

ORAL HISTORY INTERVIEW
DANIEL LASKIN,
February 16, 1999
Interviewer: Marcia Meldrum

MM: OK. Hello Good morning Dr. Laskin.

DL: Good morning, Marcia.

MM: Let's see. It's the sixteenth of February. We're here in Dr. Laskin's office in the MCV [Medical College of Virginia] Dental School in beautiful Richmond, and we're starting the first tape of the oral history interview with him. Dr. Laskin, how are you today?

DL: I'm just fine, thank you.

MM: I'd like to begin at the beginning. I understand you were born in New York, and I'd like you to tell me a little bit about your growing up and how you decided, made the decisions that led you into a career in oral surgery.

DL: Well, that's a long story.

MM: Well, that's what we want to hear – the long story!

DL: But it's kind of an interesting one, I guess. Well, I grew up in a little town called Ellenville, New York. Ellenville is in the area that people refer to sometimes as the Catskills.

MM: Right, I know that.

DL: Sometimes you hear it referred to as the Borscht Belt. This is an area that had many, many hotels, that had what they called bungalow colonies, and in those days when I was a child, all the good husbands from families that lived in New York City would always send their families up to what they called the country. So they would go up to Ellenville for the summertime. And so it was kind of an interesting place to grow up. It was a small town, had a population of about three thousand in the wintertime, and then in the summertime I guess it expanded to about two or three times that with all the tourists that came there. So that's essentially where I grew up, in this little town. I went to high school there. While I was in high school, I guess I was more interested in athletics than I was in studying. By the time I got to the end of my junior year, I realized I'd better settle down. So I worked a little harder, and I was accepted to New York University, the downtown campus, in New York [City]. So I went down there, and at that time what I really wanted to be was a coach or a phys-ed teacher.

MM: You were pretty active in sports.

DL: Yeah, I was active in sports. Actually, believe it or not, I played basketball; I was on the basketball team and baseball and soccer. And so when I said to my mother I wanted to be a phys-ed teacher or a coach, she didn't like the idea. So I said, "Well, all right, Mom, I'll compromise. I'll major in phys-ed and I'll minor in business administration." So that sounded like a reasonable compromise.

MM: For her.

DL: Anyway, when I graduated high school, I was only sixteen years old. And so I went down with my mother to New York City to register in college. After we filled out all the papers, my mother said to the woman, "What can he register for?" And she said, "He can register for whatever he wants." And so my mother said, "Make him a premed student." So there went my career in athletics! And so I became a premed student. This was actually in 1943.

MM: Ah. So the war was already started.

DL: That year, the war started. So I finished my year at NYU, and during that time actually I lived in New York City with an aunt of mine who lived close to the university. I enjoyed my time there, but it was an urban campus, and I didn't know a lot of people. So you'd see your friends in the daytime, but at night they were all scattered around the city. So I decided I wanted to go someplace else, and so I applied around to a number of different schools.

One of the places I was accepted to was Indiana University. And I had a classmate who graduated with me from high school who was already there, so I thought that would be convenient; I knew someone there. So I transferred to Indiana University. I can still remember going on the bus from Indianapolis down to Bloomington, and my first view of the campus – I don't know if you've ever seen Indiana's campus –

MM: I grew up in Indiana.

DL: Oh. But that is probably the nicest campus of all the Big Ten schools. The only one that comes close, in my opinion, is Michigan State, which also is a nice campus. And it was like a Bing Crosby movie; the halls of ivy were there, you know? And it was nice.

MM: Very different from NYU.

DL: It really was, and at that time it was probably the smallest school in the Big Ten, you know, maybe around ten thousand students. So it was really nice. Anyway, the war being on, I got involved in what was called the Enlisted Reserves, where you signed up to go into the service, but they allowed you to continue in school as long as your grades were good. So I finished a year and a half down at Indiana, and so that gave me two and a half years now of college, and at the end of three you could apply for medical school. So I began to make applications for medical school. And my grades were not bad; I was probably a little better than a B average.

MM: You'd been taking mostly science courses, or some science courses?

DL: Yeah, mostly science.

MM: And you liked that?

DL: Yeah, I did.

MM: You weren't regretting not going into business administration?

DL: No. I still tried to be involved in intramural athletics, and actually, it was kind of interesting, as an aside, I remember one summer, I was down there, and most of the athletic people were in the service. I was coming back from going to the movies and walking back with my roommate, and a car stopped, and it was one of the assistant football coaches. And he said, "Can I give you a ride back to the campus?" And we said, "Sure." And he said, "Did you ever think about playing football?" I said, "No, I really haven't. I'm a premed student; I have to be concerned about making good grades." And I remember he said, "Of course," he said, "it's the objective of everybody on the football team not only to play football but also to make at least a C average." I said, "Yeah, but a C average will not really work." But anyway, we went out for the football team, and they kind of used us for tackling dummies, you know.

But anyway, I was in the Enlisted Reserve, and I applied for medical school, and I was not accepted. So that was the end, you know, not only of my academic career but of my football career, which was more important. I didn't know quite what to do, and I had a friend whose father was on the faculty of the medical school. And he said to me, "Have you ever thought about dentistry?" I said, "No, I really haven't," but I thought, "Well, I'd rather go to dental school than go into the army." So I remember I filled out an application; I mailed it off from the railroad station on the way back to New York to be inducted into the army.

MM: Oh, my.

DL: I was inducted into the army, and it was kind of interesting because they sent us to camp to be indoctrinated into the service. And at that time the army had a program called the Army Specialized Training Program, where they were training people in engineering and medicine and dentistry in order to maintain the number of people they needed. In order to be eligible for that program, you really had to finish basic training in the army. And somehow they made a mistake with, I think, thirteen of us, and instead of sending us off for basic training, they sent us to Columbia University to go through testing for the Army Specialized Training Program. So we went through the testing, and then they realized they'd made a mistake, and they said, "What branch of the service would you like to go into?" So twelve of us said we'd like to go into the medical corps. And my roommate, he wanted to go into the air corps. And it was interesting because his brother was a dentist, and he wanted to be a dentist, and he ended up going into the air corps. Eventually I ended up in dentistry, and he ended up as a food grower. And so that's how life works.

Anyway, when they realized that was a mistake, I got shipped out to Camp Grant, which was a medical corps training camp in Rockford, Illinois. I'd been in basic training about three months, and all of a sudden I get a letter. And I open up the letter, and I'm accepted to dental school! And if you had an acceptance to dental school, you could turn that in to the Army, and they would automatically put you into the Army Specialized Training Program. So I finished basic training, and for a while I was up there helping them train other corpsmen. Then they sent me to Fort Benjamin Harrison, outside of Indianapolis, to wait for my class to begin. So I worked as a corpsman down there, and then eventually when my class started, I went down to Bloomington, and that's how I got into dentistry!

MM: Sort of a roundabout way!

DL: A long way from being a coach to becoming a dentist. In those days, you went to dental school around the

clock. There were no summer vacations or anything. At the end of my junior year, they closed down the Army Specialized Training Program, and they gave us a choice to stay in the army at our current rank, and I was a private first class, or to become a civilian. And that was a difficult choice! And so I became a civilian, but because I had basic training and actually some service time, I was eligible for the GI bill.

MM: Oh! Good deal.

DL: So the government paid for the rest of my education, which was very fortunate because actually my father was a totally disabled veteran from World War I, and the family always lived on a government pension; he never worked. So it really was sort of a blessing that I would be able to get my education without them having to pay for it. And so that's how I ended up finishing dentistry, and since I graduated very young and I kind of went through dentistry very rapidly, I was, I think, twenty-three years old when I finished dentistry.

MM: Sort of an accelerated training there.

DL: While I was in dental school, I guess because I was interested in dental things and so on, oral surgery seemed like this was the area I wanted to go into. In those days there weren't a lot of places where you could go to train, and I eventually ended up going to Jersey City Medical Center, where I had an internship for a year. Then I was looking around for a place to go, and it was interesting there because one of the things that happened was that I looked in the *American Dental Association Journal*, and I saw an advertisement. They were looking for somebody actually here, at the Medical College of Virginia, to teach oral surgery! Well, I'd had one year of experience; I figured I was an oral surgeon!

So I wrote to them, and they said, "You can come down and interview." So I came down here, actually, and that was, I guess, in about 1948, when I came down to interview. And they said, "Well, you're really not adequately trained," and they offered me some other job, which I didn't want. And it was interesting because eventually in 1984, when I came back down here, I told them all the story, that I'd been here before, and I said to them, "If you ever think I'm well enough trained and good enough, you might make me another offer," and I said, "It took you forty years to do it!"

But anyway, it actually started here, way back then, and ended up here. No one would ever believe it. So then I looked around; I had an opportunity to go back to Indiana to practice. I almost bought an office in New York City, but finally an opening developed at the University of Illinois, where they had just started a two-year master's program in oral surgery. And I was accepted into that. So that's how I ended up in Chicago. Then I finished that program, and from there, I went to Cook County Hospital, where I finished the rest of my clinical training. And at that time the Korean War was on, and although I'd been in the service before, I'd never been in the service as an officer, as a dental officer. So I was eligible to be drafted again. So here I finished my training, and I didn't quite know what to do, and I didn't want to open a practice; so they offered me a job teaching at the University of Illinois, which I think then was about three thousand dollars a year, in those days.

MM: Yes. Not very much.

DL: I was already married and had a child. So I took the teaching job. And it was interesting because I never realized I would end up in an academic career, but that was the start of it. And I ended up spending thirty-

five years at the University of Illinois.

MM: Well, let's go back just a little, though. It sounds like you almost sort of fell into dentistry.

DL: Yes.

MM: Did you enjoy it? I mean, what appealed to you about it? I presume you wouldn't have stuck with it if you hadn't enjoyed some parts of it.

DL: Well, when I first started dentistry, actually, when I applied to dental school, I really had very little idea what dentistry was all about. I mean, you know, I had gone to a dentist, and to this day, you know, I say I hate dentists.

So I didn't know quite what it was about, but I guess I had good technical skills. It was interesting because, as I told you, I got my letter of acceptance when I was at Camp Grant, and at the same time when I was running around through the barracks showing all my friends my letter, there was another person that also had a letter from Indiana University, a fellow named Leonard Robinson. And so we became very close friends. It's very interesting because we went off to dental school, and we roomed together. He was really a brilliant guy. He was Phi Beta Kappa, from NYU actually, and his father was a physician. And it's interesting, with that academic background and all that, he couldn't get into medical school.

MM: Really? I would have thought it would be much less competitive at that point.

DL: Apparently it was more competitive.

MM: Not as many schools, perhaps.

DL: Yeah. So it was interesting, he then ended up in dentistry; so we were together, and what I learned from him was how to study. People would tell you, "Well, you should study in advance; don't cram the night before," but, you know, who does that? But he did that. And he kind of taught me how to outline, take notes –

MM: Oh, my gosh. All those critical things.

DL: All those good things, you know; it was very interesting. So we'd prepare in advance, and the night before an exam we'd kind of quiz each other quickly, and then we'd go visit all our buddies who were cramming and they used to hate us because we'd come around, and they wanted to study. But he didn't have any technical ability, so I used to do all of his carvings and things for him.

MM: I see! So it was a tradeoff.

DL: Then, as I told you, at the end of the program when they closed the program down, he was able to get into North Dakota Medical School, but he dropped out of dentistry. That was a two-year medical school. In those days they had two-year medical schools, and you'd go someplace else for your clinical training. He ended up at Harvard, where he belonged in the first place, and became a psychiatrist. So I guess we both found our right niches.

But I enjoyed dentistry once, with his sort of tutoring, I became a good student and I was technically good, and so it fit. It's interesting because I have a son who is also an oral-maxillofacial surgeon¹ who now does art, and I have another son who's an artist; and they both do sculpture. So I guess somehow, although I don't think they got their talent from me; I think it came from my wife. But they also have the technical skills, and they have the artist's perspective, too.

MM: That's interesting. Well, let's comment on that a little bit. Your wife, you married –

DL: I got married in 1945 at the end of my second year in dental school, which was, again, kind of unusual. Nowadays it's not unusual to see people who are married in dental school, but in those days I don't know if there were any other people in my class who were married at that stage.

MM: They kind of discouraged it, didn't they?

DL: I guess they did. But we got married then.

MM: Was she someone you met in Indiana?

DL: No; actually we were high school sweethearts.

MM: Oh, that's sweet! That's great.

DL: We met in high school, and we were in the same homeroom. And if you heard her tell it, she had a job where she used to sell things in the cafeteria at lunchtime; she had to be there at twelve noon. She said I always came late to homeroom for them to take attendance, so she was always late for her job. She said she hated me. But somewhere along the line the hate, I guess, turned to love. So we met in high school, and we've been married a long time – actually, we've been married now fifty-three years.

MM: Wow! That's very impressive. And you have two sons?

DL: I have two sons and a daughter.

MM: That's great. OK. So during your dental training and your internship and residency, was there anybody who sort of influenced you, besides your roommate who taught you how to study – any of your professors you can remember who had a particular influence on you?

DL: Well, yes. I was very much influenced – one of the people, actually, was my dean. And that also kind of goes back to kind of an interesting story. His name was Maynard Hine,² and he died, I believe, about a year ago. And he was really a great contributor in dentistry and a great educator. He became dean, I believe, it was the end of my first or second year. And he had come from the University of Illinois, interestingly enough, where I eventually ended up.

I remember one time – he was a periodontist, and he was giving an examination, and there was one black student in our class, John Simmons. And we were taking an examination; as they usually would do it, we'd have a seat between each one of us so you couldn't copy anyone's work. John asked me for an answer to a

question. So I took the examination sheet and I wrote the answer on it, and I put it on the seat between us so he could see it. I didn't notice, but Dr. Hine was – at that time he was not only dean, but he was teaching – he noticed what I had done. And a lot of things he could have done; what he did was he came up, picked up that sheet, put down a clean question sheet, and that was the end of it. Never did another thing. And I mean I was really impressed with that because I got the message. He was telling me, "Well, look, you know, you're a good student, but this is not the thing to do." He didn't make an issue out of it, and I learned my lesson. I never did anything like that again. But I thought it was a very gentlemanly way to handle something like that.

MM: Yeah. Very sensitive.

DL: He was, I believe, one of my role models at that time. Of course, I guess the people in oral surgery were my role models, because that's what I wanted to be. There was also an orthodontist by the name of Adams; but I think why he impressed me was the fact that he was a real academician, not just a clinician, but he always related the basic science to the things that you're doing clinically and so on. And that was impressive.

MM: Did you have a lot of exposure to patients in your training?

DL: Yeah, you began to see patients in your third and fourth year. And so we had a lot of exposure to them.

MM: And did you like working with patients?

DL: Oh, yeah. You think back – you know, it's interesting, the things that you remember, that you learn in life; I remember one time I had a patient, and the patients you get in dental school obviously are not wealthy patients; the patient gave, I think it was like fifty cents or something like that; he wanted to give me some money, sort of like a gift. I didn't want to take it, you know. And I was telling this story to one of my friends, and he said, "You know, you really should take it." And I said, "Why?" And he said, "Well, because it means something to that person. When you – I mean, if you accept it – they want to do this for you; you should allow them to do it and not embarrass them by not doing it." There was a point to that, you know, that you have to be a taker sometimes as well as a giver in the right circumstances, and I thought that was a good lesson in life.

MM: That's really interesting. So now you're in Chicago. Tell me a little bit about Chicago at that time.

DL: Well, Chicago at that time, I remember I had a cousin who had worked in Chicago and I asked about Chicago before I went there, and he said, "It's a city of contrasts." I don't know if you've ever been to Chicago or know Chicago very well – to a certain extent it still is, but it really was in those days; he said, "You have the city itself and Michigan Boulevard and the Outer Drive and the lake [Lake Michigan], and then you go about ten blocks in, and you have some of the worst ghettos in the world." So it *was* a city of contrasts at that time.

MM: Yes, that's right.

DL: When I went there, I eventually got a place to stay, and it was actually right across from the Midway,³ where the University of Chicago was. This was directly across from that. Housing was very difficult; this was the sort of postwar years, you know; rents were very high. I mean, here I was, I was really a student; I

wasn't earning very much. We finally found this place. It was not a very pleasant place to live, but I remember we were looking for a place to stay, and all I knew was the Outer Drive, which, you know, goes north and south in Chicago. So anyplace I would go I would head for the Outer Drive and either go north or south, and then start going west to find where I had to go.

So that's why I lived – It was difficult to manage because I wasn't being paid very much, although eventually they gave me a small teaching fellowship. So I used to work for a dentist on Saturdays to try and earn some money. I remember [over the] Christmas holidays, I'd work in the post office to earn money, because Mary and I had a child.

MM: Right! And you needed to make an income.

DL: That was the other thing, because nobody knew I was a doctor working in the post office. But I had to make money, you know. So I did that.

MM: So not necessarily a lucrative career at that point.

DL: No, it wasn't lucrative. It was interesting; when I finished my training, at that time I thought I wanted to go to medical school; I guess I still wished [or] decided that that was one of the possibilities. In those days, to go to medical school it wasn't like today; in my program, for example, here, when they finish the training program, if they want to go for two more years, they get a medical degree. In those days you had to go for four full years. Then I decided, well, if I really had a medical degree, I probably would want to go into plastic surgery or otorhinolaryngology. And when you figured up all the additional training, it was like another ten years.

MM: Yeah, a long time.

DL: I figured, as an oral-maxillofacial surgeon, in those days all you needed was two years of training; I had had four. So I figured, well, I'm well trained. I've got a master's degree, and if I went to medical school, I'd come out at the bottom of the pile. And I figured, well, I was married; I figured it was too late for me to do something like that.

So I eventually gave up on that. But Chicago is a great city to live in, and we enjoyed it. And we gradually – as I prospered, we'd move further north, you know, and eventually we were able to buy a house. It was a good city.

MM: Yeah, my parents actually grew up in Chicago, and they lived in Evanston for a long time.

DL: Yeah, I lived in Skokie, which was just parallel with that.⁴ In fact, my kids went to the Evanston school system, which was a pretty good school system.

MM: Yeah, they liked it. OK, so you're working now – you started out as an instructor, I guess.

DL: Yeah. When I finished my training, I took a job as an instructor in oral surgery.

MM: So you're sort of dividing your time here between clinical and teaching, and when did you get into research?

DL: Actually, I got into research in earning my master's degree while I was in part of my training. And it was very exciting. I remember when I went out to interview. My mentor, who, I mean, was really my mentor and was one of my role models, was Dr. Bernard Sarnat,⁵ who was actually a plastic surgeon, but he was head of the oral surgery department at the University of Illinois. And it was interesting because in those days our specialty was called oral surgery. Now it has a tongue twister: oral-maxillofacial surgery. But another thing is, in those days, because he was a plastic surgeon and had a medical degree, he called the department the Department of Oral and Maxillofacial Surgery. So it was an oral-maxillofacial surgery department many years ago. So he was a real role model. But I remember he asked me in the interview, "Are you interested in research?" And I said, "Well, I've never done any research, but I'd like to try." So when I came there, I was assigned a project to work on, which I did as part of my master's degree, and that I guess sort of interested me in research.

MM: And what was the project?

DL: Well, it was interesting because he, being a plastic surgeon, was interested in some things a little different than I would be as an oral surgeon. One of the tissues that they were using and they still use today as a graft material is cartilage from the rib. And the reason they were using cartilage is because it's a tissue which does not have a direct blood supply. Because it doesn't have a direct blood supply, it's less immunoreactive. So people can tolerate cartilage whereas they can't tolerate other tissues as well. He was interested in studying the metabolism of cartilage, and so actually what I studied for my master's degree, which is a kind of unusual topic, was the metabolism of cartilage, both fresh cartilage and stored cartilage. So that was my master's degree. And, actually, I worked with a person who was a pharmacologist who was sort of my second mentor, because we used a technique that he knew, and he taught me how to use this technique. So that's how I got interested in research. Then Sarnat was interested in craniofacial growth, and so in addition to working on my master's, ultimately, I became interested in craniofacial growth and started doing research in that area.

MM: I'm sorry; is that like development?

DL: Yeah, growth of the face. One of the important growth areas in the face is the lower jaw, the condyle⁶ of the lower jaw. And so that got me interested in the temporomandibular joint [TMJ],⁷ and I guess somewhere in our conversation, you want to know how did I get into pain and all that?

MM: Right. Pain, that's what I want to know about, yes.

DL: That's what we're coming to. So, I became interested in the temporomandibular joint because it was a growth area. I was doing some research on growth involving this area, what effects it had and how disease would alter it and so on. Really, at that point, pain was not my main area.

MM: Yeah. I understand that.

DL: As an oral surgeon, you're very much involved in pain – not only in relieving it, but I guess people think you're producing it.

MM: So there are kind of two questions here. One is that, you know, tell me a little bit about your research setup.

I mean, were you able to get assistants to work with you? Did you have laboratory space that was adequate? Tell me how that worked.

DL: Well, my research career was kind of interesting also because, you see, I started out on a very basic sort of research project which involved, in a sense, a biochemical approach. Although I didn't really have a background in that, I kind of learned.

MM: Learned on the job.

DL: Yeah, on-the-job training. There was a doctor by the name of Milton Engel⁸ who was an orthodontist at the school, and he was also very much involved in research. And he and Sarnat had done some collaborative things and so on, and I got to know him, because not only was I interested in part of growth in the jaw joint, but I was interested in connective tissue growth because that was part of it. And Dr. Engel was doing research on connective tissue, and he had a team. There were actually he, a fellow named Hubert Catchpole,⁹ who was a pathologist, and a fellow named Norman Joseph, who was, I guess, a physical chemist. I started working in their lab, and really, since I had two research tracks, I was doing some clinically oriented things since I was a clinician, and I was doing this basic type of research with them, and in that laboratory we were studying bone resorption--bone formation and bone resorption. And it was interesting because we were working with pigeons. Now, you might ask, "Now, why are they working with pigeons?"

MM: Yes, why were they? They don't have teeth.

DL: I don't know if they have teeth or not! But the reason we worked with pigeons is that they have an egg-laying cycle, and the egg has a calcified shell. And the question was, Where does that calcium come from? It comes from the bone. So what the pigeon does is it lays down a lot of bone – in its bones they become very filled with bone marrow, and the space becomes very limited, and then during the calcification of the egg they reabsorb all that bone, and that calcium now becomes the shell of the egg. So it's an ideal model to study bone resorption. And people didn't know what caused bone resorption. So we began to do a bunch of studies on what causes bone resorption. Then we got into the connective tissue types of things, and so I was working in that laboratory and in the other. Well, somewhere along the line, there was a man by the name of Seymour Yale¹⁰ who had been at the school, gone in the service, and come back, and they made him the head of dental radiology. He was a dental radiologist. In order to develop his department, he wanted to get a lot of new equipment and so on, and somehow he came up with the idea of getting a government grant. And it was going to be in the area of temporomandibular joint problems. What he did was he looked around the school, and he picked out – I think it was five or six people – but he invited this group of people to get involved in this grant, which was called a program project grant. So it had not just one – It was an umbrella [grant] with a bunch of different studies. So he invited me, he invited Milt Engel, who was the orthodontist whose lab I was working with, who was interested in connective tissue, so that fit with TMJ. I fit with TMJ in terms of growth. He invited a fellow named Allan Brodie,¹¹ who was a very famous orthodontist who was also interested in facial growth and TMJ. He invited a fellow named Lloyd Du Brul,¹² who was an anatomist who had written some well-known textbooks and so on; he's dead now. And there was Dr. Yale. So I guess there were five of us. So we developed this program project grant. And the interesting thing was if you looked at the people who were involved, Yale and I were sort of more clinically oriented, Engel was sort of in between, and we had Brodie and the [basic science] people.

The more basic science oriented people were concerned that Yale, being a clinician, and he was the principal investigator, if he got the money, they may not get their fair share. So they said to me, why don't I become the co-principal investigator, because I sort of fit between the two; I was working both clinically and I was also working in the basic science area. So I said, "Well, what's involved in this?" And he said, "Well, nothing. You just put your name on there, and you become co-principal investigator." And I thought, well, you know, nothing wrong with that! And so I became co-principal investigator of the group. And we were fortunate; we got the grant.

MM: And this was from NIDR at that time?

DL: This was from NIDR.

MM: And this was about, what, 1960?

DL: No, this was '63, I think. Sixty-three.

MM: Because I have you already working at the TMJ Research Center about 1963?

DL: Well, the grant must have been '61 or '62. And I'm getting to how I got to the TMJ Research Center, because, as I say, we were fortunate to get this grant. At that time, it was the largest grant that the University had ever gotten. We got a five-year grant, \$872,000 a year.

MM: Wow! You mean the whole university?

DL: That's what they told us. In the *Chicago Sun Times* there was *Kup's Column*¹³ – I don't know if you remember that.

MM: I know *Kup's Column*.

DL: We ended up in *Kup's Column* for getting this huge grant. So here, now we've got all the money, and we've got, you know, everything is wonderful. And about six months or so later, Seymour Yale becomes the dean. And so he says, "Here you are! Here's the grant!" So now I'm no longer [just a co-principal investigator]; I'm *the* principal investigator!

MM: Oh, my!

DL: So I've got all this responsibility, and so I figure, well, if I've got the responsibility, I've got to do something. I've got to make sure that we really do the appropriate thing. So, you know, I sort of became an idea man. I had to generate all these ideas, and at that time one of the things I developed was a TMJ and Facial Pain Research Center. So we started a Research Center which would enable us to have a clinical source of patients, because there were a lot of clinical things in this grant as well as basic science things. And so, although I continued to do some basic research, eventually I had to make a decision. Because it was very difficult to keep up in the basic science area; I mean, they were in areas like physical chemistry and I was not a physical chemist. So I decided, well, I'm really a clinician; I ought to stick in the field where I'm more comfortable. So I switched over more toward the clinically oriented type of thing at that point, and I started this Center. And that involved recruiting people to work in the center. One of the people who I was able to

recruit at that time or shortly thereafter was a fellow named Charles Greene – Chuck Greene.¹⁴ And that was the beginning of a very fruitful and very delightful sort of coordination between the two of us. Chuck was like me; I mean, when he started, he really had had no research experience, but he was a very bright man. And was good at analyzing material and was also good at treating patients. He was a clinician. So he became the director, in a sense; he ran the clinical part of the Center, and I was the overall director of the Center. And we recruited some other people to work in the center. I was also, by that time I was head of the Department – I think I was head at that time, or at least shortly thereafter; if I wasn't, I was running the residency training program. And so I had twelve residents.

What I had established, and this was also a way in which I was able to be productive, was when I started my training program, I wanted to be different from other training programs that were just training clinicians. I thought, why can't I try and train people who will also be academicians? And do research and become teachers. So I built a master's program into it so that every one of my residents would get a master's degree. And so that gave me a lot of people to do a lot of research; and all I had to do was dream up the ideas.

And so we continued, actually, that Center – we were funded for twenty-three consecutive years. And I was the principal investigator for all that period of time. And it was very interesting; I don't know how it worked out that way, but the way we would submit the program project grant, when we would renew it, was we would divide our report into three areas. One was work that we had completed; then the other one was work that was underway, and then new things that we wanted to do. We were able to sort of get ahead of the game so that very often those things that we were reporting as being work in progress was stuff that was almost finished, and we had the money to use for our new projects. And that always kept us very current. So we were doing a lot of research in a lot of different areas. And obviously that's what got us into this whole thing with pain, because obviously TMJ is a painful condition.

MM: Yes. Very. I wonder if we're just – not quite. It often happens that the tape runs out in the middle of a sentence, and I try to avoid that. But, OK, so tell me a little bit about pain and how you proceed as a clinician.

DL: Well, let me tell you what happened in our center. At that time, the TMJ field was sort of in disarray, I guess is a good way to put it. It was very technically oriented; the predominant theory was that all these problems were coming from the fact that people's bites were wrong. But, you know, if you looked around at the population of patients that you saw, I mean, there were a lot of people with bad bites, and they didn't have TMJ; it didn't seem to make sense. There was a group at Columbia at that time that had begun to do some very interesting research. That was under the direction of a man named Lazlo Schwartz.¹⁵ His idea was that muscles were involved in this. And it was clear to any clinician that the pain was not only in the joint, but many times *not* in the joint, but if you start pushing on jaw muscles, they were sore. So they were doing some work in that area, implying that jaw muscles were important, and also that perhaps they were one of the first groups that started talking about the fact that there may be some psychological component to this disease. Although we really didn't have any preconceived idea, that sounded like it was pretty interesting. So many of the studies that we did were geared toward evaluating the role that muscles might play in this, and even to a greater extent what psychological factors might play in this. And that was built into our grant, and so we always had at least one or two psychologists who were part of the team, and so we did a lot of psychometric testing and tried to tie this in with clinical things. And eventually, actually, I believe it was in 1969 when I wrote what I guess is a classic paper.¹⁶

MM: Yes. I think it was '67. Sixty-nine, no, you're right.

DL: Yeah. We started the TMJ center in '63, and in '69 the ADA [American Dental Association] put together a series of papers in one of their issues of their journal, and I wrote what I guess has become a classic paper because it's really been quoted and quoted and quoted and quoted.

MM: People talked to me about it before I even knew who you were.

DL: And what that paper did was tie up our research that we had done up to that point, and we approached it from many different ways – from a clinical standpoint –

MM: And this paper sort of tied it all together.

DL: Yeah. It explained, you know, all our research and it kind of put it together into a hypothesis that the condition was really a stress-related condition. At that time, although I think in that paper we talked about pain-dysfunction syndrome, ultimately I coined the term MPD, or myofascial pain dysfunction syndrome. The reason I coined that term was that up until that time, everyone talked about TMJ problems. That was really what was causing all the confusion in the field, because no matter what people thought, everything was focused on the joint, and it really was not a joint problem primarily; it may have been secondarily a joint problem in some patients, but it was primarily a muscle problem. So in order to try and get people's focus away from that, we have to have a new name. We can't call it a TMJ problem. And so I came up with the idea of calling it MPD, myofascial [muscular tissue] pain dysfunction syndrome.

People in later years began to say they didn't like the idea that it was a syndrome, although even recently I went back and looked at the definition of syndrome, and it's really an accumulation of signs and symptoms that define a disease, and I still think that's not a bad term. So nowadays I talk about MPD, not MPD Syndrome. But I think that that had a major effect ultimately on the field because prior to that time people were doing a lot of grinding on teeth, and they were crowning on teeth and they were doing all these dental things. What we showed was that this was not the way to approach this, that this was in most people a stress-related disease that had to be taken into consideration. And to prove that, we did some interesting research, so-called placebo studies and response specificity studies, and the placebo studies were very interesting.

MM: I was particularly interested in the one with the mock splints.

DL: Yeah, well, we did several.

MM: Yeah. Tell me about them.

DL: Well, it was interesting because we didn't start out to do a placebo type of study, but as you know, in good research, you have to have a placebo control. So the first study we did actually was a drug study. In those days the popular tranquilizing drug was meprobamate, or Equanil.¹⁷ The idea was, if this is a stress-related disease, then would a tranquilizing or sedative type of drug help patients who have this problem? So that was the basic question that we were asking. So we had two groups of patients: those who received the placebo, and those who received meprobamate. And when we analyzed our data, it was very interesting because we found that the patients on the placebo did almost as well as those who got the meprobamate. I

don't remember the exact figures, but it was interesting because it was at least a thirty percent response. And in the placebo literature, if you go back and look at the placebo literature, what you find is that with most any placebo, particularly if you use a narcotic versus a placebo, you get a thirty percent response. That seems to be almost a universal type of response, at least thirty percent. And here, you know, we had gotten better than a thirty percent response. So that was an interesting finding, and so one of the studies we eventually did, we did a pure placebo study. What we did was we developed a drug which I called myolax.

MM: Myolax? Oh, yes. Yes.

DL: Myolax. What it means, you myo-lax.

MM: Relaxing muscles. Yes.

DL: See, I thought that was a great name. In fact, I tried to copyright the name; I figured I'd sell it to a drug company. And then I found out in order to do this, you have to have sold your drug in two different states or something. But it really wasn't the drug, you see. What we did was we packaged sodium lactate in an orange and blue capsule, which were the colors of the University of Illinois.

MM: Oh, that's great!

DL: What we did was examine our patients, and we told them that we had this new drug that we're working with, and "It's good for patients who have problems such as yours." Now, we never told them what their problem was; you know, "problems such as yours." And we wrote up a prescription for this. It's interesting because nowadays with institutional review boards and so on, when I tell you about the research we did, you couldn't do it.

So in a way we were fortunate because we weren't harming patients and we were getting a lot of useful information. So anyway, patients would get a prescription, and they would go down to the pharmacy, and they would pay two or three dollars, whatever it was, to buy myolax, OK? Now, we knew the patients believed that it was a real drug because it was interesting; some of the patients who would go down to the pharmacy, and at the hospital pharmacy the line could be around the corner, you know, and so they would go to their drugstore, and we'd get a phone call from the pharmacist, "Who manufactures myolax? I can't find it in the PDR, or the *Pharmacopeia*."¹⁸ So we said, "Well, we manufacture it! Send them back." So it was interesting because we got – the response from myolax was just about as good as we'd got with meprobamate.

MM: That's just wonderful.

DL: So we realized that here we have these patients [who] are strong placebo responders, so then we began to do some other studies, but now we were focusing on the placebo aspect. But that was not where we focused originally. So the next study we did had to do with these bite plates or bite appliances. As you know, they're used to this day and they are very effective for people who clench and grind their teeth. But we wanted to know, you know, if they were effective, why were they effective? and so on. So the way we started out was these were plastic things that usually fit in the roof of your mouth, and they had plastic that goes over your teeth. Well, we started every patient out with just a little plastic palette that didn't have anything to do with the teeth. And interesting enough, about forty percent of the patients got better with

this little piece of plastic in their mouth, you see?

MM: Amazing.

DL: So people said, "Well, it's not a placebo because it may change tongue position and break some habits and do some other things." So we said, "Well, it's not a placebo, but it's a non-occluding bite plate because your teeth don't touch it." And, ultimately, for those patients who didn't get better, we added the plastic [that is, an actual bite plate] and so on. But we had this group of patients and, as I recall, forty percent of them got better with a piece of plastic.

MM: That's amazing.

DL: So we thought, "So now they're getting better with a placebo drug, they're getting better with a little piece of plastic in their mouth; let's test grinding on the teeth," because that was the most popular therapy of the time. So we set up a study where we got a group of patients; it was very interesting because among the criteria to be selected, you had not to have had any previous what we call equilibration – grinding on your teeth. Most of the people coming to our center had already had this. So it took us two years to get twenty-five patients; we finally got twenty-five patients. Then we went through what was called occlusal analysis [bite analysis]; the so-called pathologist would do it. We told these patients, we sat down with them, "Now, we found all these abnormalities in your bite, and now we're going to adjust your bite, and it's going to get rid of your problem." So, for two sessions, one of the people who were doing this study would grind on patients' teeth, but they didn't grind on the contacting surface; they ground on the sides of the teeth. So they really weren't altering the contacting surfaces. And here again we found high percentages of patients got better just by faking the grinding on the teeth. So it became very clear that these patients were strong placebo responders. What we actually found was that they differed from so-called normal patients. And how did they differ? In a so-called normal patient, if you give them a placebo, many of them respond to it. But if you give it to them another time, somehow it doesn't work as well. And gradually the effect disappears. These people, you know, they keep on responding; they were very good. So that was an interesting finding.

Then the other interesting study we did was in terms of the doctor-patient relationship. Here what we did was we went back and we analyzed our data from three different studies. There were patients that were either in a drug study, they were in a muscle therapy study, or they were in that bite appliance study. And what we wanted to do was in this study, when the patients came for this type of treatment, they were put into two groups. And for every patient we developed what we called a symptom score. So we sort of tried to quantitate the amount of pain they had, their limitation of opening, things that we could try to quantitate in a crude way. So we developed a symptom score. Then, one group of patients for a half-hour before their appointment, they were seen by the psychologist, and they were told that "stress is causing your problem, and let's talk about how we might identify stress in your life and how you might cope with it," and so on. And then the second group, they were told that "you have a physical problem," and they were told nothing about stress. But they were told that this was a physical problem and it involved the muscles, and we were going to help you take care, et cetera, et cetera. And it was interesting that there was no difference – actually there were three groups; I'm sorry. And the third group didn't get either this counseling program or the instructional program; they just got the other treatment.

So everyone got some sort of physical treatment, but one group got counseling, one group got instruction,

one group got nothing. And in the nothing group, the person who was treating them was told, "Don't get too involved with your patient. Treat them in a very nice manner, but don't spend a lot of time with them; if they ask you questions, give them a brief answer." So we had in a sense two groups that were getting good interaction with their doctor, and one group that was not. What we found was that the patients in the first two groups did much better on the same treatments than the other group. So what we found, you see, was very interesting because although we were doing research in the TMJ area, I think we were defining some very fundamental concepts, which were the placebo effect in pain patients [and] the importance of the doctor-patient relationship. In other words, it's not so important what you do but how you do it. And we definitely showed that, whereas with the same therapy – and to this day I find that in patients that I see, where they come in, "Oh, I've had this before, but you presented it in a different way," and it works because you show interest in the patient, you spend time with them, and that holds true for all these patients. That was a fundamental thing.

MM: Really makes a difference.

DL: I think the third concept, and it's interesting when I hear people now, they say it so glibly, you know, like they know where it came from, is the concept of escalation of therapy. Start out with the simplest thing first, and not to use irreversible therapy for a reversible condition. And MPD is a reversible condition. You know, we're always saying, "*Don't* use irreversible therapy. *Don't* use surgery. *Don't* grind away people's teeth," because these are irreversible therapies, and they're probably not even necessary, but at least don't start out with something like that.

MM: Right. Start with more conservative things.

DL: With the placebo effect, what was important was, the point we tried to make was that it's important to understand it and perhaps in a way take advantage of it, but not be fooled by it. And if you look around about all the crazy therapies that are used, you begin to understand how people get fooled by it, you know. They manipulate cranial bones, they do all kinds of weird things –

MM: It's very easy. People respond to it.

DL: And they get better, you see? And they say, "Look; they're getting better." There's no argument; they *are* getting better. It's fine, you know, if they're getting better, but at least, you know, maybe I shouldn't say it that way, but maybe it's OK to fool the patient, but don't fool yourself. Because then you end up doing things sometimes for the patients that are inappropriate. And that's bad.

MM: Right. And that's always a trap. Let me understand – let's just go back to the sort of explanation that you proffered in the original paper. As I recall, what we're thinking is that the patients are under a lot of stress, and they respond to this stress, I guess, by clenching their teeth?

DL: Well, the idea was we said it was a stress-related disease. And what happens is that in these people, the studies have shown us that they get increased muscle activity when they're stressed. The studies that we did and other people did that we'd stress people and do EMGs [electromyography], and their muscles become hyperactive. So what we hypothesized was that this hyperactivity ultimately fatigues the muscles, and the fatigued muscles become painful.

MM: Right. They go into spasm.

DL: Many patients, they have clenching or grinding habits. And there again it's interesting because we put a lot of emphasis on grinding of the teeth, and actually clenching is a more deleterious activity, and actually more people clench than grind. And they don't know it. People who grind know it, and people who clench don't have to have what we call parafunctional activity,¹⁹ you know, clenching or grinding, in order to tire out the muscles – just that centrally generated impulses coming down result in stress. You know, for example, I always ask the question, "Where did the expression 'up tight' come from?" People are trying to express that their body feels different. Their muscles are up tight, and that's what that is. You know, you're up tight in the jaw muscles.

MM: Creating tension, yes.

DL: So you don't have to have clenching or grinding, but if you're already up tight in your muscles and on top of it you clench or grind, then you're more likely to get clinical symptoms. But you don't have to have it. It was important to understand that, you see, because people say, "I don't clench; I don't grind." The doctor says, "Look, how do you explain this? They don't clench or grind; how do they fit your theory?"

MM: So it could be centrally generated.

DL: Yeah, it *is* centrally generated, and some people think clenching and grinding is a centrally generated activity that you do subconsciously. So that was the idea, that muscle fatigue is what's causing this problem.

MM: OK. So then the patients are given a placebo treatment or a tranquilizer or some kind of conservative treatment. And they respond to this and they get better, but the interesting thing seems to be that this effect persists. The improvement doesn't reverse itself. Because they must still be under stress; I mean, you can't relieve the stress of their lives.

DL: No, you're right; you can't. But, you see, you were describing sort of the research area. But we also treated them as patients, not only as research subjects. And what you do when you treat a patient is that there is a more complete protocol. And one of the things that we found out is that people who have so-called psychophysiologic diseases, and there are other psychophysiologic diseases, you know -- ulcers, although now they've come up with a bacteriologic explanation for it, so there goes the theory! Although some people feel it's still a component.

MM: I think so. My dad had an ulcer. Go ahead.

DL: It's still a component. I lost my train of thought here!

MM: I'm sorry. You were saying that you had to go through a complete clinical protocol.

DL: Yeah. So what we found was that these people have difficulty accepting a psychological explanation for the problem because we haven't talked about it – we might get into it, the type of personality that these people have – but anyway, they don't accept this sort of thing because these are usually very strong, dominant sorts of personalities, and they don't like to accept the sick role. So initially, when you talk to the

patient you talk about they have a physical ailment. They've got muscle spasm, muscle cramping, muscle aching, and then you tell them, "The things we're going to do are going to return your muscles to a more physiologic state." And we use a medication for that, they use a bite appliance for that, and we use escalation of therapy; if that doesn't help the patients, we can go into physical therapy or relaxation therapy. So there's a stepwise progression in how you treat these patients.

Now, if you're fortunate enough, and you can help about at least ninety percent of your patients, as they get better, somewhere along the line, then you talk to them about, you say, "Look, Marcia, initially when I saw you" – and I'm making this up – "you didn't ask me what's causing the problem. Or you asked me, 'What's causing the problem?' and I said to you, 'I'm not sure, but when I decide, we'll talk about this.' Let's talk about what your problem is." And at this point, whether they're willing to accept it or not, they're willing to listen. Because you helped them, so now they trust you, you see? And so at that point you tell them, "What you have is a stress-related disease. And it's very similar to an ulcer," and people can relate to that because ulcers bleed, and you can see it in an x ray, you can cut it out, you know. You say to them, and you have to make some things clear, you know, and the minute they hear "psycho-," [they think] it's in your mind, "but this isn't in your mind; you have to understand that physical ailments can be caused by stress." You know, Selye²⁰ said that many, many, many years ago. And so you explain this to the patient, that stress – and sometimes patients, once they make that connection, they're able to deal with it better. Because very often what happens is some initial stress triggers this, OK?

Now, though, they're not doing the appropriate things to get rid of the pain; so now they've got a longstanding chronic process, and they're beginning to think, "I've got cancer, I've got this, I've got that." And when you tell them all of a sudden, "This is not a serious disease; you've got to learn to manage it," et cetera, et cetera, just making that step sometimes is all you need. So the patient does learn that stress is part of it, and they learn how to deal with it. But where you introduce this concept – now, if in the initial visit the patient, if you ask them, you know, "Was there anything stressful in your life around the time [the pain began]?" and they tell you, "Oh, this happened," or they'll say, "Every time I get upset about something, the pain gets worse," if they've already made that connection, you can introduce that earlier. But if they haven't, you know, I wait until a later stage to do that.

MM: I see. OK.

DL: But that's part of it.

MM: You were talking that in the center you have some psychologists working on the team as well as dentists, I guess. And some basic scientists as well? I guess what I'm asking is, is this a multidisciplinary team?

DL: Well, yeah, well, we're talking about two different teams, and we're talking about the team that was in the clinical center, and that was multidisciplinary because we had as many dental specialists as we needed, and we had psychologists as part of the group. And if we needed people, like an otolaryngologist, they were available to us, you see. So it was a team approach from that standpoint. Then, in addition to that, we had a research team that was also working in different areas. So we had one person who was an anatomist and another person who was a biochemist. So there were really two teams and two components. As I said, we started out originally with two groups, and we always maintained the two groups.

MM: I see. So tell me a little bit about the patients, then, the characteristics that you saw in the patients as a

clinician. And how did – you set up this center, but you were already seeing a number of these patients. They were already being referred to you?

DL: Yeah, they were already being referred to us; but then we got a physical place, so we were able to centralize all of this, is what happened. And we tried to promote this in a very ethical way to get patients, and these are the types of patients that [physicians and dentists] were very happy to pass on to us.

MM: Right. Frustrating to treat.

DL: One of the things, as you noticed, I didn't call it a TMJ and facial *pain* center; I called it a TMJ and facial pain *research* center. And I always did that, because I wanted patients to understand that this was a research center, that we were going to be treating them, but also we're doing research. And it was interesting because at one time we would solicit patients who had been treated, to make contributions to the center. And they would. They realized it was a research center, and they were helping other people. So that worked out very well.

MM: Tell me a little bit about the patients.

DL: Well, these, first of all, patients are predominantly females who develop this problem, which you may or may not know.

MM: Yes, I had heard that.

DL: And the literature shows anywhere from three to one, five to one, female to male predominance. The question always is, you know, why? Why more females than males? My wife has a great answer. She says men *cause* the problem. And there may be some truth to it.

I don't know if anyone really has the answer; on the other hand, as you know, there are a number of different psychophysiological diseases, or other diseases, which occur in both males and females, but predominate in one over the other. For example, men get more ulcers than women. Actually, men get more back pain than women. Women get more headache type of things, and so on. So it's not unusual that this would be more in one sex than the other. I think it really is; some people say, "Well, women have more time; they're more concerned. They're more this, they're more that." Those things may be true, but that doesn't account for [the variance]. I remember, for example, one time I was a consultant at the Great Lakes Naval Station,²¹ where it was mostly males. But the patients that they would bring in for consultation were mostly females. And I think this has been demonstrated many times. So they're mostly females. They're mostly young people; usually twenty to forty is the age group that we talk about, although you find some that are younger, some that are older, but that's the predominant age group that you find. So that's also a characteristic. They tend to be better educated. And here, again, you would think that these are the people who ought to get the best dental care, and so there again how do you relate it to the bites and all these sorts of things? I mean, these are the people who are getting all the good care, you see? So that's another characteristic. Also, if you characterize them psychologically, they tend to be dominant personalities, strong, most of them, strong, dominant personalities. We did a study on that, too, and it's amazing when I go back, two things. Number one, the diversity of the type of studies that we did was interesting, and the other thing that's interesting is if you look at the literature now, what you find is people are doing the same studies over again.

MM: Yes, I've noticed this.

DL: And sometimes without citing. Now, with computers, you know, the searches only go back so far. And so people stop.

MM: Before 1966?

DL: Yeah. And so a lot of things we did never get quoted, and you see the same studies being done. But the nice thing is that they're showing the same things that we showed. So let me see; what was I trying to tell you? I keep getting sidetracked.

MM: That's OK. This is interesting.

DL: Oh, about the types of patients. So we did a study to characterize the personalities, how did we know they were strong, dominant personalities? And what we did was we used the classification that was developed by Timothy Leary,²² of LSD fame. He was a psychologist at Harvard before he –

MM: Tuned in.

DL: That's right. Or tuned out or something.

MM: And dropped out.

DL: And dropped out! He broke up the patients into these different categories, and we took our patients, we put them into these different categories, and we found that most of them were strong, dominant personalities. So how do you relate that to these people who get this problem? Well, our psychologist said to us, "Well, if they're strong – they're strong, dominant personality, and so these are people who like other people to see them as strong personalities. And so they do not like to profess to weakness, and to be sick is a sign of weakness," you see. But on the other hand, if you have all these stressors and so on, the normal response to stress is to holler and scream and break a few dishes, and vent your emotions, or cry. But if you're a strong, dominant personality, strong, dominant personalities don't cry. Well, what do you do? You've got all these inner tensions, but you won't let them out. And what happens in people who build up this stress is they somatize. They express their stress in changing body functions. And that's how they get psychophysiologic diseases, you see? So some people express it by getting colitis, and some people express it by getting headaches, and some people express it by getting ulcers, and some get neurodermatitis.²³ And what we were looking at was a small segment of a large population of patients who develop psychophysiologic diseases. And they're all very similar in a lot of these characteristics. And if you look, interestingly enough, if you look at the low back pain group, they're almost exactly like the MPD group except they're mostly males.

MM: That's really interesting.

DL: So as I say, we were really dealing with a lot of basic concepts that apply in the pain field without really realizing it, I guess.

MM: Yeah. It really did change the field. I mean, people talk about it in far different terms nowadays.

DL: Well, they're not grinding teeth any more, that's for sure.

MM: Yeah. That's a good thing. I hear it now referred to as TMD, though, more and more.

DL: Yeah. Well, let me get to the TMD.

MM: OK.

DL: All right. TMD, the term TMD, which is temporomandibular disorder, was developed in 1982. At that time the American Dental Association held a conference; it was called the President's Conference. And they brought together clinicians and scientists from various disciplines to discuss this field. What they realized was what we had been talking about for twenty years before that, and that is, you know, it's not TMJ, and so their idea was, well, they wanted to get away from TMJ, and they wanted an umbrella term. And so what they did was they said, "Well, let's talk about temporomandibular *disorder*." And under that you'll have two categories. You'll have TMJ problems, which are the physical, organic problems, and you'll have MPD, or the muscle problems. So it's an attempt to provide an overall umbrella term. It was a good idea, but it was a bad idea.

Why was it a bad idea? Partly it turned out to be a bad idea because what they did was they changed one letter, but they didn't change the mindset. So now people, instead of saying, "It's a TMJ patient," [would say,] "It's a TMD patient." But what they did was they messed up the literature. They really messed up the literature because now, when you read a study, they say, "We have fifty TMD patients." Who are they? What do they have? Who knows? You don't know.

MM: Right. Because they're all organic conditions.

DL: That's exactly right. I mean, there are people who've got arthritis, they've got internal derangements, you know, clicking, popping, locking, and who's the patient population? You have no idea. Now, maybe we were a little inclusive when we said MPD, because in those days we didn't understand internal derangements, and so some of these people had clicking and probably fell into that group. But it was certainly a more refined group than a TMD group is today. So as I say, it turned out to be a bad idea. I guess because people don't use it appropriately; they just don't use it appropriately.

MM: Yeah. I guess I have sort of thought of it as an all-encompassing diagnosis, and I think a lot of patients think that way, too.

DL: Yeah. One of the things that I've said – the biggest error we've made in the past and continue, I think, to a great extent now, is that clinicians tend to put together under one diagnostic heading a variety of etiologically unrelated conditions just because they produce similar signs and symptoms. That's the key to the whole thing.

MM: That's really interesting.

DL: That's the key to the whole thing. Because any patient that's got, you know – they can't open too well and

they've got pain in this area, that's TMD. And the causes are so different! See, once you've made that mistake, then the next mistake is what I call a one-diagnosis, one-treatment philosophy, you see, and everyone's got their – they don't all treat them the same, but one does this and one does that, and you're going to hit a certain number of correct ones, but then you miss a lot of them. That's why it continues to be a very complex field, and people are not getting treated well because they're not getting what they need. And sometimes what they don't need creates problems that *really* compound the old issue.

MM: Now, I want to talk to you a little bit more about that because this is something that's been mentioned to me, not just in dental education, but in medical education, particularly regarding pain problems as well. But we could sort of focus on dental education. And I know that you've written some about this, certainly when you were the president of the ADSA [American Dental Society of Anesthesiology] and some other roles, you've written about dental education. Do you think that most dental students are – I mean, it would seem a fairly simple – not simple, but something that should be part of their basic training, to understand the etiology and the appropriate treatments for whatever you want to call it, TMD or MPD?

DL: As you say, I've written on this, and I certainly subscribe to that philosophy. It's a complex problem, and I can certainly comment on how it happens in dentistry. Dentistry, unfortunately, tends to be a technique-oriented specialty. And dentists in their training – It's interesting, they're trained to have answers to almost everything they do. They're taught, you know, step one, step two, step three, step four, and this is how you accomplish it, you know. If you have tooth decay, you know, you scoop it out, you put something in there to fill up the hole. You've got periodontal disease, you scrape away the tartar on the teeth. And if that doesn't work, you cut away the gums, and you take care of that. If you've got a problem with exposed pulp in your tooth, you ream out the canal, and you shove something up there, and that takes care of it. I mean, they've got answers to all the things, except in two areas. And what are they? Mucocutaneous lesions²⁴ that people get, and the other is in the pain area. They don't have the answers to those things. So what happens is they look for very regimented ways of treating these things. They also lecture, and someone says, "Here's how you do it. You do this, you do this, you do that," and it deals with mechanical things, and you relate to that. And, you know, fortunately, I think dental education is changing, but you still have that mindset engrained in a lot of the people who are still involved in dental education. And so what happens in the dental school –

MM: That's the way they were taught?.

DL: Is that you get a kind of a conflict between the people who try and teach a more basic, a more philosophical approach, and those who are trying to teach a more mechanical approach to it. Well, who has the greatest exposure to the students? The people who teach the mechanics of dentistry. And they have a greater influence. So students are getting both sides, and you try to influence them, but how they come out, you know, is difficult to say. So we do the best we can.

And it's a lot easier now because I think more and more people have accepted the kind of concepts that we're talking about. But in my earlier years, it was kind of interesting because I would give a lecture, and it would be entirely different from anything else they were being taught. I doubt if I was reaching the students; they found it interesting, but, you know, in the volume of things that were thrown at them, it probably got so diluted it never made an impact.

MM: Yeah, it is hard; they have to learn so much stuff.

DL: And I think also, pain management is becoming more and more sophisticated. It's getting better. And people are beginning to understand it more, but it took a long time.

MM: Very long, yes. I know a lot of people have expressed frustration about it to me over the last few years, yeah.

DL: And it's still taking a long time because if you're in practice getting paid to do the things you have to do for patients and so on; but again, also, I guess the physicians' orientation toward the psychological factors and so on probably is not all that it should be.

MM: Sometimes, yeah, certainly true. About the pain field, while you were doing this TMJ work, while you were doing these extensive research studies, were you aware of people working in the pain field, of some of Bonica's work, for example?

DL: Yeah. I mean, I knew John Bonica.²⁵

MM: Did you?

DL: Yeah. Liebeskind²⁶. Chapman.²⁷ Who else? I knew pretty much the whole Seattle group out there. How did I get involved?

MM: Yeah, tell me the story.

DL: I'm trying to remember exactly how I got involved. I think I got involved -- I think I ended up on, what was it? The board --

MM: Right. [You were on] the original board of directors of APS [the American Pain Society],²⁸ and you were on the ad hoc group for the creation of the national pain society.

DL: I think the way I got on that was, as I say, I always had an interest in pain, and so I was broad enough to not only be interested in my own field but to realize that, you know, I had to be interested in the entire pain field. So I would go to meetings, and as I began to develop some sort of reputation in the field, I began to get invited to meetings. So I would participate in a number of different things they had out in Seattle. I was also -- at that time, in the early years, NIH and NIDR was funding very little in pain. And there was a fellow, Aaron Ganz,²⁹ who was on the staff at NIDR, and he and I became good friends.

MM: Right. He was doing extramural grants.

DL: Extramural grants. And it was very interesting, because he had a brother who was a dentist who practiced in the same building that I did in Chicago.

MM: A good connection.

DL: His name was Victor, and Victor and I used to always talk about Aaron. But I never knew Aaron, but he told me he had a brother, Aaron, who was a pharmacologist, he worked for NIDR, and so on. And then

eventually when he took over responsibility for my grant, I met Aaron. And it was interesting because it was like I met an old friend of mine ; I mean, I knew him, you know! And it was like, "Danny?" "Yeah. Aaron?" So we kind of knew each other because we had this common bond through his brother. So I was very involved in many of the things they did in the early years at the National Institute of Dental Research at conferences that they had on their sections that would review grants and things of that sort. I chaired two of their consensus conferences that they had, and so I was very involved at that level.

MM: Did you know Ed Driscoll?

DL: Oh, yeah, I was going to say, Eddie Driscoll³⁰ was an oral surgeon, so I knew him very well and worked with him. Ray Dionne,³¹ who is there now, trained here [at the Medical College of Virginia], and we recently did a study together. And so through them, when they would have conferences, I met Bonica and a lot of these people. I can picture this, because I can remember we stayed at the Marriott of Pook's Hill³² at one of these meetings, and I remember we were looking for a shortcut from NIH to that place, and I remember it was at night and we were cutting through all these people's back yards and so on, [with] the Seattle group, Liebeskind and Chapman and those people. I can't remember what the meeting was, but I remember doing this with those guys, you know. And there was a fellow named Kerr, who was from –

MM: From Mayo. Fred Kerr?³³

DL: Yeah, Fred, who was involved. I think what happened was I heard that they were talking about developing this type of thing, and I think somewhere I saw this list of people who were involved, and there either weren't any or there weren't very many dental people involved, and I remember writing a letter to somebody, and I can't remember whether it was John [Bonica] or somebody, saying, you know, "I think you ought to have more dentists involved because dentists also have an interest in this field." And you know what happens when you write a letter like that! They say, "OK. You're the guy!" And I think that's how I ended up being involved in APS. And so I had very early involvement. It was kind of interesting recently when they honored the people who were involved in [the founding of APS]; unfortunately I had a conflict and couldn't make it. I didn't realize – I got an invitation to come, and originally I didn't understand why, and I wish I'd been able to be there. It would have been nice.

MM: Yeah. It was a good meeting.

DL: Yeah, John Loeser³⁴ is another person that I know very well, having served with him on different committees. I knew Dworkin³⁵ from way back; Sam was at Columbia. He started at Columbia. It was interesting because when I had this TMJ center in Chicago, I started a – not a conference; sort of a seminar. And what we did was every summer we would invite a small group of people to meet together for a long weekend at a resort. And everyone paid their own way, OK? It was voluntary, and we picked a topic, let's say we were going to talk about muscles. And we would have moderators. No one made a formal presentation; nothing was recorded, and we could let our hair down – and in those days I had hair I could let down – and we could just talk, and we could be honest with each other about what we knew and what we didn't know. And it was interesting because I wanted to give the people who attended some sort of a certificate. And maybe before you go I'll show you the logo that I developed.

MM: Oh, yes, please. That's great.

DL: There's an organization called the American Equilibration Society,³⁶ which still exists to this day. And they were very involved in the TMJ field, in grinding teeth and doing all the things that I didn't believe in. And so I started my own organization. I started the American Nonequilibration Society. And I took their logo, which has a person and the balance of justice type of thing, and in their logo the pans are balanced, you see, the Equilibration Society. In my logo, the pans are unbalanced, you know.

MM: Oh, that's wonderful.

DL: I turned the scale the other way. I'll show it to you. I've got it here because I made a little thing out of it. So I started the American Nonequilibration Society. Sam was a person that very often we invited to come to this, and in those days he was, I think he was still earning his degree in psychology, and he was working at Columbia. He originally, I guess, had –

MM: OK. We're starting on the second tape of our interview with Dr. Laskin.

DL: But anyway, I was talking about Sam Dworkin, and as I say, he was working at Columbia, which at that time still had some remnants of Lazlo Schwartz' original Center. I guess that's how he became interested in the field, and then eventually, as you know, he went to Seattle, to the University of Washington. So over the years we've had a relationship. Nowadays I usually see him at the dental research meeting.

MM: Yeah. That's really great. So you were on the board of the APS for the first couple of years.

DL: Yes.

MM: And you sort of talked about knowing people in this field. Do you think this has had an impact on your work? That's the first question. Being part of the pain field.

DL: Yeah, I think it definitely has had an impact on the work that I did because as I say it broadened my viewpoint as to what was going on. It also allowed me to take advantage of some of the things that other people were doing and apply it to my field. So in a way I sort of patterned my center after a general pain center where they'll have psychologists as part of the team, where the importance of psychological factors are very, very important. I was able to kind of take some of the therapeutic things that they had tried, and see if they would work in this field. So in a sense, in a way, I took a lot from these people and applied it in my own area.

MM: So how about in dentistry in general? Do you think general attitudes toward pain have changed?

DL: Oh, I think they have. Dentists have always been concerned about managing pain, and then you told me earlier that you were interested in the history of anesthesia. I'll ask you – I'll tell you who discovered anesthesia. Because Horace Wells, who was a dentist, discovered [chloroform] anesthesia; but there was also a question as to whether there might have been some other people with medical degrees.

MM: Yes. Right! There was also William T.G. Morton, who was also a dentist.

DL: Who was also a dentist.

MM: But Wells was the prior discoverer, yes.

DL: Yeah. Dentistry has always had this interest in pain because dentistry deals with pain. But I think their approach to pain was always try and make dental procedures comfortable; I don't think they ever were that concerned with other pain problems as a general thing, you know. They were taught about, you know, trigeminal neuralgia,³⁷ maybe someone occasionally mentioned atypical facial pain. But I don't think they had a great interest in those days. But I think getting into this TMJ field was in a way fortuitous, because it led me into a broader viewpoint in terms of understanding and managing pain. I think it had that effect in dentistry, too, so that you see more and more dental people who are becoming not only interested in it, but learning more about it, becoming more involved in a general way, not only in dental organizations but in the general pain field and in the headache field. And so I think it's been very good. You certainly do see it in dentistry. And you see it now in the curriculum, being taught more and more.

MM: Yes. More and more.

DL: You see postgraduate courses. It's slow, but it's happening. It's happening.

MM: Yes. Well, it's taken a while.

DL: Yes. The chronic pain patient was one of the people you wanted to get rid of, and now I think you can understand them, and if you can understand them, you can help many of these people so they're not being shuffled off as much as they used to.

MM: Now, you were president of the ADSA for I think a three-year term, is that right, in the '70s? I saw your CV.

DL: No, I'm laughing because I think I was president longer than most people were president.

MM: Oh, I see.

DL: There's a story that goes along with that, which I don't know if I want to put on tape. But it had to do with some financial finagling that went on, that was discovered during my term, and therefore in order to get this resolved, they asked me to stay on for an additional year, I think it was. I served for three years. Three or four, I don't remember.

MM: Well, the dates are '76 to '79.

DL: Yes, for three years.

MM: OK. So we'll put that on the side because I guess what I wanted to ask you about, then, was the problem that seemed to have occurred – I know that Ed Driscoll has written a little bit about this and that it was talked about a lot in NIDR. Let me see if I can state this. The problem was that dentists were using general anesthesia to relieve and to essentially prevent pain, and there was concern that they're not being adequately trained in general anesthesia. And over time, particularly because of things that were being done at NIDR and with grant funding, there's been more of an emphasis on [dentists getting trained in] sedation. So I wondered if you wanted to talk a little bit about that.

DL: Yeah. I mean, you open up an entirely new subject with very broad ramifications. Yeah, going back, actually when the American Dental Society of Anesthesiology was started, it was an interesting group because there were some people who had an interest in anesthesia in dentistry in a broader sense than local anesthesia. Obviously, local anesthesia was always used. The [general anesthetic] agent that was used predominantly in the early days was nitrous oxide, which is an anesthetic; it's not a very good anesthetic because it's not potent enough, and in order to get it to be potent enough you had to use the oxygen concentration. And that led to the potential for complications arising. And anesthesia in dentistry, in those days, although there were probably some general practitioners who were doing it, was mostly in the realm of the oral surgeon, who started out essentially as an exodontist. And they used to talk about the people who had one tooth in the air all the time, but under nitrous oxide you had to work fast. And the only way was to keep them oxygen deprived for a short period of time.

But gradually they introduced different inhalation agents, which expanded the ability to use nitrous oxide, and when they introduced the intravenous agents, this opened up a whole new field. Along with this, obviously, there was a need to improve the training. Two organizations I think were important in doing this. The American Dental Society of Anesthesiology was certainly very important in holding conferences early on, and in working with the American Dental Association developing guidelines for dentistry and for dentists, to be sure that those people who use these agents had appropriate background and training and experience, and didn't just take a short motel course for a day. The other organization was what is now the American Association of Oral and Maxillofacial Surgeons, which in those days was the American Society of Oral Surgeons. So they've progressed also. Because in the past and to this day, and I assume in the future, anesthesia has really been an important part of what the oral and maxillofacial surgeon does in his office. So our association has worked hard not only to help the other organizations – the ADA and ADSA – to improving their guidelines, but also we have our own guidelines. And also we have mandatory office inspections that people have to go through. We've also been very active in getting state Boards of Dentistry to establish licensure for people so that they know who's doing it and they know what training these people have. As a result of this, anesthesia in the dental office is really an extreme safe procedure. And there are many patients that require this type of treatment, and enables them to have treatment that they would neglect having under other circumstances.

MM: Yeah. It's always a critical factor.

DL: Now, with the use, with the introduction of better intravenous agents, now the idea of using so-called conscious sedation has expanded, and so there's more of that being used than in the past, and probably somewhat less general anesthesia. But in the oral surgeon's office, they're generally doing both, whereas in the general practitioner's office, they're usually more the other.

MM: More sedation. Because I have had some people express the concern to me that they still think that oral surgeons tend to be too – what do I want to say? – not of course too well trained, but they tend to be sort of protective of their right to do anesthesia and resistant to being supervised. Of course, that will differ from state to state.

DL: Well, supervised by whom?

MM: I guess regulatory authorities. I guess, I mean, Dental Boards? Who would do the regulation?

DL: Well, the Dental Boards that do the regulation – that seems contrary to what I just said –because our association has encouraged licensure. Now, the motivation behind it was not only to ensure that the oral maxillofacial surgeon was well qualified but also to be sure that people in general dentistry or other dental specialties who were using anesthesia had comparable type of training. I don't know if you're familiar with the type of training that the oral maxillofacial surgeon has in anesthesia, but actually they have quite extensive training. The training that they have during the residency program, for example, they start out spending four to six months on the anesthesiology service, so that's in the operating room, as a regular anesthesiologist. And then the minimal training in oral maxillofacial surgery is four years. And during usually at least the last two years, sometimes the last three years, they also do anesthesia for patients in the clinic. So they're doing this quite extensively. And then of course, in addition to that, during their training they're getting training in medicine and they're getting training as well in anesthesiology. So they have the appropriate background for doing all this. So they're well trained.

MM: So this really has been amplified in the last thirty years or so.

DL: I think the discussion nowadays is about – what you were alluding to – whether it should be a specialty of anesthesiology and dentistry. There has been a conflict between the oral maxillofacial surgeons and another group of people who are two-year-trained people. There are two-year programs. In fact we have one here where we train dentists, and anyone coming into that program certainly is well qualified to administer general anesthesia. They create several problems. One is the fact that, where is the place for them when they're finished? I suppose it would be nice if dental schools could hire people like this to do teaching, but sometimes that doesn't happen.

So what they end up doing is either they use this experience in their own practice, and so they're doing dentistry under general anesthesia, let's say for handicapped patients or for children, or they end up becoming itinerant anesthesiologists. They go around and they provide services in other offices. And that's risky. Because you have a concern about transporting equipment, you may not have equipment when you need it, equipment may malfunction, you're working with personnel who may not be trained to work under general anesthesia, both the doctor and the assistant. So it's not a good situation. The question is, is there really a need for this type of thing? So that's been a matter of conflict.

MM: And would that create two bills for the patient? For the dentist *and* the anesthesiologist?

DL: Yes, they would. But there again, in dentistry, it's interesting because of the way dentistry evolved early on, when anesthesia was sort of included. And now it becomes more difficult. But many insurance carriers will pay for anesthesia and sedation as a [separate billable] service.

MM: So – we've been sort of alluding to all this sort of casually as we go along – you've become more and more active on a national level in the '60s and the '70s, as your research was going on; you were becoming very active.

DL: Yeah, I was always active; I try to keep active both in the clinical area and in the research area. So I've always continued to do research, and most of my research has been in the TMJ or TMD field. I joined the International Association for Dental Research, I think, in 1955; in March I'm going to the meeting. I don't think I've ever missed one; I may have missed one over all these years. And I've always had at least one

abstract to present at every one of these meetings.

MM: That's great.

DL: So that's been good, and it's a record I like to try to maintain as long as I can. And I'm presenting at this meeting in Vancouver, and one of my residents is presenting some material that we're doing together.

MM: So what kind of research are you doing at the present time?

DL: What kind of research am I doing at the present time? I got several things that are going on. One of the things, I'm doing a study with the psychology department over on what we call the academic campus rather than the medical center, where the patients who come to see me fill out a number of different psychometric tests, which I kind of use to evaluate the patients. And so we're going back now – [pause] I guess I'm back in shape. They're going back now, and there's a graduate student from the psychology department who's taking these records out, analyzing them, contacting the patients, and trying to correlate the results of psychological tests with the way they were treated and the results they got and so on. So that's one study. Actually, there's a condition which is called internal derangement of the temporomandibular joint, and that involves the fact that the jaw joint has some similarities to the knee joint, where in the knee joint you have a meniscus³⁸ between the two bones, and here you have a disk. The difference, a disk is a continuous structure; a meniscus has part of it missing. It's like a half moon shape type of thing.

MM: Oh, I see.

DL: But anyway, that disk in the jaw joint can slip out of place, and if it does, that's what causes the clicking and popping sound people have. And when it slips forward, it brings tissue from the back of the joint into the area where it doesn't belong, and you start chewing on that, and that brings in pain, so that makes it a pain condition. Or if it slips way out, the patient gets locked and they can't open their mouth very wide. And over the years, the treatment of this condition was very – at one time it was a surgical procedure where you went in and you anatomically repositioned the disk. Then they started doing it arthroscopically,³⁹ like they would in the knee joint, trying to bring the disk back. What we found was that it wasn't that important to get the disk back in normal position; what was important was getting that joint to move. And the reason that was important was these were what are called synovial joints.⁴⁰ And a synovial joint will only maintain good physiology, in a sense, if it moves; it only lubricates well if it moves. It was interesting because I didn't realize this; I did a study a number of years ago where we took monkeys and we wired their teeth shut to see what effect this would have on the temporomandibular joint. And what we found was in a four-week period, they began to develop early degenerative joint disease because the joint wasn't moving. All of a sudden, we're looking at these patients; it dawned upon me that, you know, why is it that we don't have to get the disk back, but if we get it moving and everything, the pain goes away? It was because we were getting the joint moving better than it was before, and so instead of using an arthroscope, we now just put two hypodermic needles into the joint. Now, you can't look in there but you don't have to; you know what's in there, but you can still wash it out the same way. And you can still hydraulically distend the joint and break up any adhesions that are present in there, and you get the joint moving. I've been doing this procedure now for about five years, and I've gone back now and analyzed all my data, and we're going to present it. And as you might expect, it works.

MM: That's really interesting.

DL: I mean, that's another project that I'm involved in.

MM: OK. We sort of skipped over a period of years with a sort of whoosh. So let's see. You were working on TMJ for a long time at the University of Illinois.

DL: I guess I've been working on it probably since, well, let me think now. I came back in '51 and started doing research then, so that's like I guess since '51, '52.

MM: That's a long period of time.

DL: That's a long time. But it's been fun.

MM: Yeah, I guess so. Are there other problems, in addition to the ones you've just mentioned, that sort of come into your mind as being important in your research? Other areas that you were working on?

DL: Well, at one time we started to branch off into the atypical facial pain area. And then because I had the feeling that many of these patients might be similar to those that developed the myofascial pain problems, but with a different etiology because the atypical facial pain seemed to be vascular in origin. We just had gotten started in that – what actually happened, it was very interesting, because I told you I was funded for about twenty-three consecutive years, and before I came down here [to MCV] in 1984, I'd just been funded for three more years. And what I did was I said, "Can I transfer my grant?" And the people at NIDR said, "If you can find the same people down here who could do the same studies, you can go ahead and transfer your grant." So I came down and I met some people down here, and they actually had some very good pain researchers here at this university. So I got commitments to go ahead and do the things. And so I moved my grant down here. There were two problems. One problem was that Chuck Greene didn't come down with me.

MM: Yes. That had been a long collaboration.

DL: Not only collaboration, but Chuck was the one that really kept the clinic running. I didn't have the time, obviously, based on all the things I was involved in, I didn't have the time to do the day-to-day running of the clinic and keep the patients going and so on. At the University of Illinois, Chuck had a funded faculty position. And therefore I never built any funding into the grant for that type of position. So when I transferred my grant down here, it didn't have that type of funding in it, and I didn't have the money to hire someone to run the TMJ center. There was a center here; I did get it started. So we began to try and do things. The other problem I ran into was that this institution was not as academically oriented as the University of Illinois, and I had difficulty getting these people to focus on research. It was like, "Well, who's going to pay me for making this splint?" type of thing. So after about two years, I realized that I was writing grants for people who didn't have a major interest in it. My reputation was on the line. And so after all those years, I just gave up. I just never renewed it.

MM: That's too bad.

DL: Yeah. But I've continued to do research, and I still, you know, we try to keep the center going. I still have faculty people in my department who are interested in the field, who are doing basic research; I fund it from

other sources. So we're still going.

MM: Yeah. So what brought you down here?

DL: The weather.

MM: Oh! Well, that's an excellent reason!

DL: Yeah. What brought me down here actually was my wife developed some arthritis, and the Chicago weather was rough on her. And based upon my activities over the years, as you can see, my wife was generous in giving of her time, and I felt I owed it to her to make it a little more comfortable for her. And after all these years in one place, in my younger days I used to get a lot of offers to go places; people figured I'm never going to move, you know. So I would kind of put out the word that I was interested in going. And what happened was there was a fellow; I trained him, he's been on my faculty, and then after about three or four years he came down here. So he was here, and the head of the department had died. And so they were looking for somebody else, and he heard that I was interested in making a move, and asked me if I was interested in coming down here. And that's how it happened. So I came down here and united with him again for a few years, about three years; then he went back and took my old job at Chicago.

MM: That's amazing.

DL: At first he took a job at Michael Reese Hospital⁴¹ before he got the job that I had. I was called by the medical director to ask what I thought about him and so on, and obviously, I mean, he was a good person; I gave him a good review. And I kind of told them the story I just told you about how I trained him, he came here, then I came here, then he went there; he says, "You're not thinking about coming back, are you?" I said, "No, I think this is my final move." So that's how that happened.

MM: That's funny. I like that. And also you've been – I mean, we mentioned that you were the president of the ADSA and also I think one of the international associations?

DL: No; I've been president of the American Association of Oral-Maxillofacial Surgeons.

MM: I have the International Association of Oral Maxillofacial Surgery.

DL: I've been president of that, too. And also I guess one of my proudest accomplishments is I'm editor in chief of the *Journal of Oral-Maxillofacial Surgery*, which is the premier oral-maxillofacial surgery journal in the world. I've been editor of that since 1972.

MM: How do you balance all your time?

DL: And I write an editorial every month.

MM: Somebody mentioned that; they'd seen some of them.

DL: For one year, the year I was president, they said there might be a conflict of interest, that my editorial might seem like it represents the Association. So for one year I didn't. And then in fact a few years ago, W.B.

Saunders published a book of my editorials, twenty years of my editorials.

MM: Yes. That's right.

DL: Which I thought was very nice.

MM: That's a nice thing to do.

DL: And I'm hoping that I'm going to try to do thirty years; then I think I'm going to quit. So I've got about almost three more years to go.

MM: Do you find it difficult to balance your time?

DL: Well, I guess it's always difficult to balance. I suppose I'm a well-organized person; remember I told you about Lenny Robinson and planning ahead?

MM: Yes.

DL: I guess I do that in everything I do.

MM: You learned that lesson well.

DL: I plan ahead. I juggle a lot, and I give priorities to things as they come along. But I try to not let things go to the last minute, although sometimes I find that I do better under pressure. And sometimes I'll let things go a little bit, just to force me to get to do it. And, you know, it's stressful, but when you love what you do – you know, people keep asking me, "When are you going to retire?" And you know there are some advantages. But I don't see myself playing golf and doing those things; I have a lot of writing that I still would like to do; I just finished a little book that I'm doing, so I don't know; I'm going to keep going for a while.

MM: Do you want to comment on the future of the dental profession? Any new and interesting problems that are coming up? Or how things are going?

DL: Yeah, the future of dentistry, I think, there was a time that it just looked bleak; they were closing dental schools and now they're opening new ones. One opened in Florida, and I hear there are two more that are going to be opening. So things are not as bleak as they would seem. Very often what happens is you kind of get caught up in trends, and then by the time you do something you probably shouldn't have done it in the first place because things change, you know. I think that's what's happened in dentistry. Dentistry is certainly changing. And I think it's changing for the better. I think that people realize that we have to get off this idea that, you know, of teaching by the numbers, that we want our students to be students the rest of their life, perpetual students, and learn how to do critical thinking.

Which reminds me of kind of an interesting story about when I use the word students, I remember many years ago when I was a graduate student at the University of Illinois, the dean at that time was Isaac Schauer, who was another one of my sort of role models. It was interesting because every Monday at noon he had a brown bag seminar for all the graduate students; some of the faculty would come. And he would

invite speakers to come; they would have lunch with us first, and afterward we would talk about things. At one of these sessions, there was a man named Leroy Boling,⁴² who was the dean of dentistry at [Washington] University St. Louis. And so I ended up sitting across from him at the table, and as a graduate student, I didn't know what to say to a dean; I was sort of intimidated by a dean. So I thought, "What am I going to say to this man?" I finally came up with a very brilliant question. I said, "Dr. Boling," I said, "how many students do you have in your classes in St. Louis?" I thought that was a great question, you see. But I got a great answer, because he didn't come back with, you know, "I've got a hundred in the class," or something like that; he stopped and he thought for a moment. And I kind of watched and finally he said, "Oh," he said, "about five or six." See, the question was, how many *students* do you have in your class?

MM: Oh, yes, very good.

DL: And he said, "About five or six." And I thought that was great. Because, you know, we always talk about motivating our students. If they were students, you wouldn't have to motivate them! }
So I think what we're trying to do is to get people to *be* students, to realize the importance of understanding things, of always being critical of what you do. And I think that's important. We're getting away from lecturing, more to problems, and dentistry lends itself to problem-oriented teaching. Learn to solve – problem solving. So I think we're getting to do that sort of thing. And although dentistry still is, probably will continue to be for, who knows when, probably forever, [focused on] its mechanical aspects, people are still going to need their treatment for their gums and their teeth and so on. It's probably going to be more of a shift to being more of a stomatologist,⁴³ more of a preventive type of care in dentistry. But it'll still be – it's a great profession.

Another big change, of course, is we're seeing more and more women in dentistry. And it's a wonderful profession for a woman because you can know that with a married life, you can gear your times more. But on the other hand, in oral surgery, things are changing also, I don't know whether for the better or the worse. Because now whereas the oral maxillofacial surgeon mostly over the years had a single degree, just a dental degree, now many of them are getting a medical degree along with it. That's changing the whole character of what people are doing. I mean, you know, it may be hard to believe, although I guess it's a natural progression, at least for the oral-maxillofacial surgeon who's now involved in doing cosmetic surgery. But we were always correcting jaw deformities and with jaw deformities you change facial appearance, and so it was a natural extension; you know, if you're changing the bony structures, why not change the soft tissue structures? So there are major changes.

MM: More extensive. Yeah.

DL: And big argument, should a dentist do hair transplants?

MM: [Well, you know, I do hear people in NIDR essentially talking about the entire nerve structure of the face.

DL: And they've changed it now that it's not NIDR any more; it's the Institute of Dental and Craniofacial Research. So it's all going in that direction. So there are some major changes. But, you know, what's interesting is that if you expand your scope, that's one thing, but if you shift your scope, that's another. Because if you shift your scope you leave a vacuum. If you leave a vacuum, somebody's going to fill it for you, you know. Initially I think what the oral-maxillofacial surgeon did was, and this includes the pain

field, at one time they were so busy doing other things that they gave up the TMJ area, you know, they gave up the facial pain area; now they want it back. And the oral-maxillofacial surgeon is well trained, and this is a good area for them to be involved in, and they should be involved in it; but now it's a matter of, you know, kind of catch-up in this field. So we train our residents more and more in this area. And in those places where they have a center like we have here and they have people who have interests like we have here, it's a good place to train because they do get that here.

MM: How many dental research centers like this are there across the country?

DL: Well, there are probably not a lot of research centers, you know, but if I tried to take a guess, Columbia still has one going on; there's one at the University of Washington, Seattle, there's one in Minnesota; Jim Friction has one,⁴⁴ we sort of have one, although it's probably not as good as it should or could be. There's one in Buffalo, and they probably come close to having one in Florida. I'm trying to think if they have any others. UCLA has one. San Antonio probably has one.

MM: So really not very many.

DL: But there are not a lot. And the question is, you know, when you name those, I kind of hedged on a few of them because of the word research. There are a lot of TMJ centers, but they're not all TMJ research centers. I mean, they're seeing patients, they're treating patients. But there's a difference between that and where you're also doing research. And those are much, much less.

MM: OK. What else would you like to say?

DL: What else would I like to say? I don't know. I've enjoyed talking to you.

MM: It's been pleasant for me.

DL: You've brought back a lot of interesting things from the past. I think I'd like to say that I think I made the right choice when I listened to my mother, because where I ended up was a good place. I really have no regrets, and over the years there were times when I kind of thought, am I in the right place? and so on. But I really have no regrets at all. I think it's been a great career. I've been able to do things that I never thought I'd be able to accomplish. So for a little guy from Ellenville, New York, I think I've come a long way.

MM: Well, I think that's good. And thank you. It's been a really excellent interview. I think I've learned now something about TMD or MPD or whatever you like to call it, as well as about dentistry. So thanks very much. I think we're going to conclude this interview now. It's ten past eleven. And thanks very much.

DL: You're welcome.

END OF INTERVIEW

References

- ¹ Oral and maxillofacial surgeons correct and treat injuries, diseases, and congenital defects of the head, neck, face and jaws, as well as the hard and soft tissues of the oral (mouth) and Maxillofacial region.
- ² Maynard K. Hine (1907-1996) joined the IU School of Dentistry as professor and chairman of the Department of Oral Histopathology and Periodontics in 1944; he served as Dean of the School 1945-68. He was a leader in establishing the Indiana-Purdue University campus in Indianapolis (IUPUI), where the School of Dentistry is now located, and served as Chancellor of that campus 1969-73.
- ³ The Midway Plaisance, a three-block wide green linking Washington and Jackson Parks.
- ⁴ Skokie and Evanston are suburbs directly north of metropolitan Chicago; Skokie is just west of Evanston, which is west of Lake Michigan.
- ⁵ Bernard G. Sarnat, MD, (1912-2011) was a pioneer in medical understanding of craniofacial development and in the treatment of facial deformities. He moved to Los Angeles in 1969 and held appointments in oral biology and plastic surgery at UCLA and at Cedars-Sinai Medical Center.
- ⁶ The condyle is the rounded protuberance at the end of the bone, part of the joint.
- ⁷ The temporomandibular joint or TMJ is the joint forming the jaw, between the temporal bone, part of the cranium, and the mandible, or jawbone.
- ⁸ Milton B. Engel, DDS, (1917-2012) taught histology and oral biology at the University of Chicago and remained active in connective tissue research throughout a long career
- ⁹ Dr. Catchpole remained a member of the Department of Oral Biology at the University of Illinois-Chicago and collaborated on research with Dr. Engel until his death in 2006.
- ¹⁰ Seymour H. Yale, DDS, (1921-2008), served as Dean of the University of Illinois-Chicago School of Dentistry from 1964 to 1987. He is credited with setting baseline standards for oral radiation safety to protect dentists and dental assistants from over-exposure.
- ¹¹ Allan G. Brodie, DDS, PhD, (1897-1976) founded the Department of Orthodontics at UIC in 1929 and served as Chair until 1966; his tenure has been referred to as “the golden age of orthodontics”.
- ¹² E. Lloyd Du Brul, DDS, PhD, (1909-1996) was a member of the UIC School of Dentistry faculty from 1946 to 1977. He was a world-renowned dental anatomist and anthropologist and founded the science of biomechanics of the head and neck; he was the first dental researcher to apply mechanics and engineering principles to the study of jaw and skull movement.
- ¹³ *Kup's Column*, by raconteur and journalist Irv Kupcicet (1912-2003), began in 1943 and continued to appear in the *Sun-Times* until his death.
- ¹⁴ Charles S. Greene, DDS, as of 2015 was Director of Orofacial Pain Studies and Clinical Professor of Orthodontics at UIC.
- ¹⁵ Dr. L. Laszlo Schwartz (1905-1966) was Clinical Professor of Dentistry at Columbia University, head of the Section of Clinical Oral Physiology and Director of the Temporomandibular Joint Clinic, which he founded in 1949.
- ¹⁶ Laskin DM. Etiology of the pain-dysfunction syndrome. *Journal of the American Dental Association* 1969 Jul; 79(1): 147-153.
- ¹⁷ Meproamate was marketed as Equanil by Wyeth, but is perhaps better known as Miltown, the brand name used by Wallace Laboratories. It was one of the best-selling drugs of the 1950s and early 1960s, but has since been largely replaced by Valium and the other benzodiazepines.
- ¹⁸ The *Physician's Desk Reference*, or PDR, is an annual commercial publication which gives the manufacturer's prescribing information for all currently marketed clinical drugs. The PDR is designed for use by physicians and pharmacists, but is also available to consumers in libraries and bookstores, and, since the 1980s, in an electronic edition. The *U.S. Pharmacopoeia* (USP) is an annual non-profit compendium of currently marketed human and animal drugs, food supplements and ingredients, which list the federal standards for strength, quality and purity.
- ¹⁹ Parafunctional activity is the habitual exercise of a body part other than in the way the part is most commonly used.
- ²⁰ Hans Selye (1907-1982) was a pioneering Canadian endocrinologist, originally from Hungary, who did extensive work on biological stress, the hypothetical non-specific response of an organism to life stressors. His 1978 book, *The Stress of Life*, is still in print.
- ²¹ The Great Lakes Naval Station is the largest Naval training station in the US, located in North Chicago, on Lake Michigan.
- ²² Timothy Leary (1920-1996) was an American psychologist who developed a complex and well-respected interpersonal

model, published as *The Interpersonal Diagnosis of Personality* (1957), demonstrating how psychologists could methodically use Minnesota Multiphasic Personality Inventory (MMPI) scores to explain interpersonal behavior. In the early 1960s, Leary began a series of experiments with LSD and other psychoactive drugs that led to his advocacy of “psychedelics” as agents of mind expansion and cultural change. He became a hero of the counterculture, but his drug use and outspokenness also led to a long series of arrests and prison sentences. He continued to write, lecture and advocate for his views until his death.

²³ Colitis is a chronic inflammation of the colon that may cause abdominal pain, bloating, cramps, and diarrhea. Neurodermatitis is a skin disorder characterized by chronic itching and scratching.

²⁴ Mucocutaneous refers to areas where the mucosa transition to skin, generally near the lips and inside the mouth.

²⁵ John J. Bonica (1917-1994), widely recognized as the founder of the pain field, was Chair of Anesthesiology at the University of Washington for much of his career. The book Bennett refers to here is Bonica’s *Management of Pain*; Bonica published the first edition in 1953. He also founded a multidisciplinary pain clinic at UW and convened an International Pain Symposium in Issaquah, Washington, in 1973, which catalyzed the formation of the International Association for the Study of Pain.

²⁶ John C. Liebeskind (1935-1997), professor of physiological psychology at UCLA, was a founding member of the IASP and the APS. He is perhaps best known for his work on stress and stimulation-produced analgesia (see note 3), and also for his demonstration that persistent pain is harmful, in the stress it places on the immune system and other endogenous systems (see Liebeskind JC. Pain can kill. *Pain* 1991 Jan; 44(1): 3-4). He was also the founder of the Liebeskind History of Pain Collection at UCLA.

²⁷ C. Richard Chapman, one of the leaders of the American pain research field, as of 2015 was Professor Emeritus of Anesthesiology at the University of Utah School of Medicine.

²⁸ Founded in 1977.

²⁹ Pharmacologist Aaron Ganz (1923-1996) held a number of extramural grant management positions at NIH from 1972 to 1986. For more than 10 years, he was chief of the Pain Control and Behavioral Studies Program Branch at NIDR Extramural Grants.

³⁰ Edward Driscoll, as Chief of NIDR’s Oral Medicine and Surgery Section, began conducting studies of dental anesthesia in 1957. His aims were: to establish the necessary baseline physiological data; to evaluate the effects of stress on the dental patient; and to find the best methods of alleviation. With his associates, he performed full mouth extractions on more than 1200 patients, and collected readings for pulse, blood pressure, respiration, arterial oxygen levels, EEG, and EKG. See: http://history.nih.gov/exhibits/pain/docs/page_02.html .

³¹ Raymond Dionne, DDS, PhD, is a leading researcher in dental analgesia studies; he succeeded Ron Dubner as Branch Chief of Pain and Neurosensory Mechanisms at NIDCR in 1996 and was named Scientific Director of Intramural Research at the National Institute of Nursing Research in 2005. As of 2015, he was Professor of Pharmacology and Toxicology at East Carolina University in Greenville, NC. For more information, see his oral history interview at: <http://history.nih.gov/archives/downloads/raymondionne.pdf> .

³² Pook’s Hill is a neighborhood in Bethesda, Maryland, north of NIH.

³³ Frederick W. L. Kerr, MD, (1923-83) was a member of the Department of Neurosurgery at the Mayo Clinic from 1960 until his death. He carried out important research on the opiate mechanisms of tolerance and dependence and on the spinal mechanisms of pain transmission.

³⁴ John D. Loeser, MD, was Professor Emeritus of Neurological Surgery, Anesthesiology and Pain Management at the University of Washington as of 2015, and was Director of the Multidisciplinary Pain Clinic at UW 1983-1997.

³⁵ Samuel F. Dworkin, DDS, PhD, as of 2015, was Professor of Oral Medicine and Professor of Psychiatry and Behavioral Sciences at the University of Washington.

³⁶ The American Equilibration Society, founded in 1955, identifies itself as the largest organization in the world that deals with the diagnosis and treatment of diseases of dental occlusion (bite problems) and disorders of the temporomandibular joint (TMJ) and associated muscles.

³⁷ A chronic facial pain condition based on a disorder of the trigeminal nerve.

³⁸ A crescent-shaped structure of cartilage fiber.

³⁹ An arthroscopic procedure uses an endoscope inserted into the joint through a small incision.

⁴⁰ Synovial joints connect the articulating bones and have capsules on the surface filled with lubricating synovial fluid, making them highly movable.

⁴¹ One of the oldest and largest hospitals in Chicago, founded in 1881 and located on the south side, Michael Reese closed in 2009 due to financial insolvency.

⁴² Leroy R. Boling, PhD,(1905-1984) was Dean of the Washington University St. Louis School of Dental Medicine from 1953 to 1967.

⁴³ Stomatology refers to oral medicine, or the study of the physiology and pathology of the mouth and all related structures.

⁴⁴ James Friction, DDS, as of 2015 was Professor Emeritus of Diagnostic and Surgical Sciences at the University of Minnesota School of Dentistry; he retired in 2011.