeping and one kid didn't know English very well, and one kid was a little juvenile delinquent in 5<sup>th</sup> grade, and she really had a hard time controlling him. And kids of very different abilities: So one group is doing reading at this level, while another group of fifth grader is down at this level. So she's got to give them something to do while the smarter kids or the better kids are being taught. So it's just a huge challenge to be a teacher. Just exhausting and challenging all the time. To me it was very eyeopening just to see. It's not just, you know, teaching phonological awareness. You've got to get the kids to pay attention, they've gotta get the right food, they've gotta not be asleep. They've got to speak English. It's hard.

LK: Right.

26:30

DPS: How do you see your research situated within psychology and the related sciences? And has this changed since you began your research career?

LK: Yeah. That's a hard question. I guess I don't know...I don't have the context to situate it in what. There 's been a lot of interest in reading... there are lots of researchers in reading. I think I pointed out in my typed document that the main reason for me getting a lot of citations in certain papers is just that there are a lot of researchers in the area. Whereas when I started out there really were literally just a handful, maybe four or five. Now there are hundreds and hundreds. So there is a lot of reading research, and, within that, I don't know, I hope I've had some effect in shaping the way things are done in the field. I would like to believe that I have. I don't know if that's true or not.

DPS: Well, one reason that, I think, that there is so much more research on reading is that psychology itself has been restructured along the lines of cognitive psychology and away from kind of rigid behaviorism that made it difficult to study certain things. I mean reading was not something that could be easily studied by the paradigms that I grew up and that maybe to some extent that you grew up on.

LK: Oh to a full extent, me, yeah.

DPS: But with the increase in numbers has not always come the ....

LK: enlightenment

DPS: enlightenment or the right ideas. Because we've had to fight battles with other psychologists and students of reading who took approaches that we felt were not the most helpful ones.

LK: But certainly now reading researchers think more about the cognitive aspects of describing the...The processes that we are talking about are cognitive now. And that's a change. Certainly over the past 40 years.

DPS: Because it's become OK to study...to be interested in those processes.

LK: It's become,,,Yeah. When I was a graduate student, the word "cognitive" was a dirty word.

DPS: That's right. Certainly was at Iowa.

LK: A professor I had would dismiss an answer by saying: "That's too cognitive"

CAF: That's one thing Noam Chomsky helped to do for us.

LK: Noam Chomsky definitely helped. Changed that.

DPS: We're running out of time.

CAF: Yeah, we are.

DPS: But we should at least get to the next one though. What are the most significant changes at Haskins Laboratories, and the way that it is situated in the scientific landscape over the long period of your association there. And what hopes do you have, fears about the laboratories.

LK: Yeah. So I'd love to give a brilliant answer to that, but I can't. I don't know. I really don't know. Do you have some ideas? I think it's fair for me to...

DPS: Turn it around.

LK: Turn it around. I mean the Lab has...We have widened the kinds of topics that are acceptable research at the Lab. I mean over the years since we started there, certainly the reading research has become more important, a bigger part of the budget. And now it looks like it's not going to be so much reading as childhood factors more generally, speech development, autism perhaps. Is that your sense that things are going more at early childhood?

DPS: Yeah, it has. I think that the scope of research there has broadened out at the same time that the focus has become diluted. That's another way of saying it.

LK: Of saying the same thing, yeah. It's true. Carol, I'd would really be interested to know your..

CAF: I have no feel for what is going on right now. So one of the things that jumped out at me is that when Haskins Laboratories was founded in 1935, they just absolutely never anticipated Al Liberman and the shift over to speech and language. Then what I saw after that was this just beautiful evolutionary process where we started with speech perception, thanks to Kathy Harris and others, we moved into production, and then, thanks to the Libermans, perhaps we began to move into reading. It just blossomed out into all the right directions. Because I couldn't care too much about the brain, that it's moved into the brain you know it appeals to Donald more than it does to me. And, if it's moving into directions of child development and autism and that kind of thing, I mean, there's probably good reasons for that in terms of funding, but it makes me wonder if the sort of theoretical drive that a person such as Al—not that there were any other people such as Al—but that, for him, it was always theoretically driven. And I think it might be sort of more funding driven if we're moving more into childhood problems.

LK: I think that's true.

CAF: And I think that's probably...you know, one thing I've thought about Ken as the president is that it almost had to be Ken to keep the Labs afloat. If I had stayed as president, there might be no Haskins Laboratories right now.

LK: But it might be more pure.

CAF: But out of money. Absolutely out of money. Because I could not do what he has done in terms of going after sources of funding.

LK; Something we haven't talked about is the functional MRI and the effect that that's had both on the field and on Haskins itself. So Haskins ever since the mid 90s has been doing avant garde work on the functional MRI and reading.

DPS: And that was a direction that Al Liberman wanted us to pursue.

CAF: Yeah, I suspect that it was. Yeah. I guess that thing just wasn't available to him back when he...

DPS: It wasn't available to me. I mean I was trained in neuropsychology and I embraced it because it seemed like a wonderful opportunity to study kind of the physiology of behavior, not just the pathology, or the neuropathology.

LK: Yeah.

CAF: And so you didn't know Caryl Haskins very well. We're kind of desperate. We're trying to find people who knew him, because...

DPS: We're trying to find more and more about hm.

CAF: Dear Alice [Dadourian] was in charge of breaking up his house when he died, and she told us---we saw here a year ago last November, just before she died—that she filled 17 dumpsters with his stuff from his house, and, of course, it included his papers, and also papers unfortunately from Frank Cooper.

DPS: Frank Cooper's papers that had been sent there by his son.

CAF: Yeah. So we're just trying to...It's kind of too late, I think, for us to get the information that we would like to have, but we're trying. So we wish you had gotten to know those guys better.

LK: Yeah

CAF: So our last question, as always, "What should we have asked you that we didn't?

What do you wish to have in your oral history that's not there?

LK: I don't know. I gave you, what: a 10 page document or so.

CAF: That's true.

LK: I think I've said everything I've got to say....

CAF: Alright. We appreciate your coming by and actually speaking on tape.

DPS: We do appreciate it and, we didn't really mean for you to write it all down.