



Oral History of Diana Merry-Shapiro

Interviewed by:
Hansen Hsu

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Hsu: So, the date is August 9th, 2022. I'm Hansen Hsu here with Diana Merry-Shapiro. And so, first, to begin, where and when were you born?

Merry-Shapiro: I was born in Des Moines, Iowa on February 25th, 1939. I grew up in-- well, the first three years-- first six months of my life was in Des Moines, the first three years, next two-and-a-half or three years was in Milwaukee and from then on I was in a-- in Southwest Iowa where my mother had grown up. My father was in the Soil Conservation Service. He had gotten into the Soil Conservation Service for having been in the CCC camps during the depression. And my mother's father had a big farm in Southwestern Iowa near-- about 50 miles east of Omaha. And I'm a kid from Iowa. Farm kid.

Hsu: Oh. So, do you have any siblings?

Merry-Shapiro: I have one younger brother who's a doctor in Colorado. I don't have much contact with him, but he was my brother. <laughs> So, growing up in Iowa was an incred-- was its own sort of unique experience. It had its plusses and it's minuses. I'm very glad that I got to grow up there. I'm also pretty glad that I didn't have to stay there.

Hsu: Yeah, any-- so do your parents-- what's your parents' background?

Merry-Shapiro: So, my father grew up down in-- he was-- he grew up in Bethany, Missouri. He was-- they were really, really poor. One of my favorite summers as a child was with my Grandma Mayhugh, my father's-- my maiden name is Mayhugh. And my father's mother was an amazing, amazing woman and I got to spend a summer down there. But the unique thing about it was there was no running water. There was no plumbing. And no electricity. And it was-- so it was a very unique experience that very few people in this day and age in this country experience. So, I sort of have seen quite a span of civilization <laughs> as I've lived my life. You know, most of my life was in agricultural surroundings. My father grew up working on farms and my mother was just a young child. Her father had-- it was her grandfather who had gotten the farm and then her father inherited most of it. And she grew up in a small town, Avoca, Iowa, which is right on Highway 80 East, which is close to Omaha, about 50 miles from Iowa. It was a town of 2,000 people around or less. I spent much of my young years there up until I was in the eighth grade. Then we moved to another town, which was the county seat, which was somewhat larger and had a bigger-- slightly bigger high school. Harlan, Io-- which was Harlan, Iowa. I was an active kid. <laughs> I was in the band. I was in the marching band. I was in choruses. You know, I was in theater. I did lots of stuff. So, I was pretty active. Then I ended up going to university at Valparaiso University. My mother was very Lutheran. And Valparaiso was a Lutheran University. And I got a scholarship there. So, it was-- mom was happy and I was relieved I didn't-- that there was enough money for me to go. I ended up-- so I didn't end up getting a training that you would expect that I would end up being in software. My undergraduate degree is in Theater. I have a minor in Philosophy and a minor in Theology. So, I'm very well-prepared for cocktail parties, or you might say smalltalk. <laughter> But anyway I also had a lot of kind of natural-- I don't know, sort of reasoning talent, I guess. You know, I was very-- I was avariciously curious as I was growing up. So, I was always interested and always wanted to know how things worked and always wanted to see how things were put together. And that served me very well when we were-- when I began

working with Alan [Kay]. We used to talk about how it would-- one of my models for how programming should be, this is not how it actually probably turned out, but how-- is it should be kind of like working on a Model T [automobile]. A Model T is something that you can-- well, it's sort of like a lot of kids take a watch apart. The old pocket watches, you could take them apart and you could actually put them back together if you were clever. And the same like with the early farm equipment and early cars. They were rationalizable, you could understand them. You could figure it out. It's not-- that was one-- in the early days of putting Smalltalk together that was one of the ways I thought about it when we were trying to make it understandable. When you tried to make the code human understandable. But that you should be able to look at it and reason about what it was meant to do. And that notion has never been terribly popular, but it's still something I think is pretty important.

Hsu: Yeah, thank you. So, you mentioned you had a degree-- a minor in Theology.

Merry-Shapiro: Yes.

Hsu: And you mentioned your mother was Lutheran.

Merry-Shapiro: Right.

Hsu: So, were both of your parents religious? And were you particularly religious?

Merry-Shapiro: No, well, I was-- no, I mean, I ended up not being a part of the church. I struggled with it all my entire life, really, trying to understand what my mother was getting and feeling very bad that I didn't. It's sort of, you know, the climate-- the religious climate for growing up was, you know, if good things happened, it was God's fault. And if bad things happened, it was your fault. And so, that was kind of the attitude, sort of a work righteousness kind of theology. Although, it was Lutheran in that they would claim-- they would say that's not so. But especially the branch of Lutheranism I grew up in, it was pretty, pretty rigorous. My mother, you know, believed in literal interpretation of the Scripture. My father, on the other hand, was-- you know, he went along, but he was not particularly devout. And was much more sort of literate and humanitarian, I think would be a way of putting it.

Hsu: Or humanist?

Merry-Shapiro: Humanist, yeah. He's the one I really learned things about trusting yourself and being yourself and actually not being so hard on yourself sometimes. But my mother was pretty-- my mother-- it was hard for my mother. I mean, she-- there were pieces of her that were very lusty and full of life. And which was very much true of my father, but it was also hard for her because there was so many kind of moral prohibitions surrounding the-- in the religious life. But there was a period of time when I was very-- I struggled very hard. I mean, that's part of why I ended majoring in Theology¹ at Valparaiso was to explore through some of the people-- there was a religiou-- a theology faculty at Valparaiso and so I was really

¹ [Editor's note] Diana Merry-Shapiro did not major in Theology. She has a minor in Theology.

struggling trying to figure out, "What are these people-- why is it that I don't get what they get?" Eventually, I decided I wasn't wrong. <laughs>

Hsu: Yeah.

Merry-Shapiro: At least for myself.

Hsu: Yeah, yes. What other sort of interests or hobbies or subjects, favorite subjects did you have growing up?

Merry-Shapiro: Well, I mean, I was pretty athletic. My father had-- we had-- I know this doesn't sound like somebody who grew up poor, but we did, but my father also had a coup-- some horses. So, that was a big part of what took my attention while I was growing up. We would go on trail rides and we would actually show at like the County Fair or something like that. I was, you know, I played basketball. I was, as I said, I played in the band. Played a trumpet. One of the things that Chris Jeffers used to say about the Learning [Research] Group was whenever we were looking to hire someone, that pretty much anybody can learn how to program, but what we really needed was a string bass. So, that was-- so that let me fit right in. So, you know--

Hsu: What instrument did you play again?

Merry-Shapiro: Trumpet. And so, you know, Alan [Kay] is a great-- an incredible musician and-- like he built his own organ for God's sakes. It's unbelievable. But he-- one of the things he did as our group was forming was teach us all about classical music. And taught us about a lot of other things as well, but that was one of the things that he particularly made sure we knew about. You know, the-- Hermann Hesse-- "The Magister Ludi" book was something he would use as kind of a notion of the importance of music as a way of-- as kind of an assistance to thinking, to how you think. If you're-- if you can play music, that helps you also in your mentation process. Or informs your mentation process, may be a better way to put that.

Hsu: So, did you have any influential or favorite mentors or teachers?

Merry-Shapiro: Well, I think probably the most notable teacher was my high school speech teacher, theater teacher. That's how I got really interested in theater. And he was probably sort of most influential when inspiring me to realize that I should look at-- that it was okay look at, I guess, what you might call full self-expression. So, you know, he took us off to contests and he wrote a one-act play, which I performed in when I was in high school, and I was in plays when I was in high school. And that-- he was the most, I guess, influential. No, there weren't really any other super-influential teachers. I mean, I liked some of my teachers quite a bit but they were nice and I was a disgustingly well-behaved child. So, they liked me probably as well. But no, I don't have any-- I'm trying to think was there anybody in college that really grabbed me. Not really so much. I was just, you know, I was sort of a crazed Democrat at that time. <laughter> In college, I was the co-editor of the college magazine and then I was in the Theater

Department, so I was in plays. But I don't think there's-- I can't say that there's anybody that influenced me in the same way say that Alan influenced me, for instance. So, I, yeah.

Hsu: So, you mentioned you were a crazed Democrat. Were you an activist? Or were you sort of not the nor-- like were most of the people at the school--

Merry-Shapiro: To the extent you could be an activist. You know, I wrote an ar-- I wrote an editorial-- the name of the magazine at Valparaiso was called "The Lighter," and I wrote an article based on Kennedy's speech about "Ask not what your country can do-- ask not what your country can do for you, but what you can do for your country." So, that was kind of my-- where I stood when I was in college. I've since become kind of more what I guess libertarian kind of, although <laughs> right now, I'm doubtful that we know how to govern ourselves in any dimension. But you have to keep hoping, I guess.

Hsu: Yeah. <laughs> So, what years were you in college?

Merry-Shapiro: I was in college between-- I graduated in '61, '57 to '61.

Hsu: Oh, wow, okay.

Merry-Shapiro: A long time ago.

Hsu: Whoa! So, that's--

Merry-Shapiro: It was when Kennedy-- it was when Kennedy was elected.

Hsu: Oh, wow, that's considerably earlier than-- yeah, okay.

Merry-Shapiro: I'm old! You have to realize, I'm old. <laughter> I was born in 1939.

Hsu: Oh, wow. So, then, so what were your plans for work or a career after college?

Merry-Shapiro: What was I going to do with my life? Uh huh.

Hsu: Yeah.

Merry-Shapiro: Yeah. Well, I didn't know. You know, I suppose in some dim way I thought I would try to get into theater. But I was pretty quickly disabused of that. And so, you know, I got to New York and was part of the, you know, pseudo of-- I was never really beat, or I was never really hip, or I was never really any of the things. But I was-- I sniffed around all of that. I worked in the--

Hsu: So--

Merry-Shapiro: Go ahead.

Hsu: No, I was just going to-- oh, you go ahead.

Merry-Shapiro: I worked in a public relations firm for a while when I was in New York. And worked in a-- what else see, I worked in a crazy place that won't make any sense, though. So, it was-- they sold machining parts. But it was just a matter of sustenance, you know?

Hsu: Yeah, okay.

Merry-Shapiro: I'm trying to think. Life really got interesting once I got to California. And I met my husband and we-- I got married out in Los Angeles. And we were married for about five years, I guess, something like that. And--

Hsu: So, how did you go from New York to Los Angeles?

Merry-Shapiro: Well, let's see, in the between there, I also actually went to law school for a year.

Hsu: Oh, really?

Merry-Shapiro: At Valparaiso. Yeah. And actually, I left out an important piece there. I actually-- right after college, I spent a summer out in Tennessee at a pla-- a place called Little Smoky, which is a home that had been built by Harry Price, who was-- it's too much. It's a hard story to tell. But it was a great place to spend a summer and from there I went to Washington, D.C. and that was right after I had graduated, and I spent the summer with a friend in Tennessee and we went to live in D.C. and I managed to get a job at *The Washington Post*. And that was when Kennedy was President. So, that was an extremely exciting time. And I was there long enough to get-- first I was running copy and then I did eventually get to be a reporter. Wrote a lot of obituaries. Eventually, got to write a couple articles. But I really didn't-- I really hated it, and to this day I'm not terribly-- it's not that I write that badly but I really don't like it at all. So, I avoid it as much as I possibly can. And so, I realized I didn't really want to be in the newspaper business. So, I took the LSAT, the lawyer thing, test, and got a scholarship to Valparaiso's Law School. Spent a year at that, and I really enjoyed studying the law, but I was pretty sure I didn't want to practice the law. So, then from there I went to New York.

Hsu: Oh, okay. Okay. So, then how did you decide to move from New York to California?

Merry-Shapiro: Well, basically romance.

Hsu: Oh, okay. <laughter> Yeah, that would do it. <laughter>

Merry-Shapiro: You know, I was young and that was-- it was there to be had and so I mean, New York was also-- it was all happening. This was the '60s and you know, LSD was happening, you know, Vietnam was happening. Lots of, in quotes, "important stuff." And so, I kind of found my way out there and met Don Merry. That's where the Merry comes from actually.

Hsu: Oh.

Merry-Shapiro: My actual maiden name is Mayhew, but because I went to work when I was married-- when I was married to Don is when I went to work at PARC and so everybody knew me as Diana Merry. Don, he and I split up after I was at PARC for, I guess about five years, four-- maybe two or three year-- three or four years, something like that. And but I stayed Diana Merry. I mean, that was such a great last name. Why wouldn't I?

Hsu: Hm. <laughter>

Merry-Shapiro: And now you know we can put on our Christmas cards, "Very Merry-Shapiro Christmas," you know? <laughter> Which is what we do. So, that's how I got there.

Hsu: No, I just find it fascinating that your current name is hyphenated but you still-- part of it is still your former husband's name.

Merry-Shapiro: And that's just the accid-- well, it's just an accident of when I was working at PARC, you know, everybody knew me as Diana Merry. And for me to go back to my previous name would have been, I don't know, just seemed weird, since everybody knew me by that name. And you know, I didn't have that deep attachment to Mayhew. I don't have an un-attachment to it, but I just, you know, and so it, you know, there was no particular animus between Don and I, we just-- it didn't work out.

Hsu: Yeah, yeah. Hm. Could you talk about your first ever experience with computers?

Merry-Shapiro: Yeah, I can try. So, Don worked in aerospace at TRW down in Los Angeles. And he-- I used to-- he was-- they called him an Orbit Mechanic. He was somebody who figured orbits and trajectories and delta Vs and things like that. And--

Hsu: So, this is for the space-- for space?

Merry-Shapiro: Well, it was more for Defense than it--

Hsu: Oh, right.

Merry-Shapiro: It was, I mean, it was kind of both.

Hsu: Okay, so for ballistic missiles and that stuff.

Merry-Shapiro: Yeah, ballistic missiles.

Hsu: Yeah, okay.

Merry-Shapiro: But it was also for putting people out there, but it was more-- satellites as well, getting satellites up.

Hsu: Yeah, okay.

Merry-Shapiro: I think that was kind of mostly what he was involved in. Some of it was so secret that nobody was supposed to know about it. And mostly didn't. But he-- like I became disenchanted with the newspaper and <laughs> other things, he became disenchanted with that being in that business, and so he wanted to become a lawyer. So, that meant I had to become employed. I had not been employed after we were first married. And he got into law school in Santa Clara up near Palo Alto. Santa Clara is I think one-- two towns south, something like that.

Hsu: Yeah, so at Santa Clara University specifically?

Merry-Shapiro: Yeah, Santa Clara University.

Hsu: Yeah, okay, I know the place.

Merry-Shapiro: And so, I had also by the by become confident at speedwriting, which was sort of-- you know, getting a job as a secretary was always an easy thing to do and get-- a way to make money. And so, when I-- thought when I-- when we went up there that that's what I would end up doing, but I did-- I went-- not quite on the back of a matchbook, but close, I went to one of these computer schools. You know, six wee-- eight weeks I think it was. This is when they were the IBM-- it was just before there was 360, but right around that time. And one of the things you did was report generation and one of the things you learned how to do was wire a board, you know, [with] plugs. What did they call that? I don't remember what they called it when you wired basically you did the programming by wiring the back of a circuit board of some sort.

Hsu: Oh, yeah, like a patch <inaudible 00:29:47>.

Merry-Shapiro: I can't remember what they called it. There was a name for it. And the other thing, they were just had-- I think they had one-- they had a 360. What was the thing before the 360? I don't know, I think it was a 360. I'm not absolutely sure. But anyway--

Hsu: 7090 series or 1401 series?

Merry-Shapiro: -- 14-- maybe it was 1401. But the point is is that I learned basic assembly language while I was at that school. And that was incredibly revealing to me as to how computers worked. You know, I mean, I kind of really got-- kind of got the idea. So, I wanted to-- that's what I really wanted to figure out a way to become a programmer. You know? I thought it was not-- I thought it was going to be something much more-- much less mun-- much more mundane than what PARC ended up being. But alas and alack an eight-week wonder school, computer school, doesn't get you a lot of employment even

in those days. And so, I ended up going around interviewing. And so, the reason I was doing this was because we needed to have-- we needed to pay the rent while Don was going to law school.

Hsu: Right, and so you had already moved here since he was at Santa Clara.

Merry-Shapiro: We had, yeah, we had moved north to do this. And we had somewhere with <inaudible 00:31:29> to kind of make this all happen. I mean, it wasn't a super-- it was just-- it was necessary for me to find work. And I didn't have to do it tomorrow, but I had to do it probably in the next month or two or something. It was like that kind of. And so, I went around interviewing for secretarial positions, basically. And I interviewed at Data General. And I interviewed at PARC and I interviewed at one other place that I no longer remember. And when I interviewed at PARC I-- one of the people I talked to was Bob Taylor. And I actually got an offer at both PARC and Data General. And the Data General was a better offer, but I knew that I wanted to be at PARC. I knew there was something really going on there. And so, I was smart enough to know that. And understand that. And I ended up being a secretary for the-- so they had let's see, four labs at PARC. They had General Sciences and Optical Sciences. That was who I was secretary for, the two guys who were the head of those. That's who I was secretary for to start out with, that's where I went. There was Computer Science [Laboratory] and then there was System Science [Laboratory]. System Science is where the Learning [Research] Group was where I eventually ended up. Where I thought I wanted to end up was in the Computer Science group, because Taylor, I was just gaga over-- Taylor was just amazing in my estimation anyway. There was something deeply resonate about. And all the people he had working for him. You know, I mean, he had Bob Flegal and Dick Shoup and [Chuck] Thacker and [Butler] Lampson, I mean, you know, [Ed] McCreight, they were all just amazing people. And Thacker and Lampson had done the, oh, what was it called? The Berkeley--

Hsu: BCC, Berkeley Computer Company?

Merry-Shapiro: Yeah, yeah, the Berkeley Computer Company and they were all hotshots, you know what I mean? <laughs> But they were just-- and they just were so much fun. And you know, it was the '60s. You know, it was actually, I started in '70-- I think it was January of '71. So, it was after the '60s, but it was still very much that kind of feel. You know, we had beanbag chairs and everybody smoked dope and did stuff like-- not everybody did but I mean that was the flavor of the-- that was kind of the ambiance of the society that they had there. And it was just a lot of fun. And I knew I wanted to be a part of that. And so, I assiduously worked for Jerry Lucovsky and John Urbach in the Optical Sciences and General Sciences. And sort of made myself slightly crazy doing that. But mostly I would hang out down in the Computer Science end of the building. This was on Porter Drive, when it was still on Porter Drive. And eventually I got-- had an opportunity, so Bob Taylor basically got-- was required to hire a boss. This is all incredibly ironic. But he-- so he hired-- or they hired, or he was hired, Jerry Elkind was hired to run the Computer Science Lab. Even though in my opinion the Computer Science Lab was all Taylor.

Hsu: Yeah.

Merry-Shapiro: And I would contend that to this day. Jerry was a great guy, and he was very nice to me, and that was where I got to learn about word processing. So, at that time there were these-- what were

they called? They was a name for the things-- they were basically tape-driven editing machines and they were used in legal-- so mainly they were used for legal documents for boiler-- what they called boilerplate. And so, you know, you'd make up a contract and then you could-- it allowed you to type in the name, type in the dates. You know, do various different things programmatically, and then run it. And run it. You might want to run it several times. You know, and it was a-- it was kind of a-- it was kind of a computer, but it was really a Selectric typewriter being run with tape. And there was a version of it that was run from timeshare [computer], which is the version that we had that we started to use in the-- and that's why-- I went to work for Jerry and that's how I got in the Computer Science Lab. And working for Jerry was when I got to use this word processing machinery for creating their documents. And it was connected to a timeshare. And so, you basically could enter-- it was a Selectric typewriter that it was a terminal, it was like a terminal, and it was a Selectric typewriter, and you could enter things, but you could, you know, you could correct things. You didn't have to, you know? So, for the first two years of-- or however long I was there before I got to Jerry's office, you know, every time you typed a paper, it had to be three carbons and if you made a mistake, then you had to start over, sort of. You know, and it was horrible. But so, this Selectric device was just like a godsend. Made a horrible racket. We covered it with an acoustic device, which helped a little. And this-- at that time, I was very close friends, and still am close friends with Adria-- Adrian Payne was her name. She was Taylor's secretary. And so, she and I were sort of across from one another down one-- this was-- by this time, we had-- when I first started with Jerry, we were still in Porter, but we had-- we'd moved up the hill to the building that's kind of across the street from where PARC is today to the new building. It's just across the road from it. And that was the Computer and System Science Lab.

Hsu: Okay.

Merry-Shapiro: They moved into that building and General Sciences--

Hsu: That was Coyote Hill.

Merry-Shapiro: Yes, Coyote Hill. Thank you, that's exactly correct. <laughs> And so, Adrian has changed her name since, so she's Adria now, so I will refer to her as Adria. Where she and I were parked at one end of that Coyote Hill building. And we were pumping out documents for the Computer Science Lab, you know, for Butler [Lampson] and [Dick] Shoup and [Bob] Flegal and playing softball and playing football and <laughs> having just an amazing, amazing time. My PARC experience was just totally incredible from the very beginning. So, anyway that was kind of-- so I got-- so I started in General Sciences and went to Computer Sciences, worked for Jerry [Elkind]. I think I worked for him, I don't know, maybe a couple years, maybe not quite that long. And--

Hsu: What years were those?

Merry-Shapiro: Well, let's-- we'd have to figure it out. It must be, what, '74/'75-- '70-- so I went there in January of '71 and so I don't know when we-- I think we moved to Coyote Hill maybe in '73 or '74? So, around that time. I don't know when I actually went to work for Alan [Kay]. That's something that's knowable. But I just don't remember exactly what the date was. The event that happened is kind of a

good story. So, Alan had noticed-- so he had noticed that going-- when he was-- Social Sci-- the System Sciences Lab was also in that building. And he would come over and I mean, he was as much in the Computer Science as anybody. I mean, Alan is Alan. You know, he's a polymath. He's unbelievable. But you know, and nobody-- those differences were really very wishy-washy for a long time. And he would come by and he would see that we were doing-- I was doing programmatic-like things. Like a programmer might. That was just a thing he noticed.

Hsu: With the timeshare word processor.

Merry-Shapiro: With the timeshare word processor.

Hsu: Yeah.

Merry-Shapiro: But never nothing was ever said. And then so maybe about, I don't know, so this was over a period of probably about a year, maybe a little less, they started to hire interns. People to teach how to program. And when that happened, I said, "You know, I'd really like a chance to do that." You know? "I would really like an opportunity to do that." And so, "Well, okay, maybe we can find somebody." And Alan, so I went-- I don't exactly know how Alan and I got together, but somehow I probably-- I must have talked to him somehow and he said, basically he said, "If you can learn recursion, I'll hire you." So, he personally gave me, I think it was probably three or four lessons in LISP, using LISP to teach me recursion. And I was able to learn recursion. <laughs> And so, he hired me. And that was an incredible unfolding. And I was like a, pardon my expression, a pig in shit. I just thought this was the most incredible thing. And I was just really taken with all the stuff that was going on-- stuff that Flegel and Shoup were doing in graphics. When I first went to work for Alan, there were no Altos, so we had the Data General machines, Novas. And one of them was connected to a character generator, which kind of was the way you could do bitmap graphics, was you could write to that generator and that's the first-- like the first Cookie Monsters [images] you may have seen, or somebody may have talked about, I'm pretty sure were done on the character generator. And that's where I wrote my first character scanning programs, on that Data General. And because I had to share it with-- mainly I had to share it with Duvall-- what was Duvall's first name?

Hsu: Bill.

Merry-Shapiro: Bill? Bill Duvall. Yeah. Bill Duvall, who was the NLS guy. And so he was the hotshot, and I was just learning, basically, Data General machine language. So the first thing I did was this ROM blowing program. And that was on a Nova as well. And that was-- they needed to blow ROMs, I guess, during the-- I don't know exactly. What were they doing? I guess it must have been while they were building the first Altos. No, no, it was while they were doing the multi-access-- the MAXC.

Hsu: Oh, MAXC, okay. That's '71.

Merry-Shapiro: No. Well that was-- it wasn't built in '71, I don't think. It was proposed in '71.

Hsu: Oh, okay. So it was built later.

Merry-Shapiro: Well, no. It just took a while to put it together. I mean, they were building, basically, a mainframe computer from scratch. Because they had to-- they wanted to buy Sigmas. I mean, sorry, they wanted to buy..

Hsu: PDP-10s, yeah.

Merry-Shapiro: PDP-10s. Yeah. PDP-10s. Right. But they wouldn't let them buy PDP-10s, so they built a PDP-10, basically. And I think the program that I wrote was for the purposes of blowing ROMs. So a ROM, basically, is a program to write programs. I mean, to write a program on a chip.

Hsu: Right. By blowing, what do you mean by blowing?

Merry-Shapiro: Well, so you take-- programming. So you burn the circuits. I believe that's what it must mean.

Hsu: Oh, okay.

Merry-Shapiro: You actually..

Hsu: Oh, okay. Okay.

Merry-Shapiro: We called it a ROM blower. I mean, there must've been some very simple circuits that you could take a chip that was virginal somehow and program it, like, once.

Hsu: Oh, okay. Okay. So it's basically writing the ROM.

Merry-Shapiro: Yeah, it's writing it. Well, we called it blowing out. I don't know why they did do that, but they did. That's what they called it. And I mean, I didn't really understand terribly much what I was doing, but I knew enough how to create images, basically, or numbers. Create numbers in certain places. But I was way out of my league, but I'm a fairly clever-- fairly clever clogs, and so I did it okay. I succeeded at that. But I was very happy to get to go to the Nova and start writing machine code on the Nova for the character generation. And that was-- the whole purpose behind that was for programming the Alto, eventually. I mean, the reason for learning how to do character scanning was because we needed a character scanner when the Alto got built. And so that was-- even before Smalltalk, that was what I was involved in. And this was around the time when Dan [Ingalls] and Ted [Kaehler] were there, and Dan had written a very early version of [the] Smalltalk interpreter. And so now, I want to-- I do want to say-- I want to be very careful about this. I may tell you some lies, because I don't-- but it's not because I'm intentionally telling you lies. It's because I'm not remembering accurately.

Hsu: Sure.

Merry-Shapiro: So please, anybody who wants to fact-check, please fact-check me, and I will not be insulted in any way. Just I mean, all of us did lots of stuff, and I mean, as far as I was concerned, as time unfolded, Alan was our pied piper. I mean, he was just an amazing mind. And Dan was an incredible programming artist. And he was just really-- I mean, he was way more than just a programmer. He was an incredible realizer of Alan's ideas. And the rest of us were lucky to be around, and got to play. It was quite an amazing unfolding. The first few years especially were just so exciting, but intense. We worked long, long hours. I mean, it didn't feel like work. I mean, it was just so much fun that all you'd-- I mean, I came in in the middle of the night in order to get the character generator, because that's when Duvall was off. And that would be the only time I would get to have it. And I was very willing to do that. To just come in and get it when I could. And that was kind of true with the early Altos as well. Everybody-- I mean, it was a big deal when you got your own Alto. So let's see, I'm trying to-- so anyway, I sort of went from being a secretary there, and then kind of looking like a programmer, and then getting to be a programmer.

Hsu: So what was the first thing that you wrote for the Alto, or in Smalltalk?

Merry-Shapiro: In Smalltalk? So, well, the first thing I wrote in Smalltalk was the code editor, the Smalltalk code editor. Which was a-- I mean, it's really a text editor. It has more stuff behind it in order to control some execution, but largely it was just-- it was basically getting characters up on the screen in a readable sequence. And that was one of the first things you have to do in order to have a computer is you have to be able to see what you're doing. So that was a big piece, just to get that working. And that included-- so then very soon after that, that included mouse location, following-- figuring out where the mouse was. So putting characters on the screen is a lot about finding a position in an X,Y graph. I mean, the screen was like-- we addressed it as a-- there's got to be a mathematical way to say this, and I don't remember exactly how you do it, but when you have a place where the origin is-- it has an X origin and a Y origin, what is that called? It's like graph paper, but it's not..

Hsu: Cartesian.

Merry-Shapiro: Cartesian coordinates. That's it. Thank you. I'm a theater major. But I was good at it. I got characters to go up, and one of the very important things that-- in the very early-- so the very first part of when Alto first came up, the characters were put up on a-- what the-- it had a special mechanism, a special hardware, basically, for getting the characters up. It was line by line. And so it wasn't really bitmap-oriented. So you wrote the characters into this special piece of memory, line-by-line, and then you would advance the line. And that was the first thing I really did with the Alto was to get that working. But once the Alto was there, we knew that we wanted to have a-- we wanted the graphics to be bitmap. Because just the versatility, what you can do with a bitmap is awesome. I mean, to this day, it's awesome. A bitmap in two and a half dimensions, in color, is a lot more complicated than two dimensions on a black-and-white display. But it's kind of still the same thing. And that all started in that place. And that's-- from there, you can do things. One of the things that I always thought was just an incredible thing to realize was how much-- this is really changing the subject, kind of, but so early on, one of the things I had to learn was binary arithmetic, basically, and then octal arithmetic. And one of the things that just always blew me away was with only ones and zeros, you can imagine the world. You can imagine a Wikipedia. You can imagine an internet. Ones and zeros. All that meaning is down there in those switches. And it's

just awesome to me that we have enough wisdom to be able to put that together. And luck, I guess. I think there's probably some luck in that as well. So it's kind of humbling, when you look at your devices. All that's down there are switches. And we are able to give it meaning, very complicated, complex meaning, and even surprise ourselves with what we're able to-- the meaning we're able to give it. But for anybody to think that something as complicated as an encyclopedia could come out of a collection of ones and zeros is a pretty big jump. I also used to think of it as lightbulbs on and off.

Hsu: So you mentioned working on the text-drawing code, right?

Merry-Shapiro: Yeah.

Hsu: So I remember, I read Dan's BitBLT article in Byte, and I think it mentioned that BitBLT was sort of a way to unify your text-drawing code with other code that was drawing other things, like other graphics. So your code was somewhat of a precursor to BitBLT in some way.

Merry-Shapiro: Yeah. I actually-- the initial BitBLT coding, actually, I did. I did it, with Dan's inspiration. I mean, I don't want to take any real credit for all of it, but I get a little credit for it. So I actually wrote that code in machine language to begin with. So let me give you-- I can give you a general..

Hsu: Data General machine language? Or was it in the..

Merry-Shapiro: Yeah. Yes, the Data [General] machine. Our machine language-- no, the Alto machine language was the Data General. It was the same. We incorporated their..

Hsu: Instruction set?

Merry-Shapiro: Instruction set, right.

Hsu: But then there was also the microcode as well.

Merry-Shapiro: Okay. I'm going to give you a little go here. Chuck Thacker wrote most of the microcode in the beginning. He and McCreight, probably, and some other people, probably. But Thacker did a lot of it. And he wrote a piece of microcode called CONVERT. CONVERT was a specialized BLT-- it was block transfer algorithm, which basically you had memory that had a font in it-- had the bits of a font, and the scan converter-- I mean, CONVERT-- you would basically give CONVERT the address of the font, and the address that you wanted the-- the address of the font, the address of the character, and the address that you wanted the character to go to. So you would calculate all those addresses and say execute, more or less. Say CONVERT. I mean, if you squint right, that's kind of a BLT. I mean, that's kind of a BitBLT, but the characters are all stored on word boundaries. Okay? So one of the-- and so BitBLT came up. I can tell you the story. We were walking down the hall one day, and we were talking about blitting stuff. And the block transfer was a lot of-- you did a lot of things with block transfer on the Alto, just to move stuff around. Lots of stuff off and on the screen, but not even always on the screen. Sometimes you wanted to move a block of code from, say, from memory to a file buffer, or from a file buffer to memory or

those kinds of things. And so block transfer was a common Data General routine. And we were walking home from lunch one time, and we were talking about it, and I'm going to take-- as you say, you can fact-check me on all of this. But my recollection is we were walking down the hall and I said, "What we need is a BitBLT from a bit boundary to a bit boundary, instead of from a word boundary to a word boundary." So block transfer was a word boundary to a word boundary. What we needed was going from a bit boundary to a bit boundary. So I mean, what that came down to was being this bit in this word to this bit in this word. Okay? And then to generalize that, you say, "Starting at this bit, for this many bits, move it to this bit." And this many bits was what was called the raster, the whip. Does that kind of make sense a little bit?

Hsu: It does, yeah.

Merry-Shapiro: So we decided we would do that. And this was before-- so it was not in microcode in the beginning. It was in [Nova] machine language.

Hsu: And that's the part that you wrote?

Merry-Shapiro: That was the part I wrote, was the machine language part. Dan was the one who made into microcode. And that was much later. It was after-- I don't think we put BitBLT into microcode until we moved over to the PARC building. The other building, across from Coyote. So we..

Hsu: Dan writes that, I think, that didn't happen until Smalltalk '74, so it was at least 1974.

Merry-Shapiro: Yeah.

Hsu: So you're saying that this earlier, machine-coded version of BitBLT was-- when was that done?

Merry-Shapiro: Well, before 1974.

Hsu: '73, or..?

Merry-Shapiro: Yeah, it was done pretty early, because we-- it ran on the machine code for a while. For probably about a year at least. I don't know the time back then, I'm trying to remember how much time passed. It's a little tricky, because it's funny, we never worked on deadlines or-- I mean, we just did things as fast as we could do them, sort of. And working as hard as we did and playing as hard as we did, and it didn't feel like there was this-- I mean, eventually, as things got more-- what's the word for-- bureaucratic. As things got a little more bureaucratic, Xerox wanted to know what they were getting for their money, it became trickier. But in the very beginning, it was very much free-range. So anyway, that's BitBLT. I think Dan would agree with that, but you might want to check. That's more or less what it was like. But he was the one that did the microcode, and that was transformative. I mean, that really-- that allowed us to do all kinds of graphics that we had only just kind of begin-- that was much, much harder to do until we had BitBLT. Because you could basically do all the kinds of logical transformations, OR-ing and XOR-ing and reversing, and just a million things that you could do as a BitBLT operation. And that was just-- I mean,

having that in microcode just made a huge amount of difference. And it also helped-- and you can get more of this from people like Ted and Dan, it helped with other parts of the-- other areas of programming as well, having that kind of functionality. That very handy capacity to move arbitrary blocks of memory from one place to another. I mean, what BitBLT is is basically moving arbitrary parts of memory from one place to another, and possibly doing a transformation on the way.

Hsu: So was it the speed of the micro-coded version that was transformative?

Merry-Shapiro: Yes. Yeah. I mean, it made animation, for instance, much more real, so to speak.

Hsu: Yeah. And so could you talk about some other things that you worked on in Smalltalk?

Merry-Shapiro: Well, okay. So I did a lot of the overlapping windows. That was something that I was-- I did a lot of the early implementation of that. I mean, all of this was really kind of under the tutelage of people who were much smarter than I, but I did the grunt work. I did the actual doing of it. So we did that, and we-- so that included-- so there's a lot of graphics associated with, like, putting a browser together. That's different from putting a piece of prose together on a page. You need lists and you need scroll bars and all that kinds of mechanism was part of what I did a lot of-- many pieces of that.

Hsu: Yeah, so this is the hierarchical class browser that Larry Tesler came up with?

Merry-Shapiro: Yes. Yes. We had text editing well before that, but we didn't have that particular browsing idea. That was Larry's idea. But we had all kinds of graphics that we would do, which was basically being able-- so making a brush out of a circular collection of bits and brushing it across the screen to make gray and to make shapes, to make a Cookie Monster. Let's see, what else did we do? So I did that. So I was kind of the text person. Flegal was kind of the graphics person. Other people were graphics people too, but I was also part of that. And other people were doing-- trying to figure out how to do-- I mean, figuring out how just to do Smalltalk. How to do object-oriented programming. That was all going on while I was kind of playing around with all the-- how it looked. Let's see, so I built a lot of the browsers based on Larry's-- I mean, I guess I would say I enhanced them, because I think he actually built the first one. And then when we decided to do Smalltalk-80, so up until that time-- so I had always been, still, doing machine code for-- so you still needed machine code. You had to call BitBLT, so you still needed machine code to basically get characters up and all that. You did call BitBLT, but you called it for machine code. You didn't call it-- there was also a way of calling it from Smalltalk, eventually. But in the beginning, it was more like-- I mean, the routines that allowed you to put characters on the screen and allowed you to discover where the mouse was, to move the cursor, those were all machine language routines. And I wrote many of those. Or some of those, or a lot. So the first really big Smalltalk thing I did was the character scanners. So there's a whole set of Smalltalk routines called the composition scanner, the display scanner and the character scanner. And the composition scanners were basically composing lines. So taking a line of textual material and making it into something you put on the display. So something that's stored as text, you take that text and you put it-- display it. And that was-- so you compose it, and that's a print notion. You have a compositor. And you display it, and then you need to find-- put a cursor in it. So that was what a character scanner was for, was kind of marching through and

measuring each one. Giving you back X,Y locations. And that was a pretty significant piece of the Smalltalk textual display code that probably is still in there to this day at some level. Certainly the last time I was around it, it was still around. It was definitely in Squeak when Squeak first came out, because Squeak was-- I always said Squeak was the real Smalltalk. And then the other thing that I did that was sort of notable, I guess, is the galley editor. So that was a big project, I guess..

Hsu: Can you explain what a galley editor is?

Merry-Shapiro: Yeah, I will. That was kind of my last hurrah. So that-- let's see, how can I explain this? So when you do publishing, one of the things, often, that is your first product is called a galley. You've heard of the phrase, "Getting the galleys back." So when you're publishing a magazine, you often will get galley print. Basically rough prints of what's going to go into the magazine. And oftentimes, those galleys will be actually so rudimentary that they're basically just arranged into-- well, let's say you're putting together a magazine. So you might arrange the article for the magazine in this big, long column of text. Which, when you actually paste up the magazine, you would call pasting that up, and then you take a picture of that, and then you print it. And that's how publishing works. I mean, it's slightly oversimplified, but that's about how it is. So when I called it a galley editor, I did that because I wanted to-- it was an attempt at humility, because it obviously wasn't a full-blown text-- well, it ended up pretty much being a full-blown text graphics editor-- a full-blown page composition editor. But it was basically presented to the user as a long galley of paragraphs, just like Word. It would be pretty much like being in Word today. In fact, the run codes that-- oh, that was another thing we did that I didn't talk about very much. So one of the things we did when we made-- so okay, so I did the scanners, but I also did the thing called the paragraph editor. That was very much-- I did that. Also, Dan did a lot of that, but I also did a lot of that. And so doing the paragraph editor meant you needed-- so you would-- part of composition produced a thing called text lines. So we were very object-oriented in those days, and we tried to make everything an object, down to a character. They were all objects. And so when you composed a group of characters, you would compose it into lines. That required measuring each character to a certain width, breaking the line, and making the next line. And any time you'd, say, would delete something or add something, you had to recompose it. And there are ways to try to optimize that so that you didn't have to do the whole thing over, although in the beginning, that's what we did. And that was a paragraph editor, and there was-- so then there was a thing called the paragraph, which was a collection of characters, basically, with run codes eventually. This didn't all happen at once, but eventually there were run codes so that you could have-- you could make bold or italic or underline or superscript or subscript. That was all..

Hsu: So by run code, you mean the-- specify this area to this area, that's bold.

Merry-Shapiro: Yeah, specify the bold, all the stuff you see. So we also did all that. I did much of that. But the galley editor was sort of taking that one step further and basically being able to make collections of paragraphs and pictures, putting it all together and making a document out of it. So we could have called it a document editor, but I was-- it was a first cut. And so it was like I didn't want to say I-- I didn't want to promise more than I could deliver. I think I kind of delivered more than I could promise-- I promised. But I mean, it turned out okay. It turned out pretty good. But it was called the galley editor because of that notion of making galleys.

Hsu: Right. So today, we would call it a page layout?

Merry-Shapiro: I believe you would, yes. You would call it more like-- it would-- it's more like Quark than-- yeah. Because it really did have integrated text and graphics and layout. And then the graphical-- one of the things that worked out with getting text into the graphics, so you wanted to put-- like you wanted to put a little label inside of a piece of graphic-- a bitmap. So you had to write code to figure out how to do that. That was kind of a big deal, especially like making textual material that would go on an arc, and things like-- this sort of relates a little bit to-- you remember [Adobe] Illustrator? And so following paths.

Hsu: Okay, curves. Yeah.

Merry-Shapiro: Yeah. But I mean, all of it seemed like we're just putting bits on the screen, folks. And I mean, one of the things that I think is worth saying is that when I was doing all of the character stuff, the model that I had for it was, this doesn't really have to do with anything that means anything. This is just-- glyphs are just a bunch of little pictures that are put in an ordered way. And it was very useful to think about it that way, because it demystified it quite a bit. Obviously, as I noted earlier, you can look at it the other way, that out of ones and zeros we can get all this incredible meaning. And I suppose you would even say dangerous meaning. That's what people are saying today. So certainly when we were doing all this, we had no idea that people would get so excited about being able to see things quickly, but they are. So anyway, so I did that. So the galley editor was kind of the last big thing that I did before I left PARC. The..

Hsu: You mentioned...

Merry-Shapiro: Yeah, go ahead. That's it. I didn't have any more to say, really.

Hsu: Okay. So before we move on, I think you mentioned-- it seemed like you worked on a lot of the graphical user interface elements of Smalltalk.

Merry-Shapiro: Yes.

Hsu: Like the browser and the overlapping windows and text drawing.

Merry-Shapiro: Yeah.

Hsu: Yeah, could you just maybe speak more about the fact that this sort of was a pretty new thing that you were doing? That you were the implementer of a lot of that.

Merry-Shapiro: Yeah. Well, so it's sort of one of these things, if I'm so smart, why ain't I rich? So it's sort of funny, so [Charles] Simonyi was doing all this stuff-- Simonyi and Lampson were doing Word, basically, Bravo. And they were doing-- so one of the things about Smalltalk was that it was always alive. It was always-- you were always in the middle of it, sort of. You were never going off to a text editor, compiling and loading and executing. You were always right there. It was, as Butler pointed out, it was glacial in

terms of sometimes the speed that it did it, but it was always interactive and immediate. And so making things that had that kind of aliveness to it, that consciousness to it-- that's kind of maybe a little bit too much to say about it, but there was a notion that everything was available to you all the time. And I think Smalltalk, that was-- we succeeded pretty well in getting that feel and getting that-- having that experience for people. I think that the value of that was somewhat lost. That that aliveness, that immediacy, how beneficial that is in terms of how you think about problem-solving, how you solve something. If you have to wait for something to go through this big process before you see your result, if you have that-- if that's the way you have to do your mentation and do your thinking and do your planning, it's a very different feel than if you can kind of just incrementally put something together and see if it's working incrementally. And so building all these things, it was like-- I mean, it was sort of funny sometimes, because we'd be building a browser, and you were browsing in a browser that you were building the browser, and so you could really screw yourself. I mean, you could-- sometimes it's very tricky when you wanted to be very careful. On the other hand, it allowed Dan to make these very incredible-- show these very incredible demos where he would change highlighting right in front of your very eyes. But it never-- so one of the things that really sort of was interesting to me when I got out into the rest of the world was people talked about applications. And we never talked about-- that was never a word that we used when I was at PARC, because it was just a piece of programming. So there was a paragraph editor, there was a text editor, there was a graphic-- there was animation. There was chat. There was email. There was all kinds of stuff, but it was just another window you went into and did some stuff. But it was all Smalltalk, it was all if you wanted to change how it looked, or how it worked, or screw yourself, you could. It went down so far, to me, this was an incredibly important piece of Smalltalk, to me, was it-- so when you have a edit, compile, load, run cycle, it's very different. The solution space is very different than if you can just type it in and run it.

<pause in thought>

Merry-Shapiro: You can run it in very small increments. You can see is that-- did that-- these little-- when Dan made that change, that was like a teeny little change, but it had a dramatic effect. I mean, in the abstract, that's a pretty large solution space that you can think about highlighting something, putting emphasis on something, and have a very powerful effect in a very short amount of-- with a very short amount of interaction. For me, I always used to say that Smalltalk, one of the main things that was really good about Smalltalk is that you increase the solution space, the kinds of problems you can imagine solving got bigger because you didn't have to worry about how it was going to execute. I don't know if that <laughs>--

Hsu: No.

Merry-Shapiro: -tracks or not, but it was very important to me. So, for instance, I hated C++ because you're over here, and then it takes it forever to get from over here to over here. That just seemed wrong to me. Just a different way of thinking about it. Some of this I think has to do with what got to be called object-oriented programming, and that was certainly one of Alan's really important big ideas. I don't know, that was a very big thing for me, certainly made-- I mean, it made it much easier for me to be a part of the whole adventure, because I didn't really have to be a mathematician. I just had to be clever.

Hsu: Right. Well, I mean-- I mean, that was part of the vision of Smalltalk in the first place, right? Was that, you know, it allowed--

Merry-Shapiro: Yes.

Hsu: -anyone to be a programmer, right?

Merry-Shapiro: Yes.

Hsu: And for Alan to sort of promote you out of a secretarial position into a programmer position was-- showed kind of what Smalltalk was all about.

Merry-Shapiro: Yeah, I certainly would agree with that. That was one of the reasons why it needed to be readable, why you wanted to-- when somebody read the program, it kind of made sense what it was doing. We didn't succeed in all-- every time we-- in all of the dimensions that one might think about that, but we succeeded in a lot of it. At least I think so. I think a lot of that's kind of been lost in the way we deal with computation now. But I don't know what to say about that, quite.

<pause in thought>

Merry-Shapiro: I don't know. It seems sad to me that what we've ended up kind of coming to with computation has had many kind of ill effects. The other thing is we've gotten so clever that...

<pause in thought>

Merry-Shapiro: You don't need programming anymore, really. I mean, we're getting so clever that we won't. If things keep going the way they are in artificial intelligence, and in the sophistication, you'll simply say what you want, and it will do it. Thinking about how it's done will be kind of at a very high level. Or maybe that's a good thing, I don't-- one can argue either way. The...

<pause in thought>

Merry-Shapiro: Certainly, a lot of the art that went into what we were up to has, I think, been lost. I mean, Dan is one of the most amazing creators of computer product that I've ever seen, but he was-- in addition to being incredibly technically smart and clever, he was also an artist. There was feeling in what he did, and that was true for me, too. It's important that it felt cool, it felt good. I don't know if everybody in the group would share that with me, but that's certainly how I felt, and how I felt about both Alan and Dan. I mean, in addition to being incredibly-- I mean, Alan's probably the brightest person I've ever known, but he's also an incredibly-- has an incredible aesthetic, a very subtle aesthetic.

Hsu: Yeah.

<pause in thought>

Hsu: You know, you've mentioned, you know, several of the things that you worked on were kind of quasi collaborations with Dan. Could you talk about, you know, just collaborating with other members of the group, and if you collaborated with other people, as well?

Merry-Shapiro: Let's see. So I worked with Ted, but I'm trying to-- I don't remember exactly what-- I worked with Ted a little bit on memory stuff, but it was mostly me kind of sitting <laughs> watching what he was doing, because I wasn't-- he was way more clever about it than I was. But Ted ended up-- he and Glenn Krasner did several-- I think several memory management things. But one of them was called LOOM, the Large Object-Oriented Memory, which was, I think, pretty transformative. So for a long time, we were confined to this small amount of memory, and that was kind of all we had. A third of that, or half of that was devoted to the display, so what you could do in that amount of space was amazing but was limited. So getting a virtual memory to happen was a big deal. I didn't have much technically to do with that, but I certainly made use of it when it happened. So who else did I-- you know? So I also wrote-- I forgot, totally forgot about this. I wrote a...

<pause in thought>

Merry-Shapiro: A character editor, Strike, a font editor, in Smalltalk. So this was also actually something I kind of did, was what they called the Strike font. So instead of storing the fonts like a character per word, you basically stored it just as a string of bits, and with a table that told you how wide each one was. That made sense when we got BitBLT working. So instead of having to put in word addresses and everything, you just said it's this-- B is at this bit, C is at this bit, and it's this wide, and it all starts at this origin. So one of the things that was nice about it is you could actually put it up on the screen and see all the characters. You know what a strike is? A strike, when you see-- so you go to a printshop and you see the characters printed out, all the characters of a font printed out, that's called the strike of a font. We called it that because that was-- it was related to that. That was my creation, I forgot about that. <laughs>

<pause in thought>

Merry-Shapiro: So I did a lot of stuff with Flegal, we created-- you remember the pictures of Smalltalk when it had this lovely curvy font? Called it the Cream font.

Hsu: Oh, I think so. It-- it's a little bit like the Venice font on the Mac? It has, like, these--

Merry-Shapiro: It sort of looks like calligraphy, it almost looks like--

Hsu: Yeah. Right--

Merry-Shapiro: Yeah, alright--

Hsu: -okay--

Merry-Shapiro: -yes.

Hsu: -I think I know that, yeah.

Merry-Shapiro: So Flegal and I did that. I made the font editor so we could make that font. So I did a fair amount of stuff with Flegal on the graphics, doing bitmap stuff, Paint-like-- we had a Paint-like program, so you had brushes which were basically little bitmaps of different shapes that you could draw across the screen, you make pictures and...

<pause in thought>

Merry-Shapiro: Illustrations of some sort. Or for animations as well. I did do along the way...

<pause in thought>

Merry-Shapiro: Implemented the animation. Why did I do that? How did I do that? I can't remember, but I did-- I don't know, I can't remember. We had to port animation from something into our-- so before-- so animation ended up being mostly, I think, microcode, but there was an interim period where it was machine code, and I did part of that. So I had my fingers in a lot of stuff, I just did what I was able to do, what I could do, and what they would let me do, <laughs> and what they wanted me to do. There was always plenty for everybody to do, it seemed like, but it was never all that formal. I mean, it got more that way later, but it wasn't in the beginning. Let's see, is there anything else? I'm trying to think of all the stuff. Important pieces, we played music, we played softball. I don't know, was I the only-- no, I wasn't the only person. I think Dave Robson also played softball. So I had been a pretty good athlete when I was in high school, so that played well. <laughs> Taylor liked that. I could catch a football, that was good. <laughter>

<pause in thought>

Merry-Shapiro: It was an amazing adventure. The whole PARC adventure was just unbelievable.

Hsu: Yeah. Oh, one thing I remembered, so I know there was-- there was that "Things Kids Do" video with the kids in the lab, and I think you're the narrator on that--

Merry-Shapiro: Yes--

Hsu: -video?

Merry-Shapiro: -I am the narrator. Because I sort of said "Look, I'm a theater major, I get to do the narration." <laughter> That's how that happened, it was-- I sort of put my foot down and said "I should do this." Yeah, so I did that. Adele did all the scriptwriting and everything, but...

<pause in thought>

Merry-Shapiro: It's my dulcet tones.

Hsu: Yeah. <laughter> So you mentioned the galley editor was your last hurrah. That was the-- so that was the last thing you wrote as part of the group?

Merry-Shapiro: Yeah. So I left PARC sort of right before ParcPlace, Parc...

Hsu: ParcPlace?

Merry-Shapiro: Yeah, what was--

Hsu: The spinout?

Merry-Shapiro: Yeah, the business. What was it called? ParcPlace, was it?

Hsu: Yeah, it was called-- it was called ParcPlace, yes.

Merry-Shapiro: Yeah, okay.

Hsu: So that was in the '80s, that was '80--

Merry-Shapiro: Yeah, '86. I was there until '86.

Hsu: Okay, wow, that's quite a while, a while--

Merry-Shapiro: Yeah, it was--

Hsu: -the others had already left?

Merry-Shapiro: -15 years. I was there 15 years. A little over 15 years, and then I was sort of bereft for a while, and then I met Carol, my spouse, which was even more incredible than PARC. We came back to New York where I went to work for J.P. Morgan and had a whole another incredible adventure making a program called Kapital. So we all thought that Smalltalk was for children and it's probably regrettable that it didn't stay that way, but it became very useful for programming financial things as well. So I did a lot of the graphics for this program at J.P. Morgan called Kapital.

Hsu: So you met Carol in what year?

Merry-Shapiro: I met her in...

<pause in thought>

Merry-Shapiro: '86, November of '86. We've been together over thirty-five years. It's unbelievable. It's unbelievable to me that all this happened over <laughs> thirty-five years ago. <laughter> It was a huge piece of my life. It was also 15 years of my life.

<pause in thought>

Merry-Shapiro: The J.P. Morgan experience was 12 more years of my life, so I've been a Smalltalk gunslinger for a long time.

Hsu: Yeah, yeah. <laughs> So was it-- so it was-- how did that whole Morgan thing happen? So, like, you had been in California, how did you end up finding that position at Morgan--

Merry-Shapiro: Okay, so here's--

Hsu: -and moving to New York?

Merry-Shapiro: -how that happened. So I was away, I was sort of out of PARC, and I met Carol. Carol was the friend of a friend of mine, of, actually, a friend-- I was part of a women's group that Adria [ph?] was a part of, and this friend was also a part of, and Carol was a friend of hers, and they invited me over to meet her when she was out from California, and we--

Hsu: Was this a professional women's group? Like--

Merry-Shapiro: No, it was a--

Hsu: -or just more a social group?

Merry-Shapiro: Yeah, consciousness-raising group. <laughs> I don't know. You know how we used to have-- what did we call them, when we would get together and-- I don't know. Talk about how terrible everybody was, and how hard it was, and I don't know. It was kind of a righteous thing, but in any event, it was our women's group, and we thought we were pretty cool stuff. Anyway, so I met-- so Carol was this friend that they had gone to college together. She was out visiting, and I went over to meet her, and it was just an instant connection. I was not particularly lesbian or anything, that was-- that's not particularly an important piece of our relationship. I mean, it obviously is the reality, but it's not the nature of it, really, and--

Hsu: Did-- is that something that you discovered at the time, or did--

Merry-Shapiro: Yeah, that's kind--

Hsu: Was that something you've known about--

Merry-Shapiro: -of pretty much--

Hsu: -your-- yeah.

Merry-Shapiro: No, yeah. Well, no, I mean, we just connected as people, as beings, as human beings. So it was a mad love affair and so I-- she moved out pretty quickly to live with me out there. I was still living in Palo Alto, and...

<pause in thought>

Merry-Shapiro: Eventually I had to find work, and so I got a job at Apple doing testing on their Smalltalk.

<pause in thought>

Merry-Shapiro: So remember I told you that it was pretty horrible when I went to work and was being a secretary and typing papers for the physicists and the optical scientists? When I went to work at Apple, one of the first things I had to do was read that huge manual. Do you remember that? It was basically all the routines, all the machine language routines.

Hsu: Oh, Inside Macintosh? Is that what--

Merry-Shapiro: Yeah. It's unbelievable. It was an unbelievable-- <laughs> horrible thing to do to a person. Anyway, I did that, but I was mainly there because they had this version of-- so Apple had a version of Smalltalk which was one of the experimental versions that got out when we released Smalltalk-80. Apple got one, I think DEC got one, Texas Instruments--

Hsu: Tektronik-- Tektronix?

Merry-Shapiro: Tektronix got one.

Hsu: Yeah. HP had--

Merry-Shapiro: HP--

Hsu: -one?

Merry-Shapiro: -I guess.

Hsu: Yeah.

Merry-Shapiro: Yeah, I think they did. Anyway, so I was there, I went to Apple to sort of do some testing on that. That's how I got to Apple, and so I eventually ended up working in their research lab working on-- oh, what was it called? We were doing stuff working with Roget's Thesaurus, working on, well, basically, kind of trying to understand. How do you understand language? One way you can think about understanding language is going through a thesaurus. So the thesaurus is a collection of words that have similar meanings, so that was kind of the idea behind it. I did that for a while, and eventually...

<pause in thought>

Merry-Shapiro: We wanted to move from Palo Alto to San Francisco, so I got a job with American Airlines, of all places, where they had a research group in the city, and they had-- they were using Smalltalk, using the Smalltalk that ParcPlace was selling. So that was right up my alley, so I ended up writing a program-- basically a Draw-like program which would display-- what are they called? The diagrams that you make for relational databases.

Hsu: Oh--

Merry-Shapiro: Relational diagrams, the--

Hsu: Yeah.

Merry-Shapiro: You've seen pictures of all--

Hsu: Yeah.

Merry-Shapiro: -lots of arrows, and pointers, and thingies like that.

Hsu: Entity something?

Merry-Shapiro: Yeah, entity-- yes, that's right, entity something relationship something. Anyway, it was a lot like MacDraw, basically, and I did a big program in Smalltalk for American Airlines. That group got acquired by Teradata, and Teradata, eventually, got acquired by NCR, and they wanted me to move to Cleveland. I didn't want to move to Cleveland, so that was the end of that, but that was about, I think, a couple years. That was interesting, I learned a lot, and...

<pause in thought>

Merry-Shapiro: But then I was out of work because I didn't want to move to Cleveland, and so I got this-- so I was looking for something, and this recruiter called me and wanted to know if I'd be interested in going to New York, where they were doing financial programming in Smalltalk, and they needed Smalltalkers. I said "Well, gee, I don't know." But then they were offering obscene amounts of money at the time. <laughter> So we--

Hsu: What year was that?

Merry-Shapiro: So let's think about this. When was that? That must be...

<pause in thought>

Merry-Shapiro: Oh yeah, '90, '91, I think, was-- '91 was when I came out here, '91. I'm pretty sure it was '91. I...

<pause in thought>

Merry-Shapiro: So J.P. Morgan, I had an interview with a guy by the name of Derek Penn, who was an incredibly clever fellow, and a finance person. They were going to build this financial programming tool in Smalltalk, using Smalltalk, and this was on NeXT machines at the time, can you imagine?

Hsu: Oh, really?

Merry-Shapiro: Yeah. The NeXT machines were very cool. That fell through, we eventually ended up on Sun machines using Unix, but we all loved the NeXT machines.

<pause in thought>

Merry-Shapiro: Then we built this big financial trading program called-- and we pulling-- we were-- this was also another kind of hotshot group, skunkworks kind of group, and so we ended up making this program and when it came time to start having people use it, we didn't-- they wanted to know what to call it. Being J.P. Morgan, we thought it would be a great joke if we called it Kapital. <laughter> The way you would launch it on Unix was with DOS, DOS Kapital. <laughter> In the--

Hsu: So it's Kapital with a K?

Merry-Shapiro: With a K.

Hsu: The German spelling?

Merry-Shapiro: In the very--

Hsu: Yeah, okay.

Merry-Shapiro: -very beginning it had a-- one of the-- the picture that came up was of Karl Marx. That didn't last long, but we did do that. That was a lot of fun, and Derek Penn was an incredibly clever fellow. He was the one who ran the group. So I went out there with-- Axel Kramer and I went out kind of together. I got to know Axel while I was in San Francisco, and so I did a lot of the graphics for Kapital. The reason I mentioned that came to mind was do you remember HotDraw? Which was another kind of relational mechanism where you draw lines between objects. Maybe you don't remember that, but anyway--

Hsu: No.

Merry-Shapiro: -there was a thing called HotDraw. I built a thing called Blob Draw, which was basically you take an object and drop it on this-- drop it in the screen. It builds a little graphic, a little, basically, list

of the variables in that object. Then you can take another object and drop it on the screen, and if there's a relationship between those two objects, it'll draw lines between the pointers and the object. So it was a way of visualizing programming issues, and Kapital made J.P. Morgan lots and lots of money, and I was there for--

Hsu: I'm surprised they kept the name.

Merry-Shapiro: Yeah, they played along. They kind of had to agree. I mean, they didn't play along very much with the Marx part of it, but they are capitalists. <laughter>

Merry-Shapiro: All of our machines in the group, when we first went out there, all of our machines were named after dead, white philosophers. Dead, white, male philosophers. So my machine was Mills, and I don't know. So we had a lot of fun, it was a lighthearted adventure. That, again, like PARC, sort of went for about five years as a lot of lightheartedness, and then it sort of-- they started to use it, they started to actually make a lot of money on it, and then it became pretty serious, because it became the sort of program of record. When that happens, then lots of-- then it becomes cement.

Hsu: Right. So that became their main trading--

Merry-Shapiro: Yeah--

Hsu: -application for--

Merry-Shapiro: -I think maybe even to--

Hsu: -their trading?

Merry-Shapiro: -this day it is.

Hsu: Wow.

Merry-Shapiro: So I've had my fingers in <laughs> amazing things. Not bad for a kid from Iowa with a degree in theater, huh? <laughs>

Hsu: Yeah, wow. So you were with Morgan from '91 to--

Merry-Shapiro: '91 to 2001, just before the plane flew into the World Trade Center.

Hsu: Oh wow.

Merry-Shapiro: Yeah, I had just gone from there. I'd been out of J.P. Morgan for, I think, a month when that happened, and that was where that-- so the World Trade Center's where the PATH Train came in, so I could well have been caught in that. I was very--

Hsu: Wow.

Merry-Shapiro: I was not happy about getting run out of J.P. Morgan, but I was very happy that I wasn't in that.

Hsu: <laughs> Okay, that sounds like another unpleasant experience.

Merry-Shapiro: Yeah, it wasn't terribly pleasant. I seem to have a capacity for-- basically, all the people who have supported me, they're all very successful, and then they move away, and I'm left there all by myself. That's not very good.

Hsu: I see. So it's sort of like, you know, the-- you had patrons that got you in the door, and as long as they were there, you were fine?

Merry-Shapiro: Yeah--

Hsu: But as soon as--

Merry-Shapiro: -and--

Hsu: -they left--

Merry-Shapiro: -it was-- I mean, it wasn't like it was a charity. I mean, we did pretty incredible things together. I don't think I have the kind of necessary ambition to pursue a career in that way.

Merry-Shapiro: A career's always been an interesting thing for me because it never felt like a career <laughs> to me. It was...

<pause in thought>

Merry-Shapiro: I mean, the people were really-- have always been a hugely important piece of my work life.

Hsu: Yeah.

Hsu: Did you ever experience any discrimination, gender discrimination, or--

Merry-Shapiro: No.

Hsu: -over at--

Merry-Shapiro: <overlapping conversation> No, and I-- no, I didn't, and especially at PARC, I never did at all. Not in the slightest. That's always been something I've cherished, and I feel very lucky about. But that was never an issue.

Hsu: That's good.

Merry-Shapiro: Really, it's never been an issue for me. That's never been the problem.

<pause in thought>

Merry-Shapiro: Part of it is, I think, I kind of have a personality that just wants to get the job done and wants to get along, and doesn't-- so, I mean, that's part of the problem. If you're sort of working together and trying to get a job done, what your status is is not the big piece, it's getting the job done. Sometimes you go get the coffee, and sometimes you write the big algorithm. I mean, but you do all of that. You go off to Resadi's [ph?] < 02:03:25> and have some beer, and you spend all night working on the character scanner. I mean, those all kind of go together in my way of working.

Hsu: Yeah, huh. Yeah, I do find it interesting that, you know, maybe your experience among members of the Learning Research Group is unique because you then went into the industry where Smalltalk was actually being used and became part of that world. And I-- I think that's a very unique experience and I was wondering if you--

Merry-Shapiro: Is that really?

Hsu: -could talk-- I think so. Is it?

Merry-Shapiro: Well, let's see.

<pause in thought>

Merry-Shapiro: Yeah, it is, kind of, I guess. I mean, I think Dan has done some, although mostly research, I guess.

<pause in thought>

Merry-Shapiro: But yeah, that's true. I mean, Glenn went off to-- he was at ParcPlace, he left--

Hsu: That's true, yeah.

Merry-Shapiro: -stayed at PARC. Adele sort of went off and did highfalutin stuff. Yeah, I guess you're right. Well, when you're a kid from Iowa and you need a job, you go and find a job. <laughter>

Merry-Shapiro: I mean, it's--

Hsu: Yeah, but you got to see how Smalltalk was actually being used on the ground by customers--

Merry-Shapiro: Oh, you--

Hsu: -right?

Merry-Shapiro: -bet, you bet I did, and, I mean, it's a great tribute to Smalltalk that it was incredibly-- it's an incredibly powerful solution space. I would say that still. If you're going to write programs to cause effects, that is an incredible environment to do it in. There are a few others that are derivative from that, Self became very powerful, I believe, as a solution space. But...

<pause in thought>

Merry-Shapiro: I'm obviously-- what's the word, when you're partisan to something?

Hsu: Biased, or--

Merry-Shapiro: Biased, but I'm not--

Hsu: Partial to--

Merry-Shapiro: Yeah. But I do feel that. I feel the whole sort of object-oriented paradigm, the classification paradigm in Smalltalk was very compelling to me. This was a time, a new age time, so the root object in Smalltalk is nil, and that's very kind of Buddhist. Out of nothing comes something.
<laughter>

Merry-Shapiro: I was very taken by that.

Hsu: Yeah. Could you-- could you speak to, you know, Smalltalk's place in-- I mean, sort of Smalltalk's importance within the financial industry, and why it became so important there?

Merry-Shapiro: Well, okay, I'll hum a few bars about that, if I can.

<pause in thought>

Merry-Shapiro: So when I went to J.P. Morgan, I thought we were going to make programmers out of traders. I thought we were going to teach them all to be programmers. That's what I thought. I was very wrong, but that's what I thought. Because my whole goal, or my whole idea behind Smalltalk is that you're teaching people how to be programmers, how to manipulate the machines.

<pause in thought>

Merry-Shapiro: It turns out that, I guess, we aren't so interested in being able to manipulate the machines, we want the machines to just, I don't know, do what we want them to do. I don't know how to put it. But if you're not kind of grabbed by programming, I guess it's just not attractive. One of the things that was really interesting at J.P. Morgan was you just couldn't get the-- one of the things we implemented, by the way, in Smalltalk-- in Kapital, was a spreadsheet program. We called it Kapital 1-2-3. Remember--

Hsu: Okay. Yeah, Lotus.

Merry-Shapiro: -the Lotus thing? Yeah.

Hsu: After-- yeah.

Merry-Shapiro: The traders were just rooted in their spreadsheets, and they just would not give up that way of thinking about things. Obviously, spreadsheets are an incredibly powerful way to think about things, there's no question about that. But there's other ways to think about it that are equally powerful, but it was just-- so that was one thing. The other reason that we couldn't make programmers out of traders is that because-- it's for legal reasons. You have to be able to make things hard to change in the financial world, believe it or not. Because the temptation for <laughs> malevolence is just too high. So that's a big piece of it, actually, is that you don't-- so one of the things about Smalltalk is it's really easy to change and fix. But that's not a good thing if you're down on the floor and you can change the price of something just by typing in-- going in and changing a little piece of code. I think that that really is what was-- the reason that it couldn't become the tool. It became a huge financial application, but it couldn't-- in the beginning, before it got out on the floor, we did all kinds of things. The thing, the Blob Draw thing I was talking about and all kinds of graphical browsers and different graphical effects. You could break in anywhere and change anything at any time. That was great while we were developing, but it was kind of not okay once you started having something of record. I mean, I can see the issue, I don't have a good solution to it. I think it's sort of sad, but I don't-- people have to feel confident in their records that are being kept. I mean, that's kind of one of the big things behind the bit chain technology, I believe, is that--

Hsu: Oh, blockchain?

Merry-Shapiro: Blo-- I'm sorry, blockchain, yeah. But you know, you can have-- well, I mean, to some extent it allows you to do record-keeping that's not audited. But I mean, that's sort of a front and a back to that, but I must be getting very boring to you. <laughs>

Hsu: No, no, this is all great stuff. This is fascinating. You know, because I'm really curious as to why Smalltalk was so-- why did J.P. Morgan choose Smalltalk in the first place, because they could have used any other language, right?

Merry-Shapiro: Yes, yes.

Hsu: Why Smalltalk? What is the selling point of Smalltalk for Wall Street?

Merry-Shapiro: Trying to think of how-- well, Smalltalk was sort of the-- for a while, it was the crème de la crème of object-oriented programming. And it got that cachet and it captured the imagination of-- I don't know where else it got-- where, besides J.P. Morgan it got. I think it did get other places. It got-- one of the places it got very big and I actually worked a little while at a place like that was a container management-- managing container schedules and lading, all kinds of lading issues.

Hsu: Oh, you mean shipping containers?

Merry-Shapiro: Shipping, uh huh, shipping containers. I've forgotten the name of the company that had a very large program managing their traffic. So, I don't know. I mean, from my perspective, it's just this incredible solution space, you know? Why wouldn't you do it that way? But you know--

Hsu: Because it was object-oriented and you earlier had mentioned that J.P. Morgan had acquired NeXT machines, which was also an object-oriented system.

Merry-Shapiro: Exactly, yep.

Hsu: So, what was it specifically about object-oriented programming that Wall Street firms were interested in?

Merry-Shapiro: Well, you should ask smarter people than I, but I'll give you my eight bars on it. So, I think object-oriented programming is attractive because it's a great way to think about the world, about how the world works. I mean, it seems very close to how we think about things. Things and objects are kind of synonyms.

Hsu: So, in terms of modeling the world, you mean.

Merry-Shapiro: Yeah. And the-- so you know that Smalltalk was heavily influenced by Simula probably.

Hsu: Yeah.

Merry-Shapiro: And so, what is it that makes, you know, much of our science uses the kind of classification. I'm not sure, I mean, I guess object-orient-- a piece of object-oriented is the objects, but a piece of the Smalltalk environment is the notion of classification.

Hsu: Mm hm.

Merry-Shapiro: Where--

Hsu: The hier-- the class hierarchy.

Merry-Shapiro: Class hierarchy and the way of organizing knowledge and solutions into those kinds of hierarchies. And so, you know classes were a way of defining-- of describing objects. I mean, it's true in

the biological world as well. So, the biological world has this very hierarchical arrangement. I mean, whether it's literally hierarchical or not, I mean, we could argue about it I suppose, but we've determined that that's how we're going to organize that knowledge. That-- how we're going to organize thinking about the natural world. So, it seems like objects feel natural in a way that just captures people's minds. It captures people's interest. You know, even things like, I don't know very much about these things, but I mean, I think even things like Python and some of these other what I would call lesser environments, sort of act like they're kind of object-oriented. Just I mean, I think they're much less rich in their capacity, but they're sort of much-- they're often free, I guess that has something to do with it. I'm not sure why Smalltalk-- I still am puzzled by why Smalltalk didn't become more pervasive.

Hsu: Mm hm.

Merry-Shapiro: I mean, I think part of it I think has to do with the fact that it became-- it wasn't free and in many, many ways if something's free, it's very hard to break that nut. It's not something that I'm-- I mean, I certainly don't have any great insights about that. I don't think the world probably can work if everything's free, but I'm not sure I know how to make it work when everything costs something either.

Hsu: Right. Well, I guess I'm curious then like I would guess around the time that you left was probably around the time that a lot of Smalltalk in finance was beginning to be replaced by Java. Is that something that you were witnessing?

Merry-Shapiro: Yes. And you know what? Java was free.

Hsu: Right.

Merry-Shapiro: And everybody thought that it was object-oriented. And it sort of is but it's not-- it's much harder to use than Smalltalk.

Hsu: Yeah.

Merry-Shapiro: That's my opinion, but--

Hsu: Yeah. <laughs>

Merry-Shapiro: You know, when people started showing me Java, I said, "Well, why would you ever want to do that? You know? I mean, that's just backward." But it was free. I mean, I think one of the things-- this is a story you have to get from somebody else probably-- but one of the stories is is that Sun came within an eyelash of using Smalltalk instead of Java and the world might be a different place had that happened. But it wasn't free.

Hsu: So, you mentioned you also worked for that container company. Were there any other Wall Street firms that you worked for?

Merry-Shapiro: Yeah, not Wall Street, I worked for Chubb, the insurance company for a couple years. Actually, a couple times a couple years at a time. Chubb is sort of a, you know, insurance for rich people company. They had-- so their main support place was out in the middle of nowhere in New Jersey. When I went out to interview I said, "You guys--" it literally was out in the middle of a field basically. But and they had the Smalltalk I liked the least, which was Instantiation Smalltalk. You know, it's okay, but it's just-- it's not the Smalltalk I made. So, I did that for a while. They also had a big-- a very significant Smalltalk implementation. And that's another business application that was big. I've forgotten the name of it. They had a name for the program that ran. I'm pretty sure they still use that as well.

Hsu: Yeah.

Merry-Shapiro: But I'm not-- you know, so I don't know what other places have, you know, there are a couple places that had great success with it. But it just wasn't-- didn't capture the imagination as much as I would have thought. And then Dan went off and basically did, what did he call-- something Script?

Hsu: Oh, well, he did-- well, he worked on Squeak for a while. And then--

Merry-Shapiro: Oh, yeah, I worked on Squeak, but that was Smalltalk. But--

Hsu: Yeah. Oh, you mean Lively.

Merry-Shapiro: He did some script that was called-- I want to say JavaScript, but I don't think.

Hsu: Yeah, he did Lively and JavaScript, yeah.

Merry-Shapiro: Yes, Lively. And that was kind of Smalltalk-like, I think. I never had any much contact with it at all, but you know, I don't know it never-- so I don't know the secret to-- you know, I would like to understand why it is that it didn't take off, but you know, it's-- so it's interesting sort of to talk about the feeling at PARC was an amazing feeling of camaraderie and openness and very little hierarchy. And that was incredibly powerful experience, but it was not sustainable. And I'm not sure I understand why that is true. I mean, I think among other things it's not income-producing, but I'm not sure that's the whole story. There's just something about that kind of energy that doesn't sustain. I feel sad about that, but it seems like that's what happens. A somewhat similar thing happened at J.P. Morgan, you know? We had this incredible group and made this incredible tool, you know? But then it became very bureaucratized and it lost its pizzazz.

Hsu: Mm.

Merry-Shapiro: My phrase was that it turned it into cement, you know. We made this great edifice and then the cement dried and you didn't dare change anything, and that's just not Smalltalk.

Hsu: Yeah, yeah. So, you mentioned that you worked in number of the different commercial Smalltalks. Could you maybe compare and contrast your experience with those?

Merry-Shapiro: Sure. As far as I'm concerned the only real Smalltalk was Squeak.

Hsu: Right.

Merry-Shapiro: I never actually worked in Squeak. I mean, that's somewhat of a lighthearted saying. So, I mean, the Smalltalk that I did the most important commercial work, I did Kapital and it was the Cincom Smalltalk.

Hsu: Okay.

Merry-Shapiro: And I consider that far superior to any other Smalltalk.

Hsu: Any commercial one, you mean.

Merry-Shapiro: Any commercial Smalltalk. I mean, the only other one I know is Instantiations. Is there another one?

Hsu: I don't-- I'm not that aware of--

Merry-Shapiro: I think there may have been one in Europe somewhere that I've forgotten the name of, but--

Hsu: Is Gemstone one?

Merry-Shapiro: What?

Hsu: Is Gemstone one?

Merry-Shapiro: Well, yes, Gemstone. Gemstone is certainly Smalltalk-80 derivative. I mean, the Instantiation Smalltalk is just barely-- it's not really even Smalltalk-80 derivative. It's really just a different implementation. It's Dave Thomas' idea about what Smalltalk is. And you know, it's familiar but it's different.

Hsu: I see. So, Cincom is-- Cincom is-- so like, okay, so I think ParcPlace merged with Digitalk and then that IP is now owned by Cincom. Is that correct?

Merry-Shapiro: No. Did Cincom merge with Digitalk? Is that-- I guess you're right. No, is that right? [ph?] <02:26:37>.

Hsu: So, the ParcPlace--

Merry-Shapiro: Digitalk was another Smalltalk, you're right.

Hsu: So, Digitalk and ParcPlace did they merge?

Merry-Shapiro: I don't think so, but I could be wrong about that. I think-- I don't think so. I could be wrong about that. I lost touch basically after--

Hsu: Because I think Cincom now owns what was Digitalk.

Merry-Shapiro: Okay, I'll accept that, I don't really know. I haven't seen, you know, and so it's been like what, damn near 15 years probably since I've seen a Smalltalk. So, I'm not, you know, I don't really know anymore where things sit. I mean, the last Smalltalk I was around was the Chubb Smalltalk, which was the Instantiations version.

Hsu: Okay. And that was how long ago was that?

Merry-Shapiro: So, I left there when I was 75. I'm 83, so that was what--

Hsu: So, eight years ago. 2014.

Merry-Shapiro: Yeah, 2014. That's about right. Maybe 2015.

Hsu: Yeah. So, that's when you retired?

Merry-Shapiro: Yeah.

Hsu: Okay.

Merry-Shapiro: I mean, I basically Chubb was basically moving all their Smalltalk implementation to India. And so, they just stopped hiring Americans. And so, finally I dropped off the cliff. I don't think career planning is probably one of my strong suits. <laughs> But I worked a long time. I had a paper route when I was three years-- when I was in third grade. So, from third grade until I was 75. That's pretty good. A pretty good run.

Hsu: Yeah, and you were doing-- your entire career after PARC you were always writing in Smalltalk or some variant, something derived from it?

Merry-Shapiro: I was always, yes.

Hsu: Okay, wow. That's still pretty good.

Merry-Shapiro: Yes, I totally agree. I totally agree. I've had an amazing run. Absolutely don't want to denigrate that at all.

Hsu: You mentioned, you know, you said you were a Smalltalk gunslinger. Did that mean that you're mostly a contractor or were you ever a formal employee?

Merry-Shapiro: Ah, you know, that's a funny thing. I was always a contractor.

Hsu: Oh, okay.

Merry-Shapiro: So, when I came out to-- when we came back from-- so how we got from California to New York was I went to work for Kap-- for J.P. Morgan. We thought it was going to be six months. It ended up being ten years. So, but I was contractor the whole time. And most of the people who did the Kapital implementation were contractors. They weren't J.P. Morgan employees. I mean, "You're not financial. You don't have your MBA. How can you possibly J.P. Morgan?"

Hsu: Right, okay. <laughs>

Merry-Shapiro: I'm sort of teasing but, you know, it's kind of like that.

Hsu: Yeah.

Merry-Shapiro: But they certainly-- the pay was good. So, one of the reasons we ended up staying here is because Carol's people are all here.

Hsu: Ah. Family.

Merry-Shapiro: And I am her family, yeah. And I have very little family left back in the Mid-- you know, back in-- or you know, or in California even, but all of Carol's-- you know, she grew up in Washington, she has all kinds of people in New York. Family is here and it just made sense for us to be here.

Hsu: Right.

Merry-Shapiro: And that's why we ended up being here as opposed to-- I mean, I loved Palo Alto. I thought that was-- I thought that's where I would make my grave but thank God I met Carol because that has been really the most amazing story, miracle in my life.

Hsu: Yeah. <laughs>

Merry-Shapiro: So, yeah, that's all I did. I did-- we did Smalltalk-80 and then I did the work at Apple and then at--

Hsu: So, even at Apple, you were a contractor, or were you an employee?

Merry-Shapiro: Yes.

Hsu: Okay. Did you ever--

Merry-Shapiro: Yes, actually, when I did get an offer from Apple when we moved from Palo Alto to San Francisco. But we decided to take the Terr-- you know, the airline's offer.

Hsu: Right, okay. Well, actually, I wanted to ask did you ever end up working, you know, running into your old PARC friends at Apple. Because I know Dan had been there for a time. And Alan was there for a time.

Merry-Shapiro: When I was at Apple, so they were all by that time down in the Vivarium.

Hsu: Oh.

Merry-Shapiro: Doing Squeak or doing-- you know?

Hsu: Yeah.

Merry-Shapiro: And so, I didn't have any intersection, so who was I-- Cunningham, what was his? <clicks tongue> You remember Ward Cunningham? You remember that name at all?

Hsu: Yes, yes.

Merry-Shapiro: Or Kent Beck?

Hsu: Yes, yes, yeah, yeah, the Agile folks. Yeah.

Merry-Shapiro: So, Kent-- I think both Kent and Ward were at Apple working on the Apple Smalltalk when I was there.

Hsu: Okay.

Merry-Shapiro: We didn't have that much interaction. Had some interaction with Kent later when we hired him to do part of the Kapital 123 implementation in Kapital. And I had-- I'm trying to remember. I had a little interaction with Ward, but I don't remember exactly what the circumstances were. He was a pretty incredible fellow. He did the-- all the Wiki stuff, you know?

Hsu: Yeah, yeah. Yeah, we've interviewed him about that.

Merry-Shapiro: Yeah, yeah. Was a cool guy.

Hsu: Do you have any-- oh-- I was--

Merry-Shapiro: Have you interviewed Kent at all?

Hsu: No, not yet.

Merry-Shapiro: I haven't heard about him for a long time. I wonder where-- I just curious how he ended up.

Hsu: Yeah. I was wondering like do you-- you know, both of them went on to develop the Agile methodology, which is kind of inspired by Smalltalk in some ways. Is that anything you can speak to?

Merry-Shapiro: Yeah, it's a cool idea. <laughter> Right?

Hsu: I guess you've been doing Smalltalk all the time. So, you're already doing that [Agile].

Merry-Shapiro: You know, Kent was very good at capitalizing on the-- when I would-- I don't know, you called it the gestalt of the Smalltalk idea, of you know, so what I was talking about earlier being able to change things immediately and being able to interact. That's very, very similar to what one might talk about that in the terms that the Agile programming ideas-- they sort of fall into that same kind of feeling of lack of-- what would you call it sort of? Lack of formalism, more intuition and more-- less hierarchy. I mean, I don't know. I'm not deeply familiar with the Agile stuff, but it's kind of like that, isn't it? Am I--

Hsu: Yes. The more experimentation, less planning.

Merry-Shapiro: Yeah, more experimentation. You know, fewer meetings, lots of standing up. <laughs> I'm teasing. <laughter> I used to tease Alan. Alan, so you know, a very common thing in programming is to draw a box and make like a box with lines through it. List, like a list. And then draw an arrow to another box with a bunch of things in it. And that was Alan's-- you know, I would always tease that if Alan was going to come explain something to us, I could basically go up to the whiteboard, draw some boxes and arrows and he would just fill in the content. <laughter> He was just, you know, that was just his canonical way of communicating about stuff. It was funny. Alan always used to say that you-- if you couldn't get something on one page it wasn't worth its salt.

Hsu: Right.

Merry-Shapiro: He must have told you that, too.

Hsu: Yeah, the motivation behind the bet.

Merry-Shapiro: Yeah, some, yeah.

Hsu: Yeah. Speaking of Alan, he mentioned that years later he was asked to consult on Kapital after the original developers were no longer there.

Merry-Shapiro: Yeah.

Hsu: So, that was probably after your time there as well?

Merry-Shapiro: Well, I actually saw him come a couple of times when he came to consult, he and-- they invited me to come be there while he was there. But he was consulting, you know, as Alan does, you know, at a very high level.

Hsu: Right. <laughter>

Merry-Shapiro: And he does it extremely well.

Hsu: Right, yeah.

Merry-Shapiro: So, I did see some of that interaction. I remember, I also got see Alan's-- one of the early demos of the-- oh, what's the program that he did with Dave Smith and, oh, some other guy. Virtual Spaces. Do you know about that? You must know about that.

Hsu: I'm not sure actually.

Merry-Shapiro: What's the name? it's very much like a metaverse. It's like, you know, you have avatars and--

Hsu: Oh, when was this? I never heard of this.

Merry-Shapiro: Well, this is probably ten-- this is probably ten years ago, maybe even longer even. What was the name of that? It had a name, but I can't remember it. Anyway, he's always-- when he left the group that was really, really hard at PARC. That was-- there were some significant subset of us were pretty bereft.

Hsu: Mm hm.

Merry-Shapiro: <laughs> But you know, Alan, I'm glad he did. He's had impact in many-- you know, he has impact no matter what he does. He's just quite an amazing fellow.

Hsu: Earlier you-- so you made that joke about not being an MBA at J.P. Morgan.

Merry-Shapiro: Uh huh.

Hsu: And I'm wondering if not having a Ph.D. at PARC was a similar thing?

Merry-Shapiro: Well, so when I got-- so one of the things-- this is early in the PARC adventure, they decided that there was not going to be any titles. We were all-- you were either Clerical, which is what I was when I was a secretary or you were a Research Scientist. So, my first card when I got it when I started working for Alan said Research-- Diana Merry, Research Scientist. <laughter> You know, that sort

of fell out pretty quickly, but I mean, they didn't start having titles, but you know, the feel of it kind of lost its cachet. But no, for a long, long time, I suppose there was a-- I mean, there's a little bit of that. I mean, I think that had something to do probably with why I was not able-- I was finally kind of run off, because I didn't have a credential. But who knows, you know? But it was not something that was very noticeable for me most of the time I was at PARC. You know, whether somebody had the-- in fact, going off, you know-- listen I got my Ph.D. from Alan Kay. <laughter>

Hsu: Yeah. <laughs>

Merry-Shapiro: And you think working under Alan Kay or going to Stanford. Which one would you do, you know?

Hsu: Yeah. <laughs>

Merry-Shapiro: So, that's kind of what I felt about it. You know, most of the advanced stuff I-- you know, and I probably-- it probably didn't-- you know, there are probably certain things that would have-- I would have had a much kind of more successful career had I gotten a little more mathematics in me. The only mathematics I ever used was the Pythagorean Theorem. You know? Because in order to figure some of-- the diameter of a circle basically. But anyway, I, you know, it really wasn't a big thing.

Hsu: Yeah.

Merry-Shapiro: I think by the time I left it did become much more of an issue. But--

Hsu: Mm hm.

Merry-Shapiro: But then I was gone. <sighs>

Hsu: Yeah. So, then could you maybe describe the state of Smalltalk in the industry when-- either today or when you retired?

Merry-Shapiro: I think by the time I retired it had pretty much lost its cachet far as I could tell. You know, the program at Chubb was pretty long in the tooth. By that time, Kapital was what like 20 years old? I don't know what new things were being done in it. I didn't-- nothing that I heard much about. People were doing-- I mean, God help us, they were doing things in HTML and shit like that, you'll pardon my French. <laughter> So, you know, I met-- when I-- that still just blows my mind, you know, that people moved into that complexity. You know, they just seem to love complexity. I think they're very wrong about that, but then they're rich and I'm not, so. <laughter> So, there you go.

Hsu: Yeah.

Merry-Shapiro: So, I don't know, I mean, I still am quite bemused. I mean, I think it'll be interesting when you have this gathering to see what other people-- how other people-- what their take on that is.

Hsu: Yeah.

Merry-Shapiro: Will that be recorded, by the way?

Hsu: Yes, oh, so there's going to be two events back-to-back. The one that you were-- we were asking you to be a part of was a sort of VIP members only event. That will be recorded and the video will be released later. Whereas the event after that, which is a public event will be livestreamed.

Merry-Shapiro: Oh, good. Okay, well, I would like to see both the video and see the livestream.

Hsu: Okay, so we'll definitely get you both. Yeah.

Merry-Shapiro: Okay, perfect.

Hsu: Yeah, and actually the public event you can sign up for now actually on our website. So, I'll send you the link to that.

Merry-Shapiro: Oh, okay. Great, thank you. That'd be great. I'm really sorry I can't be there, but it just-- I can't make that work. I really apologize.

Hsu: Yeah. Although, you know, we are going to have another event in October to celebrate Dan and Adele's Fellows' Awards. So, if that's something that you could come to we'd be pretty happy to have you there.

Merry-Shapiro: Okay, well, I'll have to explore that and see how that works out.

Hsu: Yeah.

Merry-Shapiro: Yeah.

Hsu: All right. So, we're wrapping up. We just have a couple more questions if that's okay.

Merry-Shapiro: Okay. Have at it.

Hsu: Could you maybe reflect on the impact of Smalltalk over the last 50 years?

Merry-Shapiro: Well, I just told you something. I just said, "How come HTML had that big-- has had that much impact? How come people were willing to put up with that?" <laughter> Smalltalk should have just blown that out of the water. And so, you know, I'll say something slightly varied from that, sort of off to the side of that. When we thought-- so when we-- so you know, this inter-[ph?]thing called the web?

Hsu: Mm hm.

Merry-Shapiro: Well, that thing, when we were at PARC we thought what would be really great was if you could sit at your computer and you could log into the Library of Congress and find anything you wanted to find. Well, that became the internet. And it became Wikipedia. And it became Google. And the search algorithms, Alan would have claimed, I think he would agree that he said this, that, "The only way to do this is you have to invert all the data, index it, do all kinds of organizing of the data." What actually happened is is that-- this is way oversimplified-- but what actually happened is basically you do pattern-matching, you know? You say, "Look for this stream." Now that's, you know, it's very brute force. But there's enough computing power to do the brute force. And I would have never in a million years have thought that you could do it that way. That it would be-- and I don't think at the time that we were thinking about how it was going to look, we would have-- that Alan would have thought that even. That you could possibly do that, you would ever have enough computational oomph to do it. But and now we're overwhelmed with data and our access to data and our being data. <laughter> And it's all a very simplistic mechanism for searching it. For traversing it, I guess is a better way of putting it. You know, it's more sophisticated than I'm saying, but it's shocking that a much simpler model than we thought is all that was required to liberate something like the internet, access to information that way. I think that to some extent that's happened with things like Smalltalk. Part of it has to do with what I talked about the free thing. But I think, I don't-- it's very hard for me to separate myself because I am so captured by the idea of Smalltalk, by the idea that-- it seems extremely-- it seems like the most simple way to think about problem solution with using computation. But it hasn't come out that way. People use Python and they use all kinds of, you know, pretty rudimentary stuff, it seems like to me. Am I wrong about that? I mean, am I just out of date? You know? I don't know. So, that's-- and so, you have to ask somebody smarter than me about why it didn't take off, because to me it doesn't make sense.

Hsu: Yeah. Could you reflect on how Smalltalk has changed your life?

Merry-Shapiro: <laughs> Yeah, I mean, you know, it gave me something to do for like 30 years that was a whole lot more fun than being a secretary. It gave me a lot of insight into the power of a simple idea. Just to kind of contradict what I just hummed a few bars about. The notion that I said earlier about going from ones and zeros to Wikipedia is just still seems totally mind-blowing and certainly informs me in how I think about life and the world. So, yeah, it had a lot to do with how I turned out. And how it turned out for me.

Hsu: Yeah. Okay, so one final question is what advice would you give to a young person starting out in computing today?

Merry-Shapiro: <laughs> Run like hell. <laughter> Let's see. Well, so the hot thing right now and the thing I think about-- well, I think about lots of things. I think about is it possible for us to govern ourselves? So I think about, you know, I had a Philosophy minor, I mean, I think about things a lot. But right now, artificial intelligence is looking extremely powerful. And automation is making the notion of the way I put it is what-- it's becoming more and more difficult to know what we are for. You know? For most of us growing up, it's been to work at a job and have a family and have a house or something. You know, have a place to live. But a lot of the stuff that we do now is kind of more and more it can be done without us. And then what are we for? I have a good friend who said, "We're for art." And I think that's not a bad

insight. So, what do we do? We should do art. We should do poetry. We should dance and sing, I guess. What should somebody do? I don't know. I mean, <clicks tongue>-- Alan used to say there was, "No such thing as Computer Science, there's only about four big ideas and recursion and lists and," I don't know a couple other things, "Hashing and caching." <laughs> I guess, I don't know. I mean, you know, is computation still interesting to people? I mean, should it be? I mean, most of it's been solved hasn't it? Or hasn't it? Has it just gotten so abstract that I don't understand it anymore? That seems-- I mean, that would be kind of the most reasonable thing for me to say, I think. But and maybe that is the case, but you know, I don't know. I don't know. I guess the answer to your question is I don't know. <laughs>

Hsu: Well, that's as good an answer as any, I would say.

Merry-Shapiro: It's an honest answer. <laughs>

Hsu: It's an honest answer, yeah. It's a humble answer. <laughter> As always.

Merry-Shapiro: Yeah.

Hsu: Well, thank you very much. This was great.

Merry-Shapiro: Hansen, it's been a great delight. I don't think I've given you as much as I would have liked, but I hope I gave you enough.

Hsu: No, we-- you got plenty. <laughs>

Merry-Shapiro: Yeah, okay. So, I hope you admired the flamingos in the background.

Hsu: Yeah, I've been looking at them for the last three hours. <laughter>

Merry-Shapiro: So, I have a wonderful life and I'm very happy to have been a part of this. There's a lot of history I got to live through. I've been amazingly privileged to do that.

Hsu: Yeah. Well, thank you very much.

Merry-Shapiro: And thank you very much.

END OF THE INTERVIEW