Oral History Interview with

Susan Dray, Ph.D.

On January 28, 2020
Minneapolis, Minnesota

Conducted by Jeffrey R. Yost, Ph.D.
Charles Babbage Institute
Abstract: This interview is part of a series on Human Computer Interaction (HCI) conducted by the Charles Babbage Institute for ACM SIGCHI (Association for Computing Machinery Special Interest Group for Computer Human Interaction). HCI Pioneer and one of the founders of SIGCHI recounts her education, early career, and the founding of SIGCHI as an idea/plan in Gaithersburg 1982. She details her work in human factors on government projects and on analyzing secretaries and office processes in using newly acquired IBM computers at Honeywell’s headquarters (the development and writing of DELTA), as well as launching the first industrial users/design lab outside of the IT industry at American Express Financial Services. She also discusses leaving American Express to found Dray and Associates, one of the first HCI consultancies. Among the core topics discussed are the evolution of SIGCHI and the CHI Conference, gender and the HCI field, the relative place of practitioners and academics in HCI, and her method and roles in studying users and advising companies/organizations. She also discusses UXPA (a heavily practitioner organization focused on user experience and design), and her role in mentoring many young students and professionals (especially women) in HCI.
Yost: My name is Jeffrey Yost, and I am the director of the Charles Babbage Institute (CBI), and I’m here this morning at CBI, on January 28, 2020, with Dr. Susan Dray, and this is an oral history being conducted for ACM SIGCHI by the Babbage institute, a project funded by SIGCHI.

Yost: Susan can you begin by just telling me a little bit of biographical information. I understand you were born in New Jersey. Did you grow up there as well?

Dray: I grew up in New York, actually, in the suburbs. And I went to school at public high school, where small. We’re still in touch with each other. I went to school in California, to Mills College, which is a women’s college. Pretty much all the women in my family went to Mills, and my mother was actually an assistant director of admissions, and she made it very clear to them that if I didn’t actually write to get the application from them, not to accept it because she didn’t want me taking one and just applying. She wanted to make it hard. That was a good--that was a very good way of doing it.

Yost: In high school, or earlier, before you entered college, were there certain subjects that you found especially interesting in school?

Dray: Well, I loved music, and I was very involved in the music program at Edgemont. I was the one who organized the school’s music library and I was the one who would always say, “22 days until Mozart’s birthday,” and that kind of stuff. I’m a great believer in fun. I loved science also, and I did not love math. So, I did not, I didn’t do a super lot of math. That’s funny because when I was a really little kid and they were testing in first grade and stuff like that, my mom tells me that my math scores were higher than my English scores, or language scores. But I remember very clearly in 2nd grade when we were doing times tables, and I was finished. I had done all my work, and I was working on a poem because I did a lot, I wrote a lot of poetry. Nevertheless, and so I was working on a poem, and Ms. Pastor, the teacher, came by and said, “Susie Dray, you’re never going to be any good at math!” and I’m
like “OK!” That was it. So, it’s interesting how much a single interaction with a teacher can influence you positively or negatively.

Yost: Yes.

Dray: I kept that in mind always and I try always to make my interactions with students to be as positive as possible so they don’t remember me like that!

Yost: One interaction can be incredibly impactful.

Dray: Yes. So, I actually went to college wanting to, I went as a music major and became a music and psych major. But I realized fairly early on that I actually did not like opera, and opera was sort of what my path would have been and so I got more and more into psychology and that was sort of that, so I ended up graduating in three and a half years with a double major in music and psych.

Yost: And did you have a stronger interest in behavioral or cognitive, or social psychology?

Dray: I was interested in all of it. But I really loved physiological psych. I loved social psych. Social psych was great! My project, my thesis was on conservation in mentally retarded kids. That was the term that, trainable mentally retarded, the term that was used in those days. And it was fascinating. It was a really interesting experiment with these kids. We published. And I remember I had to draw my own figures. I didn’t know anything about publishing--at all. I didn’t know how you drew, how you got illustrations into articles. So, I was doing pen and ink. It’s really funny. I got married after my 2nd year--not to my current husband, luckily, and as a result my husband who was a PhD in electrical engineering was working on his PhD at Stanford. He was looking for jobs, so I applied to, I think it was to 29 graduate schools, and in a range of things from developmental, social, general, physiological, and I ended up getting into UCLA, the physiological psych program, which at the time was the best physiological psych program in the country. It was a very new field. It was a very young field. I seem to
gravitate to those for some reason. Yes, that was a very interesting experience. Let’s just put it that way.

Yost: I see your dissertation was entitled, “Behavioral and physiological sequelae of ACTH and ACTH 4-10 administration during infancy in rats.”

Dray: That’s right.

Yost: Can you tell me a little bit about that project?

Dray: Yes. So, I was looking at the development of learning in baby animals and ACTH, which is the hormone the pituitary puts out to turn on the adrenal gland to put out corticosterone, typically in response to stress. But also, in response to learning. And this had just been found; that there was a relationship between--but not the ACTH, the big ACTH molecules, which is 39 peptides, turns on the corticosterone response which interferes with, can interfere with learning. But this little fragment 4-10, how they found it, I have no clue. But 4-10 didn’t turn on the adrenals. But it did seem to have an influence on learning. All of this work had been done in adult rats. So, I was interested in the development of learning, and I wanted to see whether it was possible to accelerate that learning by administering 4-10 when they were in the process of learning. And the type of learning that I used because baby--pre-weanling animals, you can’t do operate conditioning or any classical types of learning that animals do. So, the type of learning I was looking at was very primitive called conditioned taste aversion. This is--you’ve experienced this--where you eat something and then you get sick, and then you never want to eat it again, right?

Yost: Right.

Dray: Yes, it’s my Aunt’s meatloaf. Everybody’s got one. It’s very primitive. Turtles can do this. It follows very different laws from traditional learning. So, for instance contiguity typically if you want to
pair a stimulus and response, they have to come close together. So, you have a light flash and a pellet at the same time, or else if it’s separated a time, the animal will never learn that the light flash means they are going to get a pellet. But will conditioned taste aversion, that you eat it and your response hours later. So, contiguity is separate. Also, in the classical conditioning, any stimulus, any response, omnipotence, you can pair them--theoretically. But you can’t pair taste and light for instance. Or a buzzer, or something like that. Taste and illness are connected in a way that no other stimuli are. So, it’s a different type--it’s organized much lower in the brain stem, and it comes in much earlier. So, I was looking at when did it come in and could we advance that? I administered apple juice. I gave baby animals apples juice. And I gave them either saline injections or ACTH 4-10 injections. I made them sick with something called lithium chloride, which is the classic thing that you give to animals. Rats can’t vomit. You can make them really sick with lithium chloride. Then I saw who drank milk and who didn’t drink milk afterwards. The pilot study was brilliant! It was wonderful! Strong affects! I’m going, “Yes!” and then nothing. I ran a thousand rats and I did all kinds of other things too like looking at their behavior, et cetera, et cetera, how they did in open field, which in those days you would literally sit in front of a tub and watch every time a rat crossed a line. Anyway, this is not related to HCI, except it is because I got really good at paying attention to subtle behavior over long periods of time, even in darkened rooms in the middle of the night, which is when you had to do a lot of this stuff. In the end what it turns out is baby animals are just too, they are not able to suppress their intake immediately because they are just too small, and they need that nutrition. Even though they’re feeling sick, they are going to drink their mother’s milk. But when they were older, they did show the aversions. So, I started to test them older, and showed that, yes, they had actually learned it, and the ATCH did make a difference in terms of how strong the aversions were. Didn’t advance when they learned them that I could tell but it did have an effect, but, man, that was--you run a thousand animals and you’re kind of going, “I got to get out of here! This is ridiculous!” Anyway, that was my dissertation.
Yost: Can you tell me important mentors, your primary advisor, or others who were influential during your graduate school years at UCLA?

Dray: I thought a lot about this. I had an extremely negative experience in graduate school. I would say my mentors were more colleagues and friends than professors. My first advisor threw me out of his lab because I wouldn’t sleep with him. Literally. He said to me--it was time for me to get my animals for my Master’s thesis and he said--I was married at the time, you understand, he said, “Well, you want your animals, come up to my room, he was a known... And when I wouldn’t do that, that kind of blacklisted me in the department because he just spread all the words about how I was really stupid and all this. My second advisor took me on tentatively. I was looking at hunger and the development of citify mechanisms in the liver of rabbits and Guinea pigs, et cetera. That advisor--my grandmother died, and she lived in San Diego, and I need to go down to clear out her house because my mother was not able to do it alone, and I needed to take two weeks. My animals, my experiment was a point where everything was set up, was all running. I had a friend who was going to take on the little bits that needed to be done, but it was at a quiescent point. It was all set, and Don said, “If you go, you’re out of my lab.” Because he could! Because he could! I ended up down at the med school with a woman who I now realize is a really wonderful woman and at the time I was scared to death of her. She was actually a really warm, and funny and interesting woman, but quite formal, and I didn’t understand how to interact with her. Plus, she was a woman who was on soft money. And I was experiencing--I was seeing what being a woman in academia was like and what she had to go through, and what these others had to go through. So, it was a very difficult--I would have to say graduate school was not a good time. And I would not say I had mentors in graduate school at all, other than friends. I also got divorced during this time and so you know there was a lot of upheaval, all this kind of stuff. But then I met my husband. That was wonderful.
Yost: Did you have any exposure to the computing facility at UCLA during graduate school? UCLA of course had Gerald Estrin, Leonard Kleinrock, others, pioneering in computing.

Dray: No, actually I did at Mills. Mills you had to take two languages and one of them—I took French and FORTRAN so I used the Stanford computing facilities, because I was dating Peter at the time, for running all of my stuff, which was great. I found a punch card the other day as I was going through all of my stuff, I was like, “Oh! I still have one of these!”

Yost: Yes. We show those to students.

Dray: I know! They’re like, “Ah!” Do you remember, even before that, databases where, you had cards that had stuff typed on them, and then they had rows of punches, and you’d take an ice pick, and you shake it and the stuff would come out of.

Yost: Yes.

Dray: Holy buckets! Ingenious! People are so ingenious! Anyway, so I was running—I’d be using cards the whole time and then I, my big thing was that I was going to use the WYLBUR terminal, the interactive WYLBUR terminal to do a double analysis of a variants program. So, I put it all in, and then I pressed enter, and I swear there was lightning and thunder, skies opened and 85 graduate students in white coats were running toward me going, “What did you do?! What did you do?!” It’s kind of like—“I pressed enter.” “No! What did you do before that?!” Well, apparently whatever I did before, that triggered a bug in the IBM [System] 360, and it was down for like three days, and I was persona non grata. At that point I said, “Ah!” I think actually that’s part of why this whole area of HCI became really important because I could see what it feels like when you’re—it really wasn’t my fault, but I still feel like it was my fault.
Yost: In the mid-1970s, were you aware of computer kits, Altair, then later in the 1970s, the first personal computers from companies like Apple, as they came out? Or did you learn about personal computers more after you graduated?

Dray: I had a friend who was working with computers running his experiments. The first computers I was working with were Standard relay systems. We did a lot of that. I got pretty good at programming. We also had a [DEC] PDP or something rather that had pink tape with dots that would go through. I don’t know what the number PDP 11. I don’t know! We used that for something, I don’t remember what, but it was very rudimentary. Then Jim who was doing this study with—we called it “pup and cup”--where he was doing timed infusions into infant animals. He was using a personal computer of some sort, but don’t exactly what. He was probably the earliest innovator in computing, but I realized I really didn’t have any real interest in computing—at all—in those days. And I didn’t know much about it either. What I did know is that I didn’t want to kill anymore animals. And in physiological psychology, you kind of have to kill animals, at least you did in those days. And I just got to a point where I just couldn’t do that anymore. I saw what the field was—a new field. So, the people who were in faculty positions were all young. So, they weren’t going anywhere anytime soon. So, I was going to be a post doc in Iowa for 15 years and I didn’t want to do that. Also, there was nothing else. I proposed, actually--I was trying to figure out what I could do after my degree. I proposed--I called a couple of drug companies and talked with them about doing behavioral testing of drugs with animals, I made a big pitch and talked about how this could be a really good thing, and they are kind of going, “What? What are you talking about? We don’t need to do that.” Well, like five years later, that’s where everyone was going for their, but it wasn’t there yet.

Yost: Ahead of your time.

Yost: Tell me how you came to interview for the position at Honeywell in the late 1979 and got the research scientist job?

Dray: Yes. That was really something. I talked with somebody at the career center at UCLA about transitioning into another industry, and she was really helpful. I remember her name was Tess, and she was short. That’s all I remember. Which is actually amazing because I don’t have a very good memory for names. She--we talked--there were a number of us in this position of trying to think of what else could you do and trying to think laterally what kind of skills do you have? So, I developed my first resume that was a resume--a one-page resume. One page! Oh, my God! I had the skills and I think one of my biggest skills was organizational, being able to organize and manage lots of stuff at the same time. We would call that multi-tasking now. Don’t ask me to do it now, of course, back then. Periodically, companies would come on campus to interview. And Honeywell sent this guy, an engineer, and they were interviewing for this man-machine sciences place. So, I went, “Well, might as well,” so talked to him. He knew nothing about the job, but he sent me to this guy Tolly Kozilis who was the ombudsman at Honeywell in the systems and research center and talked about the job and they got all excited and they brought me up. And it was really funny because--these things probably wouldn’t work these days. But they--I was going backpacking and so I said, “Well I can’t come. I’m backpacking, so I can’t do this until here, and I don’t really have any money to pay for it,” not realizing they were going to pay for it, and they just laughed. It was funny. So, I came up here. I should mention that prior to this, one of the things that I did--again, something that would not work nowadays, is I took the yellow pages, the LA yellow pages, and I started at A and went to Z and called every single category that in any way sounded interesting. I don’t think I did auto body finishing. And I said, “I am graduating with a doctorate in an arcane and useless subject, and I know nothing about the world. Please tell me, what do you do?” And I got like five job offers out of this.

Yost: Incredible!
Dray: Isn’t that something? It’s like, “Whoa!” People now don’t even know what the yellow pages is!

Yost: Yes.

Dray: I went and I spent a couple weekends running, helping to run a restaurant because that was one of the things I was thinking of maybe doing. I can’t even remember the other things I did. It was kind of amazing!

Yost: You became a research scientist in the man-machines sciences group of Honeywell’s Systems and Research Center here in Minneapolis.

Dray: Right.

Yost: Were there any other women working in that research group at that time?

Dray: Not PhD level women. There had been one--Christine Clark--had been there before. She married Jim Renier who was the CEO so that was kind of--that career path was gone. So, I was the first PhD level woman there. There were some students, who were master students, but I was the first woman. And they really didn’t know what to do with me. They hired me, frankly, it was need to tick a box. They brought me in at $5,000 under the bottom of the scale, which they realized, sort of all the sudden was potentially a liability. And all of the sudden my pay got bumped up by 10K, it’s like, “What?!?” Tried to make me say I wouldn’t complain. I was making more than my advisor was making, so to me, it was, that was, a biggie.

Yost: Did the gendered “man-machine” systems seem odd or uncomfortable, it not being “human-machine” at that time?

Dray: Yes. So, the guys I was working with were all very smart, all PhDs, mostly psychologists. It was the point at which the field was changing from what I would call first generation to second generation. They were walking around going, “It’s not just knobs and dials anymore”, but they didn’t know what it
was. Of course, what is cognition? And HCI stuff like that. But when it was knobs and dials, everything was being done by, for, the military. So, I was working on military projects. I had to wear my little grey wool suit with my little string tie, my little white pleated shirt with collar, rounded collar. I had to be a man in a skirt, so to speak. It was horrible. It was really awful. I don’t mean to be negative. I’m sounding very negative. I’m not a negative person! Really, truly. It was just really, really hard because there were no role models. There was nobody, everybody was older than I was. They all had families. They really didn’t want me there. They had to have me there, but they didn’t really want me there. And my boss actually told me on a number of occasions, the only reason I was there was because I was a woman, and he didn’t expect that I was going to be able to amount to a hill of beans. So, I’m stubborn and wasn’t about to let that happen. So, I got put on projects, such as—the secretaries were having problems with adapting to using IBM 3270 terminals for word processing. This is one of the stupidest ideas I can image, but somebody thought it was a great idea. Computers! Of course, it’s an absolutely stupid and ridiculous thing to do, and they have to learn all this crap, which makes zero sense and all of their skills are erased, basically. In addition the issues of learning it and all this kind of stuff, there were all these organizational issues where the power structure there got all messed up so the senior person who used to control ‘the conference room,’ no longer had ‘the conference room’ because it was on a schedule anybody could schedule it! So, she was very senior, lost a lot of power and was very angry. A lot of this manifested in physical problems. Worries about radiation, worries about carpal tunnel, light, headaches, all that kind of stuff. So I got—I was the girl, so I got to deal with all of that, which was fascinating because it became so obvious that this thing that was designed by people to do different tasks was never going to work for these people who are trying to do a totally different task, and were trying to figure it out, and it didn’t make any sense. So, it’s like, “Wow,” cognitive stuff matters big time, boing! And sometimes when you’re coming from outside, well, maybe always, when you’re coming from outside, and you’re an outsider in so many ways, you see things so differently. I’m coming from
physiological psych. This is not what any of these people were trained in. At first it felt like, I don’t know anything, then I started seeing, now wait a sec, started seeing all these patterns that other people weren’t seeing. And the problem with that is you think you’re crazy because you see them and nobody else sees them. This is where having a mentor would have been really wonderful. This is one of the reasons why when I mentor my youngins’, and I’ve had--I’ve had this amazing opportunity to work with, I don’t know, 50 or so folks, and they’re mostly young women. Many of them, especially nowadays are from the so-called “developing world”. Also, young men from the developing world, or women of color in the states. I don’t think I’ve had a traditional white, Anglo-Saxon protestant male graduate student mentee--ever. I don’t know. Maybe one?

Yost: When you came into Honeywell, you got a clearance, and you’re doing some research and work for the military.

Dray: Yes.

Yost: I don’t know if you can say anything about the military contract work but how long was it before you transitioned to focus on the office and the use of the IBM 3270, and can you compare and contrast those two types of work and activity?

Dray: I was working on a project, standoff target acquisition system, and basically, this was, the idea was in a ‘mid-intensity’ European conflict, in other words, just short of a nuclear war, we would send up a helicopter behind our lines with radar that would scan behind the enemy lines, and we would use the radar returns to try to make sense of where, what the activity was. Where were there fuel facilities and where they were doing truck maintenance and all this kind of stuff based on all of this. The radar returns would be beamed down to a van, where guys with a 7th grade education, would be trying to make sense of them. So, we did everything in terms of the design, radar, other people were doing the radar, but we were doing all the interaction stuff. And I worked on manuals. I remember saying, “Guys,
this isn’t going to work.” And they’re like, “Well, they are very well-written,” I’m going, “Yeah,” but then I did the Flesch index, and they were written at a 24 grade level, and these guys have a seventh grade education, 7th grade reading level, said, “This isn’t going to work, guys!” I was also looking at redundant queuing, how to queue the operators as to what were significant targets, et cetera, et cetera. I was doing this as my main job and this office stuff was sort on the side. That was, I don’t know. I was in--trying to remember how long I was in man-machine, maybe I was in man-machine for three years. maybe. That happened fairly early on. I also banded together with the few other women engineers there and got involved in the American Women in Science and this kind of stuff to try and build, a little community there. But it was very obvious to me that the cognitive--the way people think, and the way people process information was really critical, and that we were not doing a very good job of matching the real user to what we were producing. So, I was kind of a thorn in their side. Oh, well.

Yost: Was there any reading you were doing at that time in the human factors-area that was influential to you or had you joined the Human Factors Society.

Dray: Yes, I joined the Human Factors Society very early on. And I got real involved with it. I went on to be the Chair of the Computer Systems Technical Group. The organization at that time was, had technical groups that were the primary, they’re like SIGS and SIGCHI really, although much smaller and less well-organized. So, they were sort of the power, and the Computer Systems Technical Group (CSTG) was pretty new, so I became the chair of that. Actually, that was very significant because it was because I was chair of the Computer Systems Technical Group that I had a seat at the table at Gaithersburg when we formed SIGCHI. So much of this is being in the right place at the right time, and just saying yes. Sure!

Yost: Right.

Dray: What did I just sign up for?

Yost: How large was that group [CSTG] in say, 1982?
Dray: Oh, gosh, numbers, I don’t do numbers super well. I don’t know. I want to say, a few hundred, maybe?

Yost: Roughly, what was the gender mix?

Dray: Mostly male. Mostly men. Everything was mostly men, except the secretarial pool.

Yost: When you heard about this meeting [Gaithersburg] that Bill Curtis and Ben Schneiderman were organizing, what did you think? What did you expect?

Dray: I thought this was going to be the coolest thing in the world. I was so excited! And I was really shocked that nobody else wanted to go. So, it was like, “Oh, Yeah! Yeah!” That was--I was so excited about it. I was pregnant at the time. In fact, I did a little--when CHI was in Denver, they did this CHI Stories thing, and I did a CHI Story about this. I was pregnant with our first daughter, Anna Rachel. And the first night I was just buzzing, and I was followed to my room by somebody who was--I mean I ended up having to run to my room and slam the door and his hand was coming in. I was pretty terrified. I was on the ground floor. It was like, this was very frightening. And I ended up going and staying with a friend in a different hotel because there were no other rooms. The second day, which was the day of the meeting where we formed SIGCHI I was just like really tired, and, did I really want to go? Well, Anna Rachel had different ideas, that kid, and she was like, “Mom! You’re going to this meeting! Mom! You’re going to this meeting.” So, I credit her with my association with SIGCHI.

Yost: So, there was an evening discussion.

Dray: Yes.

Yost: Can you tell me about that? I understand from ACM Loraine Borman was there and Tom Moran and you and a few others.
Dray: Yes, “We can’t let the spirit of Gaithersburg die!” was kind of the general sense because everyone was so excited about what was going on and it was so obviously the right time for something to happen, and we just had to figure out what to do. Loraine was there, Marilyn Tremaine was there from SIG, SIG SOCS, I think, Sarah Bly from SIGGRAPH. Gosh, somebody from ASIS&T. I mean, there were a lot of women in the room. What I remember was there was just this electricity that we needed, that, all of us needed to come together, despite the fact we were all from different organizations, that we all had our own politics and all that kind of stuff. We needed to work together, collaboratively and interdisciplinarily to really build something that would last. And Loraine, being Loraine, amazing woman, said, “Well, I’ll get ACM to host it--to be the place that will provide the home. Then it was like, “So what are we?” So, for ACM you have to SIG--something. I was saying, “Well, we should be SIGHCI.” Can’t remember who it was said, “Yes but then it would be SIG-HCK?” So, we became SIGCHI instead. But, yes, probably a good thing I didn’t get my way on that one.

Yost: At the time, or afterwards, did anyone place any significance beyond just the pronunciation, with having computer before human?

Dray: Oh, yes. It’s been an issue since then. I mean everybody going, “Well, why is computer first? It should’ve been first, it’s like, “Well, yes. True. But…”

Yost: And there is a SIGHCI that later formed at a different organization.

Dray: Yes, Exactly.

Yost: Is that AIS?

Dray: I think so.

Yost: Ok.

Dray: Yes.
Yost: Was there widespread agreement at this evening meeting or diverging opinions and debate about directions?

Dray: No. I think the whole gist of that meeting was, we need to have an organization, and it was more, “How can we build, where can we have it, where will we have organizational support, and how can we work together to make it happen?” It was more about that. I don’t remember anybody saying, “Well, it should be focused on this or that.” It was so formative at that point, that there wasn’t really a sense for what HCI was, really.

Yost: I understand that the expectations were for 200-250, and 900 came to the event?

Dray: Yes. Exactly. And it was hotter than hell in there because people were sitting in the aisles.

Yost: Right.

Dray: Yes, it was. That was quite a meeting! I don’t know if I brought my proceedings... I think I did. I brought the curriculum book.

Yost: I looked at that proceedings on-line.

Dray: Yes. It’s so funny, isn’t it, to see the typing...

Yost: Right. It seemed like, perhaps a fifth or a quarter of the papers were from women, and the [evening] meeting that formed SIGCHI was heavily women.

Dray: Yes.

Yost: That was somewhat unusual in the computing field [at that time].

Dray: Definity! Definity! I think the whole human ‘thing’ had a lot to do with that. And I think that as a result of that, it also influenced the development of the field in a very significant way. Yes, and it’s funny because, even so, even in such a ‘feminine’ in quotes, so for one thing I think that has something
to do with the challenges that HCI has had being accepted as an actual part of computing, of computer science. I think that’s part of it. But even so, it took, I don’t know how many years before we had a woman who was even a part of the--who won a major award or who was part of the CHI academy. So, it’s interesting how the dynamics of power sort of don’t always, necessarily follow from what you might expect. I don’t want to complain and stuff like that. I think that’s… I understand that. I totally get it. It pisses me off. I fought a lot and was sort of an agitator.

Yost: In becoming the chair of the Computer Systems Technical Group on human factors, was there resistance to a woman chair?

Dray: No. None at all. No. HFS was much more--they were more neutral about the whole thing. They didn’t seem to see gender very much. There had been women presidents of HFS--and now it’s HFES--there’d been a lot of women who’ve been presidents. In fact, most recently a very dear friend of mine Mica Endsley, who was the Chief Scientist for the Air Force. She just did a big testimony on the 737 MAX situation. She just spent a day in front of the FAA about that. And that’s not uncommon. That has not been uncommon in the Human Factors Society. Which is weird because it’s heavily military. It’s in many ways a very male focus but it’s just been different. So interesting how organizations are different! And then you have the Users Experience Professionals Association (UXPA). Totally different organization. Completely. Could not be more different. I love them all! Such wonderful people in this field. They’re just such wonderful, wonderful people in this field.

Yost: At Gaithersburg, was it mainly people from the industry or pretty evenly split between academia and industry? What about the military?

Dray: I don’t remember military at all. I think it was mostly industry. But I don’t really know. It’s just a very vague impression. Yes. Aside from Ben and Bill, I don’t know that there really was a lot of this happening [in academia]. Don Norman who was starting cognitive psych. There wasn’t a whole lot
happening in academia. A lot of it, really, the beginnings, a lot of that happened at DEC (Digital Equipment Corporation) with Dennis Wixon, and folks like that. Control Data, Honeywell, in the computer industry where I think there was a lot of--there was a lot more focus on it than, my understanding of it at least of what was going on in academia. At least that was my impression.

Yost: In Jonathan Grudin’s book, _From Tool to Partner: The Evolution of Human Computer Interaction_, he emphasized the use of discretionary users and non-discretionary users. Can you discuss that categorization and Gaithersburg, the meeting at Boston [first SIGCHI the following year] and how it kind of evolved in the early years?

Dray: I guess I don’t know. Say more, say more about that.

Yost: I guess one way of looking at it is there are those who use computers because it was part of their job, so nondiscretionary, and those by, by choice, or not a job, discretionary.

Dray: Yes, data processors and secretaries and such.

Yost: Yes, and then later on people, with personal computers, people in the home that chose to use these systems. Another distinction, I was talking with Loren Terveen and he--

Dray: He’s a lovely guy, isn’t he?

Yost: Yes, he is. He came up with the categorization of professional versus leisure users which I think are very useful terms to understand the distinction. These are all kind of similar, but also distinct to a degree in specificity. But early on I assume that at those first meetings it was heavily people who were working with computers on the job or helping others to use computers on the job. Is that correct?

Dray: Yes, I was certainly, initially, I mean, personal computers. My experience with personal computers was not until I was in corporate information management, when was that? 1984, 1983, something like that. I remember going to a workshop, it was a Human Factors Society workshop it was
in Vail right after the ski season, which is a very grim time to be in Vail, and it was on the future of human computer interaction. So, it was very interesting. I remember, I found the overheads for that. They went into the garbage a few years ago, but I had hand-drawn them in their little flowers. Anyway, I remember Brian Shackel was there, and there were a bunch of us, it was fascinating. And a guy from Apple came and showed us Lisa, of course we were all sworn to secrecy. It was the most exciting thing and one of the things I do, which is weird; I’m a great believer that fun is very important. Fun is something that brings people together, that it makes things memorable, it makes it easy to learn. So, I’m always trying to find ways to have fun, pardon me, bring fun in. A lot of times I would leave people with a little gift. I went down to the store, and I got these garbage cans of gum and everybody got a trash can as the Lisa because that was the big thing with the trash can.

Yost: Right.

Dray: I still have my trash can somewhere. I don’t know where. So that was, I remember being involved--again, that was--I saw myself as a liaison between Human Factors and SIGCHI. I saw myself as someone who was trying to make sure that that human--you see, the Human Factors Society is an inter-disciplinary group. It [human factors field] is a very inter-disciplinary profession, for the design, implementation and use of technology. And I was trying very hard to make sure that inter-disciplinary, and that human focus stayed part of SIGCHI because there was definitely a possibility that people would focus more on the ‘C’ part and less on the ‘H’ part. I’m always a person who’s trying to bring people together in that way. So, finding physical objects like that, that could bring these different perspectives and sort of cement as were together, and we are different and we’re together, was very important. If than makes any sense at all.

Yost: Yes, it does.

Dray: I was very impressed!
Yost: When you saw the Lisa, do you recall what year that was and had you heard about the work at Xerox PARC at all prior to that with regard to the ALTO and XEROX Star?

Dray: Yes, I am trying to remember, it would be in my CV, would be the year, because we did a presentation at HFS following that. It would’ve been in October of that same year. Yes, I knew about, I knew Austin Henderson who was at PARC and Lucy Suchman, and I knew Sarah Bly, of course. I think she was at PARC at that time. Marilyn Tremaine was not at PARC but, yes. We were all kind of connected. And you know Xerox provided our CHI email for a long time. It was so interesting. I remember, so at Honeywell we used two different MULTICS systems; one run out of Phoenix and one run out of Boston. The two different MULTICS systems, they were line editors, of course. And you had to remember which system you were on because one of them backslash meant erase the last character, and the other backslash meant erase the line. So, you’d have to remember which one you were on. You could always tell when somebody forgot because it would be gibberish. And then Xerox started supporting us in, I’m trying to remember what my alias was, was it. I think it was Dray.CHI@xerox.com or something like that. For years and years and years they provided us with our email. So yes, PARC was a very important part of it and people at PARC were very important, and they were on the SIGCHI, not the HFS side.

Yost: At those early meetings, so Gaithersburg, and Boston, there’s a lot of papers on command lines.

Dray: Yes.

Yost: And command names, and abbreviations, and I’m wondering about the relative interest early on regarding command and early Graphical User Interface, or GUI, was there a buzz at these early meetings about GUI or...?

Dray: Oh, yes.
Yost: Or did that come later?

Dray: Oh yes. No. People were really excited about it and thought this was the future. This was going
to be this, would change the world. This would make computers actually usable. This would be the
thing that would save us. Yes, I think everybody recognized how important that was. And the people,
like the folks at PARC who were working on stuff like, and at Apple, that was, they were the golden ones.

Yost: Being in the Twin Cities, was there any interaction with Control Data, and did you learn about
PLATO at that time?

Dray: Yes, I had friends at Control Data. Had a number of friends at Control Data. But I didn’t know a
lot about PLATO, and I didn’t spend a lot of time working collaboratively with them, just more as, we
had, for a while we had a Human Factors [Society] chapter here and then we had a SIGCHI chapter here,
and we had a UPA chapter here, and now we have no chapters here. Volunteers, you know how that is.
So, I knew them pretty much through the Human Factors thing.

Yost: And Minnesota was also a pioneer with MECC, time-sharing in [K-12] education, did you know
anything about that?

Dray: No. I was pretty insulated.

Yost: Who did you see as kind of the intellectual visionaries or influences of this evolving activity, the
evolving HCI field, the theorists or the scientists?

Dray: That’s interesting.

Yost: In those early years? Say 1982 to 1985?

Dray: I would say, to me, Deborah Mayhew, Dennis Wixon, Dennis is just amazing. He did so, so, so
much for this field. Deborah and I were really good friends, and she, she wrote a book on, early on,
wrote a book on human factors and computing systems. Let’s see, who else would’ve been? Pat Billingsley, who nobody even knows anymore. She had also been at DEC. DEC was a real powerhouse. Trying to think—who else in those days. I knew of, of course, Ben [Schneiderman] and I knew of Don Norman, but I was kind of beneath them because I wasn’t an academic. Oh, well. So, I would say the really important people, I think who were really guiding the field in those days were people in industry, not people in academia. I imagine people in academia would disagree with that, but that’s definitely my impression. The really cutting-edge stuff was happening, you know, a lot of it at DEC. The whole idea of contextual inquiry, contextual design, came out of Dennis Wixon, I mean Karen Holtzblatt, took it, Karen was his intern and she took it and sort of developed it into a thing. But it all was the intellectual child of Dennis Wixon. Wonderful stuff. He was an amazing guy to work with. I did quite a lot of work with him. Yost: Were you aware of what ARPA, IPTO had pioneered in funding. The program founding IPTO Director J.C.R. Licklider started with funding AI and graphics and networking and time-sharing and some of the places he and [his successor as Director of IPTO] Ivan Sutherland funded, making Utah a center of excellence in graphics, and of course, MIT with Project MAC, and then work at SRI with Engelbart. Dray: I mean I was sort of tangentially aware of that, but it wasn’t top of mind. MCC, the stuff that was going on at MCC, later on, that was something I followed. That was a fascinating project, I thought. I guess I feel like I was fairly ignorant. Yost: I had a phone conversation with Jonathan Grudin, and he— Dray: Oh, Jonathan is just, like, unbelievable, isn’t he? Yost: Yes. Very knowledgeable and great to talk to. He said, he emphasized, that the people were doing this anew, and that there were not models, it was rediscovering that work [Licklider and others] as a sort of prehistory of HCI later on. It wasn’t like these foundational works influenced in continuous or linear way. It was sort of a [later] discovery of what came earlier.
Dray: I would totally agree with that. It was like we were building something from scratch. I remember looking around to see if there was anything that could help us out. But a lot of the time there really wasn’t. A lot of the time you had to go, “Well, ok. What did I learn about from observing rats and how can I use that to observe people?” That sort of thing. Making those kind of connections, rather than somebody who is doing something directly relevant. It’s more pulling things in tangentially, if that makes sense.

Yost: Yes. You mentioned the User Experience Professional Association, when did you join that, and can describe that early experience.

Dray: Yes. SIGCHI, pretty early on became fairly academic. Which I think is how the whole gender thing in part comes in that because of the gender skew in academia. I don’t know if that’s true or not, but it seems to me. There just wasn’t a whole lot for practitioners. And we tried. I tried really hard to get practitioner content, to get practitioner focus, to get any interesting practitioners into SIGCHI, into the CHI conference and it just wasn’t working. I mean, I felt like I was hitting my head against the wall. I actually felt like that a lot. Because I’m always--one of my friends said to me, “You are always coming from left field.” I think in a way, I am. I’m the one who says, “But what about...?” “But! Hey!” That kind of thing. There wasn’t--there just wasn’t content for practitioners, and they were getting really testy. I was at American Express by that point, and I had a woman working for me. Wait a sec, was I at Amex then? No because Betty was at Honeywell, so this must’ve been when we were still at Honeywell. Anyway, I had a woman working for me help me on the DELTA project, Betty Bowman was her name.

There was a meeting that was going to be held at Microsoft of practitioners, and I really wanted to go. But Betty really wanted to go. I thought, “I’m very involved in SIGCHI, and I need to let her have something that’s hers.” So, she went to his meeting and it was the first meeting of UPA--Usability Professionals Association. It was wonderful, and I ended up getting involved in it, and becoming very involved in it, and kind of at one-point sort of shifting over primarily to UPA, which then became UXPA.
was involved in that transition. That was fun. That organization is radically different from CHI, from SIGCHI. They couldn’t be more different! SIGCHI, and I love them both--I just love them both. SIGCHI is very academic, and very rigorous and has a particular--the papers are ‘the thing’. The papers have to be a particular way. There’s a great deal of pride in the fact that it’s 25% at most accepted. It’s a very academic conference.

Yost: And they had to get that down so that it could be used for people’s tenure decisions, so it counted?

Dray: Right. Exactly. So, they could--because what are you going to do? So yes. UPA-UXPA is very different. First of all, they don’t have papers, per se. They have sessions, in particular, a session. And a session can be a panel, it can be--they have roundtables. It’s fundamentally different in format for the whole conference. All your meals are included, so everyone is there for the whole time, you all eat together, et cetera, et cetera. It’s extraordinarily friendly. It’s just--their people are so welcoming, and so wonderful to each other, and there’s not a lot of the sort of back-biting and sort of thing that you get at a lot of academic sort of things. I’m an outsider, so I feel a little awkward saying that because I don’t mean to be critical.

Yost: Academics tend to see that too.

Dray: Yes, so you don’t get that, and you don’t get that same sense of everything’s competitive. It’s much more, everything’s collaborative. “Wow! What if we did that and we--oh wow!” Then you get people working together, and you get this real synergy. It’s a really, really different organization. Not that it doesn’t have its problems. It certainly does. But it also was always a much more international organization. That’s another thing that I fought for my entire career is to try to increase the diversity within SIGCHI, and diversity on all levels, including diversity internationally. That’s been a really big theme of mine from the very beginning. That didn’t have to be a theme. We always had people from all
over the place. It’s interesting how different these two groups are. I’ve tried really hard to get the two of them to work together, and it’s been a struggle. It hasn’t worked real well. I think that there’s genuine—I think SIGCHI really looks down on UPA. Sometimes people say, “We got to get those people back,” it’s like, “Excuse me but do you know how arrogant that sounds?”

Yost: Were you one of the few who attended both?

Dray: Oh yes. I think I’m probably the only—I mean, yes.

Yost: Tell me about the origins of DELTA at Honeywell.

Dray: Oh DELTA! It started when, so voicemail. I’ll give you the story. It’s sounds like a shaggy dog story, sort of is, I suppose. You can stop me at any time. Say, ‘Get to the chase!’ One day we had instituted voicemail at Honeywell. Had we instituted it, or had we considered it, I don’t remember? But it was right around that time, you know ’81 or ’82. Sorry, it maybe was 1984, so it was all sort of Orwellian. I don’t know how you write that one down… One morning at 7:15, before the switchboard was really, before the secretaries for the senior execs were there, the CEO of, I think, Cargill, called the CEO of Honeywell, Ed Spencer, and he wasn’t in his office yet, and his secretary wasn’t in the office yet. So, at first it went to his office and it rang and rang and then it rang over to his secretary, then his secretary wasn’t there. Then it rang to the lead secretary for the whole executive floor, and she wasn’t there. Then it rang down to the guard at the front desk where everybody was coming in, and it rang and rang and rang, and finally the guy picks up, and says, “Honeywell. Just a minute,” Puts it down, the phone’s rocking, you could hear people coming in, and he’s checking in a badge, and he’s checking in a box… “Yes, Honeywell. Oh, yes. What?” By this time there’s smoke coming out of the receiver. Somehow by that point, the secretary had come in and was able to pass it back, and it kind of got calmed down but Spencer got very worried about this. And he was worried, he was thinking about instituting voicemail, and he, wondering whether voicemail would fix that. But then he was also very
worried because he was thinking, “Well, now wait a sec, technology, is that going to harm the culture
that I built here at Honeywell?” Which was really pretty, pretty amazing. I think it was one of those
shaving thoughts. He kind of mentioned as an aside at a staff meeting, what was the impact of
technology on corporate culture? Was voicemail a good thing was kind of the idea. Are there good
technologies and bad technologies? Well, it was ’82. What do you know? It was pretty impressive for a
CEO, all things considered. It rolled downhill to Irma Wyman who, now there is a mentor! Irma Wyman,
and amazing, amazing woman! She was the head of Corporate Information Management, and I can’t
remember who was the head of HR, but the two of them were tasked with figuring this out. I worked
with the guy from HR, and then it was me, and we went out and looked at--we had a couple months to--
I think I interviewed 80 people, including people like Sherry Turkle, Rosabeth Moss Kanter a whole lot of
really interesting people who weren’t known in those days but were doing really cool stuff. I remember
we commissioned a study from somewhere. But anyway, we came up with this short, little report, of
course because it has to be short because these are executives and who reads? There were five
findings. I don’t remember all of them. They don’t really matter that much, I guess. But I do remember
we did a whole bunch of site visits as well. I do remember how in one--I thought going in there’d be
good and bad technology too, that was how it was phrased, that was how it was framed. I remember in
one place--whatever it was, was being used a lot. It was really positive. The next place was being used
as a plant stand and it was clearly useless. It’s kind of like, “What is this?” It was as a result of all of that
the one thing I remember the most was the technology provides the opportunity, but values determine
the choices. If you want to have a values-driven organization, then you need to be very clear what your
values are. You need to make sure that when you are designing and implementing the technology that
those values are reflected in it, which is a very human factors, human, HCI, thing, I think. That was the
source of the DELTA project. Said, “Ok. How do you do this? And it's like, “Well...uh.” I looked at the
stuff Enid Mumford had done and all of this and we decided, well we needed to come up with a
framework because it was Honeywell, a framework for--that mapped technology development and organizational change and put those two things together, and management, you put all of those things together. How do you manage the process of--and this was back in the waterfall [software development] days, so this is a little bit of a challenge. How do you do that because you didn’t have iterative development, things like that. How do you do that and then, so here are some steps for different people in the organization. That’s what that framework is. And then here are a bunch of tools you can use. The tools were things like, here are a set of exercises, here are a set of articles, here are a set of guidelines. Things that you can use, hopefully, that will help you do whatever that thing is. We had, we took--I want to say five or six different groups through using the DELTA process, and it was very successful, actually. Obviously not everything worked everywhere. There were a lot of tweaks and stuff like that. Overall, it was a very--it worked out to be extremely helpful and those implementations went much more smoothly. Well a lot of the reason for that was because a lot of people were involved in the process. Duh. A lot of it had to do with the fact you were paying attention to what people were doing and paying attention to what people thought, and paying attention to their suggestions, and including them. You know, all of that kind of stuff. It was interesting.

Yost: Was this all in Minneapolis or did it include Phoenix? Did you spend much time in Phoenix? Can you talk about the culture, that coming from GE and Honeywell’s acquisition of GE’s computer department and the Honeywell headquarters being here and the computer dept. there?

Dray: We did the implementations in Boston and here. Not the Phoenix folks. The Phoenix folks were involved in the development. We had people from all over the company, and all over the world. I worked with a guy who was in Brussels. I was in Brussels at the time. Also worked the folks in the UK, Hemel Hempstead. And did a bunch of teaching over there as well, about human factors and stuff like that.
Yost: Would you like to take a break at some point or do you want to continue?

Dray: I’m ok.

Yost: Ok. Great. At Honeywell, you’re doing work for outside clients but also a good deal of internal stuff, with DELTA, and helping to change the organization, was that a pretty pronounced shift to more, helping Honeywell with implementing and using technology.

Dray: Well, I changed jobs.

Yost: OK.

Dray: I went from Man-Machine Sciences, which was the place where we were doing the outside contract stuff to Corporate Information Management. Working for Irma Wyman, which was where we were doing the internal stuff, internal information systems.

Yost: Ok.

Dray: And so that’s where DELTA came from and that’s where the ergonomics stuff came from, and all of that stuff. And that’s where I went to. Actually, let’s see.. I went to Gaithersburg, was I over at Man-Machine or was I at CIM by that point? I don’t remember. Because I know I was pregnant and I transferred into CIM when I was pregnant with Anna Rachel, I think it was right after Gaithersburg, which was kind of amazing, because I was pregnant, very pregnant, and she was late, and I had to give my first presentation on my report for the first half year to Irma when two weeks after she was born and Irma was--I don’t know if you know Irma Wyman at all?

Yost: No.

Dray: She was an amazing woman. She went to engineering school at Michigan in the 50s. And was just, she was a little bit like a bulldog, and she always wore sensible shoes, and I have turned into Irma
Wyman because I always wear sensible shoes. These are snow boots, but yeah—exactly. I didn’t wear the high heels, anyway. Why am I talking about this? Oh yes. I’m giving this presentation to Irma and my milk let down. And I’m standing there like this, and this is a woman who was, never had, you know she’s not married, et cetera. And it’s like, “Ahh!” She was great. Really amazing. Scary as hell but really wonderful. All the women, not all, but a lot of them, the two major women, Anna Taylor, my advisor and Irma Wyman both were scary women.

Yost: In late 1987, you left Honeywell to pursue an opportunity at Amex Financial Advisors. Can you discuss that opportunity, that transition?

Dray: That was so interesting. This woman Claire Coleman had gotten in touch with me, I don’t remember how she got in touch with me, and we talked for a very, very long time. She was in Human Resources, and she’s really interested in HCI, and trying to bring that into American Express. At this time nobody outside the computer industry was really doing anything, outside of technology companies, were doing anything with HCI. So, this was really radical. Really radical. We sort of cooked up this idea—she was in human resources at the time, and we cooked up the idea that I could come in and would work with—basically doing organizational consulting around technology. It was one of those things where, it was just, you know, kind of—it was just answering this telephone call, and going, “Huh. Yeah. That sounds like it could be interesting.” And then it turned out there were all these changes happening at Honeywell and it really wasn’t clear what was going to be happening. And Irma said—I talked to Irma about it, and she said, “I cannot protect you for the long term, so if you have an opportunity, you should take it.” So, it was hard to do that. It was really hard to leave in that sense. American Express—Oh my God—what a different company that is! Oof! Very different! It kind of fell in my lap. I remember, I found the report from the testing they did, the psychological testing, and all this kind of stuff. It was an interesting process. It took quite a long time and you know and that was when the stock market plummeted, and I’m going, “I’m going to a financial services company?! Is that a good idea?”
Yost: Yes, that, October 1987, it was quite a correction.

Dray: 87, exactly.

Yost: A 23% drop [on the S&P 500; Black Monday].

Dray: Yes, exactly.

Yost: Culturally, what were some of the key differences between Honeywell and Amex Financial Advisors?

Dray: Very interesting question. Partly--by the time I left Honeywell, I was really comfortable there. I really knew kind of, how to make things work. I knew the kinds of arguments to use. And it was a very values-driven organization in those days. Values seemed to actually matter. It wasn’t the case over at American Express. Numbers mattered and I’m not good with numbers. So, I kind of became a storyteller almost and used a lot of analogies, again--out of left field, right? I had become a sailor in ’87. This may seem on the side, but it’s really not. In 1987 our second daughter died. She was diagnosed in utero, with having this genetic disease which now they diagnose regularly. She was the first person they diagnosed it with, and they didn’t know exactly what was going to happen. But we were pretty sure she was going to die, and she did, and that was a very major shift in life. It was like, “Ok. What is really, really important?” So, we set out--David and I had always wanted to sail around the world, not knowing anything about sailing, did not know how to sail, did not realize there’s really no good way to sail around Africa. But we did what any logical person would do, we bought a sailboat, right? We bought a 37-foot sailboat and learning how to sail really changed my perspective on things. This is how. When you’re a sailor, I don’t know if are you sailor at all?

Yost: I’m not.
Dray: When you’re a sailor, you are not in charge, which is also an analogy. Good analogy for life for what was—what we were going through at the time. You’re not in charge, the weather is. The wind and the waves and the current and what you really have to do it to learn how read those things and then use them to get where you want to go to the extent that you can. And you may end up not being able to go where you want to go. You may end up having to go someplace completely different, because you know, the tide, it’s against you or whatever. That was so helpful going into Honeywell, I mean American Express, because I had realized, I meant I had learned about wind, and I had learned about these things because I had to do that when you are sailing, you kind of have to learn about all those things. And I’d learned about all this stuff and so I knew I could learn, you know, when I started having those doubts, which I guess we all have. Especially women have those doubts, a lot, because we get—a lot of times people kind of play up those doubts, in my experience. So, when I would have those doubts, I would remember, but I know how to set the sails. I know how to read the wind. And I became very, very conscience of reading the landscape, then adapting what I was doing to the landscape in a way I hadn’t had to do at Honeywell because I had grown into Honeywell to a place where it became a comfortable shoe and here it wasn’t. So that whole sailing experience I think was really, I mean, in a strange way it was a very, very formative thing. And I really think it applies to HCI too. Especially now when there’s so much happening and there are so many things you have to be paying attention to have to sort of have to be able to do that.

Yost: You come with certain knowledge, but each setting is different. You have to learn and adjust.

Dray: Exactly, exactly. And what it meant to have a 25-knot wind, say, which is a lot in that direction versus that direction, is very different. So that 25-knot wind is consistent, but the impact is different in the different situations like you’re saying.
Yost: If I understood correctly in one of the videos, you sent, of a panel, you had a very creative, interesting technique for gathering knowledge [of Amex execs] and eventually a strategy for getting funds and a green light for a usability lab at Amex involving [anonymously distributing] Don Norman’s then new book [*The Psychology of Everyday Things*], riding elevators. Can you recount this?

Dray: Well, so one of the things I was introducing the idea of a usability lab. This was very radical. There was no such thing outside of the computer industry. And Don’s book, *The Psychology of Everyday Things* had just come out, so I bought a carton of them. He said, “You’re the one who bought that carton! I was wondering who bought a carton!” I bought a carton of them and I took them up to the 29th floor, which is where all the executives were, and I put them all in their in-boxes. Then I started riding the elevator to the 29th floor starting at like 6:00 in the morning, because that’s when they started coming in and I would listen to the conversations because they were all reading it because it’s so interesting. So, it’s like, “I don’t know who put this here, but this is really interesting.” I think we put Claire’s name on it so they would think they would have to look at it. So, it’s like, they’re going through, and ‘Yes, the Mercedes Benz! See that’s exactly how my Mercedes Benz...’ I’m going... “I don’t know about this!” It was so and so at the point that they’d read through much of it, that was at the point I put in my proposal for a usability lab. And I think at that point they kind of got it. I don’t think they would’ve gotten it otherwise. The real thing was I had to do a presentation and I had Ed Spence, had Jim Robinson who had these Coke bottle bottom glasses, who was the head of Amex, the whole thing and had Harvey Golub who was the head of IDS, that’s what it was in those days, and he had the biggest hands, hamburger hands, the biggest hands in the world. I had a Prograde VCR that was there. And I had the manual for the Prograde VCR. And it was plugged in, but it was not turned on, but it was plugged in. and it had ‘12:00’ flashing, and I said, “Your task is to set the time.” I don’t remember exactly how long it was, like 10 minutes or something like that. They had the manual. There going on and on trying to figure this out, and immediately once they got it, once they realized it wasn’t turned on,
then of course they were able to do it and it was easy. But turning it on is on page one and setting the
time is on page 12, and who goes one to twelve?

Yost: Right.

Dray: So, they nailed it and they really got it and it was like, “That’s what we want to avoid.” We want
to design stuff where turning it on and setting the time is on page one. Where people will actually be
able to do what they have to do. The combined IQ of these guys is like 552, you know. These brilliant
men. I did make Harvey hamburger hands push the button and Jim Coke bottle bottom glassed read the
manual, but you know, that was minor. That was incidental. It worked really well. We got double the
size of the lab. I was thinking we were going to get this little closet, and we actually got a double closet.

Yost: And you managed a staff of 10 at Amex?

Dray: Yes.

Yost: What their general background and what did you look for in people that could be successful?

Dray: Well I had a kind of inherited the training people, so I had the people who’d done the training on
the in-house database system, and the thing about that was, people would come in, it would take them
six months to get up to speed with the system because it was impossible. It was just horrible, and they
did all the training materials. Training materials were good, but it was awful. Then they’d be in their
position for about six months and then they’d leave. So, all of this investment you know you were
basically just throwing away. That was part of what helped make the case that we needed to design
technology differently. Then we had the usability lab and I had a woman Kay Koleptic, who was--it was
Kay, who went to UPA, not Betty. So UPA did develop--when I was at Amex, sorry. I get confused with
people. She ran the lab. She and a couple other folks ran the lab and had a guy who was supposed to
be doing ergonomics and didn’t really have the background and didn’t really do that. Would have to say
that I’m not great at hiring. I want to see the good in everybody and I tend to overlook things that are problems and I tend not; you know I sort of pay enough attention to those. So, the guy I hired to do ergonomic stuff was really not at all qualified, but he was charming, and it didn’t work out. That was too bad. Oh, well.

Yost: You mentioned this is the first lab of its type outside of the tech industry, IBM, DEC. Was there any learning that took place from papers you’d seen or people you’d met from what went on at IBM and DEC that you implemented. Can you talk about that?

Dray: Oh, yeah! They were helpful. They were really helpful. In fact, the lab was not ready. At first, we had scheduled a lab of the documentation for this new part of the system and the lab wasn’t ready yet. So, we ended up doing it down at IBM Rochester. I remember driving down in a snowstorm that was like, “Woo!” So yeah, they were fabulous. They were so helpful from everything on where to put cameras, what kind of cameras to get and how to do the logging and all of this kind of stuff. It started out very simple and then it became much more complicated. But I do remember so well, the person, we had this one person who was, had written this documentation behind the mirror. And there was the person in front of the mirror, the evaluator was just having a devil of a time, and at a certain point he threw the book at the mirror, right, it turned out, where that person happened to be sitting, totally random, and said, “This thing is crap!” It’s like, “Oh, yeah.” But I always had, always have to talk to people. You’d always have to brief people who were working behind the mirror about what was going to happen because, this always, always, always happens. The first person comes in. They criticize what you, they have a point, that they criticize, they say something. They have trouble. You’re going, “I thought we got smart people? I thought we recruited smart people.” Or, “I thought Susie was brighter than that! That’s so obvious!” And then the second person comes in and gets stuck at the same point, and it’s very quiet behind the mirror. And by the third time when they get stuck, it’s like you’re trying to do a Vulcan mind-meld, you know. “We’re going to change it! We’re going to change it!” It’s really, you
had to prepare the folks behind the mirror because they had no idea. And you had to make sure they didn’t just go to one. And we built our lab so there was an executive viewing section behind as well. We had to put in a motion detector there, so we knew when people were back there, so we didn’t have conversations that weren’t supposed to be heard by executives. But again, even there, I would brief people and explain the situation, so they would know not say, “Oh those stupid programmers.” That kind of ...

Yost: What were the greatest challenges, toughest experiences in the early time with this lab at Amex?

Dray: What weren’t? Everything. Having, helping people understand what we could use the lab for, you know. Proselytizing. A lot of proselytizing. I remember talking to so many different people at so many different levels about ways we could use the lab. We also had a portable lab. Portable being--it was these two packing cases that were like this that you could wheel around. We used those periodically as well, actually, they were fairly useless when it came right down to it. But helping people understand what they could use it for. Then the actual building of it and handling, the camera was down, trouble shoot, you know. How do you get people who are able to do that and also facilitate, you know, those aren’t necessarily the same skill sets. How to apply what we were learning forward. How to help people understand and do some consulting, building consulting around. It wasn’t just using the lab, but it was also helping people kind of apply the findings, and that sort of thing. So, figuring out how to do all that stuff and how to use the skills people had in order to do that.

Yost: Consulting internally, or externally as well?

Dray: Internal. All internal.

Yost: Was the knowledge being developed at the lab considered proprietary and something you weren’t to go out and share best practices with others?
Dray: The content of the specifics was proprietary. So exactly what we found out about this particular system, that was all, of course, proprietary, not that David would care but--some of them, they would care. But the process, I always assumed, the process was open. I didn’t actually always ask permission. I just shared it because I thought that’s the only way we’re going to move forward.

Yost: And you become part of a community that you want to promote learning and benefit from...?

Dray: Exactly, exactly. That was one of things that made me really different at American Express. At Honeywell, there were people who were professionals that were part of professional communities, especially at SRC but not at American Express. People were not a part of organizations; they were part of American Express. That was their organization. And I had this dual loyalty because I had this loyalty to HCI as a profession which made me a very different bird than most. So, my whole idea of going to a conference and sharing and bringing stuff back, that was all, sort of a bit suspect. A little bit odd.

Yost: You had talked about how at Honeywell some of the work had been international. Is that true at Amex as well, or not?

Dray: Yes. I’m trying to think what we did internationally. I did...it was...yes there was some but there wasn’t as much, if I’m remembering correctly. We’re pretty focused internally between New York and Minneapolis. I mean, I was always the one who was talking about, we have to be sure that we’re considering people who are going to be using this in other places. One of day, time and address issues were a concern in my training and documentation group. We got involved in that level. I did stuff, talking about intercultural learning and that kind of thing. And I used a lot of that in the lab and in, I was also doing Organizational Design and Management or ODAM as we called it at human factors. I sort of saw there were three different pieces. There’s the physical human, the cognitive human, and the organizational human. My training people was doing physical human stuff and cognitive stuff. The lab was doing cognitive stuff, primarily, and I was doing a lot in, the ergonomics, the people, this guy was
doing the physical stuff. Sorry. He was doing the physical stuff. The lab and the training folks were
doing the cognitive stuff, and I was doing a lot of organizational consulting around technology
development and technology computation. And in that area, yes, there was international. I mean, I was
involved with an international community to some extent. But most of my international stuff was
coming from outside the company. It was mostly coming from HCI folk. And in those days, they were
largely in Europe.

Yost: You were an early pioneer in ethnography and bringing that into HCI. Can you talk a bit about
that?

Dray: Yes, so I remember my very first project. It was at Medtronic. The Medtronic team that I was
working with was trying to understand the experience of--they were trying to design a drug pump. They
were trying to understand the programing of the drug pump. This was as a consulting project, later on.
This was not while I, this was after I went out on my own. I don’t even remember how I got this job. I
remember thinking, I have absolutely no idea what happens here. This is like, so alien. And they didn’t
either. So, I said well we need to go and find out. So, I trained them, such as it was. I trained them in
doing observation. And we talked about, you know, where you stand, all of this kind of stuff. It was
very, it was very rudimentary. We went into an operating room. How we got permission, I really don’t
know. I mean this is like--this wouldn’t happen today. I mean it would happen in certain places, but it
wouldn’t happen this way. Anyway, we all scrubbed up, and we had been told that if anything
happened, we were out. If the doctor said we were out, we were out. One of the guys fainted at the
site of blood, so we were out. So now all the sudden we couldn’t really watch the operation. So, it’s
like, “Well, shit. What do we do?” So, I said, “Well, we can talk to them and watch the nurses.” Well it
turns out, duh, the operation’s not what you want to watch. The patient’s unconscious. They’re not
programming the drug pump. The person--they can’t--they’ve got pain relief--nitrous oxide. So, it turns
out that once that, again, serendipity steps in. It’s the nurses who are doing the drug pump
programming several days later after the primary anesthesia has worn off. It was so interesting because I was taking these engineers into this very, very, alien environment. It was alien for me too. And we were figuring out what was going on sort of in real time. It was so exciting. It was so cool. And it became really obvious to me. It was like one of those--boing! This is how you have to do it. I mean, you really have to be there. You have to actually the spend time, and you have to understand what’s going on and it’s not pure ethnography. Anthropologists get, you know, ‘You’re not really doing ethnography. You’re actually talking to people!’ You know, it’s ‘ethnography,’ in quotes, but yes, it’s such powerful stuff. And it was so much fun! It was so unbelievably fun to do projects. I remember the very first project I did. The first ethnography project I did as a consultant was for Hewlett Packard. HP, a brilliant company, was smart enough to know that the price of colored inks were coming down and that they were going to get to a point in the next six months where they were affordable in homes, not just in offices. I remember I got a color ink jet printer, and it was like, “Oh! Wow! This this thing is like $900! Oh wow!” But the engineers were smart enough to realize that they didn’t know how normal people printed. I took teams to four cities and states, and then also, Paris and Dusseldorf to understand how, you know, spend four hours with people to understand how they’re printing. And, of course, at some point said, “We’re here to talk about the printing? How can we spend four hours on this?” And there were all kinds of things, like if you want to go for a chunk of time, you kind of have to go in the evening. But families have dinner, and kids and all this kind of stuff. How do you get everybody involved, so we started taking dinner, you know, pizza, stuff like that as an ice breaker. Which is great. It turned out it’s a wonderful ice breaker. Hard--couldn’t find it--it was totally radical in Dusseldorf and Paris. It was like, finding take-out food was not easy at all because it was just not done in those days [in Europe]. Although we did get Fouschant to do some very nice ‘picnics’ for our Parisian ones. And I took teams of marketing, engineering, and human factors people out with me. And it was wonderful. We came up with new functionality. Came up with--learned so much. I’d have to say the engineers at some point,
they’re going to say, “It’s just a printer.” And you cannot, at that point, jump across the table and say, “What do you mean it’s just a printer?!” You know, because it’s your life, not their life. That was always really fun, managing the team at Amex, learning so much.

Yost: Throughout your time at Honeywell, and American Express, and as a consultant, you published frequently. Was that something that was encouraged by your employers or something you took on as extra, as professional development?

Dray: Yeah, it was just stuff I did. I was actually quite radical, especially at American Express, it’s like, “Why would you do that?! You want to go to a conference? What?”

Yost: In the years before 1993, did you think about publishing, in terms of building your name, building your brand, so that you might possibly have the opportunity to go out and consult?

Dray: No. not really. I wasn’t allowed. I was never that--

Yost: Because having researched and written on early history of IT consulting and the industry of computing broadly, that’s the way John Diebold, and a lot of people built their name as a brand. He wrote a book in 1952 *Automation*, and it made him famous at the start of IT consulting in the early to mid-1950s.

Dray: Wow.

Yost: We have this fascinating collection, all of his client reports.

Dray: Wow.

Yost: 700 of them.

Dray: Oh, my gosh.

Yost: Over his entire career.
Dray: Wow.

Yost: It’s one of the collections I used to write the book.

Dray: That’s amazing.

Yost: Yes, I mean it had to be about, oh, probably 15-20 years after the last report that he [John Diebold] felt comfortable, in retirement, donating them [previous proprietary reports].

Dray: Sure.

Yost: Passing those on to us. Can you talk about that decision to go out on your own? You were among the first, I understand, a colleague of yours, a woman, had made the leap, and was perhaps the first consultant.

Dray: Yes, Deborah, Deborah Mayhew was the first. Then there were... There was Deborah, there was a woman named Pat Billingsly. Let’s see... Gosh... there was Eric from HFE. Think there were like five of us, and four of us were women. Um, yeah. It was scary. But I was miserable. Shouldn’t admit this but I was miserable. There was, the year before I left, I had eight managers, I mean I just bounced around the organization for a whole variety of reasons. They could not figure out what to do with me because I was just strange. I didn’t fit any box at all. I ended up in IT for a woman who was mentally ill, but that’s beside the point, who didn’t seem to realize I’d had so many different managers. So, I was really trying to think about what do I want to do? I mean, I’m not happy, and there really weren’t a lot of other jobs around, I mean, because this was still a pretty young time and there still, there wasn’t like there were other—I mean, I suppose I could have tried to find a company that I would try to help build a lab, but I had already done that. It just didn’t seem like; I didn’t want to do the same old thing. And I got to thinking about how—I talked a lot with Deborah and she said, “Well, why don’t you think about going out on your own?” It was like, (heart palpitations). I swear, the first year I was out on my own, I was,
had, crude, diarrhea and throwing up in the morning because I was so scared the whole time. It was so frightening. Terrifying. But I decided finally, yeah, that’s what I’m going to do. That’s kind of what I need to do, and if I’m ever going to do it. I started realizing that I actually had developed a name and had some name recognition, at least. Maybe there’d be jobs. So, I jumped out of the IDS Center and somehow, I didn’t go splat. It was frightening. I remember, it had been a few months, and nothing had happened. I finally had decided I have to take a job. This is not going to be financially viable. I worked initially with somebody who had turned out to be the very wrong person, things were not--it was awful. It was just terrible. So scared. I was not getting anywhere, and I got a call from--well so, I applied for a job at Bell Labs, which is kind of a two body problem thing because my husband was here and working in mental health, in group health so it’s like, this wasn’t going to be a really great option for me. It was the only thing I could figure, and they offered me the job and I had to let them know by five o clock Friday and I’m going, “I don’t want to do this. I don’t want to do this. I don’t want to do this. I have to do it. I don’t want to do it.” And so, at 4 o clock, Arnie Lund called. Arnie who was at Ameritech at the time, and said, “I have a project. Would you like to do it?” It’s like, “Yes! I’ll do anything!” So, I ended up--he ended up saving Dray and Associates. My very first real project. And then after that, it was fine. After that, I’d kind of learned how to do it. Kind of figured it out.

Yost: Were you consulting exclusively for corporations, or government and other types of work organizations as well?

Dray: No. Corporations. I’ve never really done much government stuff. I did a little bit of work for the British home office. I did some training for them. But that was a long time ago.

Yost: I think the bureaucracy with government contracting makes it difficult to jump in.
Dray: It’s kind of a different set of people. It’s like, you have those folks and then you have the corporate people and there’s not a lot of overlap. In my days—at least there wasn’t—I don’t know what the current situation is.

Yost: I visited Computer Sciences Corporation and they were doing a lot of government work then, and I learned about that process. It’s quite involved, Federal contracting guidelines.

Dray: Yes. I’ve done studies where we’ve had government labs included in the study but not doing it for a particular government organization.

Yost: The year you started Dray and Associates, 1993, was the first year SIGCHI met in Europe, in Amsterdam. Can you talk about the significance of that and your role in helping to push the organization internationally?

Dray: Yes, that was so ironic because I didn’t go because the person I was working for didn’t think it was necessary. And she sent somebody else who knew nothing about it. And I said, “I’ve been pushing this now for however many years.” It started I think in 1992, with the whole EU formation and stuff. I had been saying, “We have to, we have to include Europe.” We have to do this, and I had been pushing and pushing for a long time. And was quite involved in getting that going. It was so ironic that I didn’t get to go. So anyway, annoyed. Annoyed wasn’t the right word but I’m being polite. It was very important. It was extremely important. The whole idea that HCI could be just focusing on the US when there was so much amazing work going on overseas and, you know, it’s like, that’s crazy. It’s crazy! It’s nuts! Nutso! So, once again, Susan’s going...but it worked! It worked! And that’s what’s important, really.

Yost: You did a considerable amount of consulting in the developing world and published on that.

Dray: Yes.

Yost: Can you talk about that?
Dray: Yes, that’s been a real passion of mine for a long time. I mentioned inclusion, I think. I mentioned it at breakfast anyway. I think inclusion has been one of the things that had been a real theme for me all along. We are as a profession, sort of professional strangers, if you will. I mean, that’s an anthropology term. But in a sense, we are people who are coming from a very different perspective than most people who are designing, until recently. Now it’s become a different thing, but back in those days it was a really radical thing. So, in order—what I have always seen is when you bring in different perspectives, either interdisciplinary, cultural, gender, age—it doesn’t matter, you learn new things. I mean that’s a lot of what ethnography is about, is learning new things from being around people who aren’t like you. It’s been clear to me from the very beginning that we can’t just be white, American, and European, men and women. We can’t just be, you know, that, or we’re excluding an enormous amount of creativity, an enormous amount of information, an enormous amount of stuff that actually could save us in the end.

When I look at a place like Kibera in Nairobi, the biggest slum in Africa. Well, there are debates, and you look at the creativity of what the people are doing with nothing, and the way they are using everything to make life work. Now, it’s a horrible life. It’s not a life you want people to have to live. But the creativity. If you could garner that creativity and use it in a way that actually helped those people to develop economically so they didn’t live in squalor—wow! That would be amazing! And I think in a lot of ways we have, as a world, we could learn so much from folks in Africa, folks in Latin America, folks in Asia, and try to harness that in a different way. That kind of belief has been kind of core for a long time. I remember, and I don’t remember which CHI it was, there was a guy Jacques Hugo from South Africa, and he as complaining bitterly that there was no focus in CHI on Africa. And I said, “Well, ok. Let’s build one.” I said, “Ok fine. I’ll help you. Let’s do it.” So, we put together the first CHI South Africa conference. There I met a guy named Gary Marsden, and Gary is one of the people who, in my opinion, is one of the greats of the greats. I mean unfortunately he died about five years ago, maybe more, very tragically. Massive coronary days before his 43rd birthday. Gary was a person who believed—he was
from Ireland. He lived in Cape Town and worked extensively and with the folks in the townships to
develop technology that would work for them in a very iterative, in a very ethnographic-based way.

When I first met him, he didn’t, he didn’t know about ethnography and he came to one of my classes, he
came to one of the classes I taught at that CHI South Africa, which my keynote was on 9/11. The 9/11.
That was an amazing experience. Anyway, Gary then extended his home to me when I came to Cape
Town after that and said you should not be alone now. Come and stay with us. So, I did and became
very good friends with him. In a lot of ways, that friendship and that--I’m just blown away by this man.
His commitment. He’s a computer scientist. He’s a tinkerer, but also a huge heart. Absolutely massive
heart. He was the person who sort of solidified this whole idea of the fact that you could and should
and must really learn about the developing world. So, there’s the Gary Marsden connection. I should
make it aside; I’m known for my heart socks. I always wear heart socks. And the reason for that has to
do with Gary, actually. We put together a workshop at CHI, human development for HCI, back when we
used that word. And I remember the second day, in a fit of Susan-ly exuberance, I happened to be
wearing heart socks that day, that was random. I remember, very American-ly, putting my foot up on
the podium and showing my heart socks, and saying, “In the US we have this saying that you wear your
heart on your sleeve, and if we’re going to make a difference, we can’t wear our heart on our sleeves.
We have to wear our heart on our feet. And so, I always, in fact, I got a present for you. I don’t know if
there’s someone in your life for whom heart socks would be appropriate.

Yost: Well, thank you very much.

Dray: But I give out heart socks. And now, so when I get out there, I have to have a heart on my arm
too [shows tattoo]. So, when I get there, I do the right thing. Sorry about that. Sorry. That’s a diversion.
But definitely--I’m known for my heart socks. The developing world stuff, partly, there’s the Gary
connection, and then there’s, I worked quite a lot with Microsoft’s development team, Emerging
Markets Group to go into really, really interesting, challenging places in China and India and South
Africa, just to, Kenya, et cetera. Anyway, to understand as much as we could, kind of what the true contexts were, and influence the design and development and also sometimes just helping the team to understand what the world was like was really one of the key things. The Microsoft team would tend to believe, as of course, we all would, when we don’t know better, the world is kind of like it is. You want to buy a computer, you go to the big box store, get in your car. First of all you look online and you figure it all out, what you want, you go to the Best Buy and you look at all the computers, you come home with one and set it up and that’s that, right? And that’s not how it is in India at all. At all. No big box stores. People don’t have cars. They’re going around on their motorcycles there. They tend to have, at least in the day we were studying them, there would be a trusted older person who knew about computers, whether they were related or not was another question, who was to figure out what the right model was and they you would get together your cash and you would go together with that person to the computer store that would probably only have one computer, and you would purchase it. But you would not go there until you had the money and you were actually going to buy the computer. So, the whole idea of us hanging out in computer stores was like, “Nah, uh.” It’s like, we got chased out. It’s so interesting, the things you learn.

Yost: You mentioned earlier how you mentored roughly 50 students, mainly women, and I imagine you also mentored professionally within UXPA, and SIGCHI. Can you speak about the role as mentor and the meaning it’s had in your life?

Dray: It has been the most rewarding thing in my life. These young people are inspiring. They’re brilliant. And, this is going to sound weird, but I think my role is to just listen and ask a question every so often, and to remind them how special they are. In Africa, I’m known as ‘Mama Susan’, and a lot of what I do is just remind people that they can do it. To encourage them to think, to have that idea. I was just talking to a young woman in Egypt who is so amazing. They just are all so inspiring, and this young woman has played a very major role in getting HCI going in Egypt and setting up a CHI chapter and she’s
incredible. Anyway, we were talking about how her life in changing, and I don’t know how much, this is sort of off the record. She was at a point of what her next steps would be and I listened to her a whole bunch and it became clear that HCI and AI, this whole way that these things are starting to come together would be interesting to her to and interesting to her institute but she hadn’t really thought of it as something she would actually be able to do in her institute. So, we talked for, I don’t know, an hour and a half, and mostly she talked about what was interesting and I asked about a couple questions and just encouraged her to talk to this person or that person. And sometimes in one particular case she would ask if I would introduce her and of course introductions, that’s easy. But just encouraging her to think and to trust her own thoughts and her own ability to see what is going to work for her. Not for me, but for her. So that’s kind of, that’s my philosophy, I guess. And sometimes that’s just a little thing. It doesn’t seem like anything to me, and is so easy to do, really. It’s really kind of like, it almost feels like, how could this possibly be helpful? But it is. It really is. And I realize that I didn’t have people doing that for me. And if I had, I think it would have been different. Life would’ve been, really, a lot more fun, you know, at least.

Yost: Yes. Mentoring, I think, is the most enjoyable part of my job. Here we have a leading archive in the world for IT history, so graduate students especially, come from all over. And then I work with some here in HSTM and Sociology. It’s tremendously rewarding. And I’m working with two sociology students from India right now, studying Indian IT, and it’s just been wonderful.

Dray: Isn’t it amazing?

Yost: Yes.

Dray: That’s so great. It’s so fun when they get the new job or make a connection then they write the next paper that’s a really seminal paper, you’re going, “Yes!”
Yost: Yes. You’ve won so many important awards, I’ll mention just some of them: Lifetime Achievement in Practice Award, SIGCHI, awarded in 2015, the Lifetime Achievement Award at UXPA in the following year, 2016, then the year after, being named an ACM Fellow in 2017. Can you talk a little bit about what these awards, these honors, and these organizations meant to you over your career, just in general?

Dray: Wow. That’s a really good question. They’ve been really surprising because I’ve always felt like an outsider. In a way that’s crazy because I wasn’t really an outsider but I always kind of felt like an outsider. Awards are for insiders, not outsiders, so it’s like, “How did that happen?” I also learned something very important. I sat on the achievement award--I’ve sat on award committees a lot, and I remember back in the day, there were no practitioner awards, and there was nothing, you know. A practitioner would never get--become part of the community. I remember Ben Schneiderman saying, “You’re a lovely girl,” but, I don’t know, he probably didn’t say ‘girl’, but that’s what I took from it. But I don’t think he said that. He would never say that. But you’re not an academic and the CHI Academy is for academics because I asked him if that was something that would ever be possible. Of course, no. It’s for academics. It made me mad. You think like, “EHRR!” Being a practitioner... So, Arnie Lund and I worked on the achievement committee to create, create a practitioner award, as separate from because there was no--because it was apples and oranges. You’re looking for really different things.

Yost: Yes.

Dray: And I think it was--I’m really glad we did that. I’m really glad we did that because I think that it made it clear that there actually is a role for practitioners in SIGCHI. It might be too late. It might be too late. And there had been talk at meetings at the EC that I have been at in the past about how actually, you know, SIGCHI only wants a particular type of practitioner; the practitioners that are Microsoft researchers, who really aren’t practitioners, you know. So, you know, I don’t know. I think--and frankly I
think a lot of practitioners aren’t interested in SIGCHI. This is totally off task. This is not on the topic. This is not answering your question. But so, I was surprised--I’ve been surprised. I’ve been unbelievably pleased, and extremely honored and sort of, you know, kind of overwhelmed by it, you know. Because I never did things to get the award. I never thought, like I want, I’m going to be the--but I also learned early on that women don’t ask. Men ask people. Women don’t. So, I’ve encouraged other women to ask for these things. And I asked Judy Olson if she would feel, at any point in time, whether she would feel comfortable nominating me for Fellow, and I said, “Just asking” if--no obligation or whatever. So, I don’t know if she nominated me. Somebody nominated me. And I asked her so maybe it was her. I don’t know. But that’s one thing I had learned. It’s a really interesting dilemma, you know. It’s like, feels weird. It felt really weird to ask her about that. But I--I think it is important.

Yost: Definitely. I think other people are asking--there are gender differences with, how often people push and ask.

Dray: Yes. It’s funny because I’ve had a lot of guys ask, me. So, you think, I would’ve learned it.

Yost: Yes. Before we conclude, are there any topics or themes or issues you wanted to discuss?

Dray: Well, I feel unbelievably honored to have had an opportunity to talk with you and to have had an opportunity to be a part of this profession. It’s been really incredible. And I’ve said to, with my father being in this state, and thinking about death, you know if I died today, I’ve had a pretty amazing life. I’ve had this opportunity to travel and do things. Oh! There is something I wanted to mention, and that is this whole HCI, HCI Across Boarders initiative that we did. And I want to, I’m going to give you my business card. This is an unusual business card. It is a--we developed trading card. So these, this is--we started having a series of symposia at CHI where we brought people from the so-called “developing world” together to discuss how-the development of HCI, in the “developing world”--I hate that term but I’m going to use it in quotes because there’s no other good word for it, unfortunately. What’s
happening, et cetera, there. We brought together people like Anisha Peters, who had basically been the person who has gotten HCI in sub-Sahara in Africa really, really going. It’s, it’s had, there have been progenitors, but she was the one who put together the first Africa CHI, as an example, where I spoke. I was one of two Americans at this conference. It was a remarkable experience. So, we brought together people, and we had an initiative where we brought people from regions. So, we had a Latin American in Guatemala City. We had one in Egypt. We had one in Swansea, I spent, I did a residency is Swansea.

We brought people from all over the world for that one. For each of these, we had people create trading cards. The idea of the trading card is that it would, it was a way of getting people talking, and all that kind of stuff. You had to have your picture, your contact information, and then on the back, you had to answer a bunch of questions. And there was a whole, huge list of questions, that you could answer. And they ranged from very practical things to things... one you had to, you had to answer what your magical power and your favorite word. Those were the two things you had to answer. But everything else was optional, you could answer in case you wanted. We had a minimum. So, this is my trading card from...

Yost: Oh, thank you very much. “If the user can’t use it, it doesn’t work.”

Dray: That’s been my trade--that’s been my tag line since the beginning. And you got to turn it over.


Dray: Well, it’s a political thing.

Yost: Ah. Magical power: saying thanks. Favorite word--

Dray: Interstices

Yost: Interstices. Miles flown: 1.75 million plus.
Dray: Yes, and I think Interstices is the greatest word because the interstices are like spaces between, those spaces between cells and spaces between leaves, and that’s kind of where HCI sits. We sit in the interstices, where we live. So, I just love that word. I think it’s great. But the other thing that’s on there that I think is important is this idea of fun. And this idea of whimsy and sort of— I always bring my magic wand when I’m doing workshops, and things like that because I think that encouraging people to be sort of goofy and outside the box. Which is really hard for some people! But however they can do it, so I’ll bring… I’ll go to the dollar store and spend a hundred bucks and bring Play-doh and crayons and pipe cleaners and balls and all kinds of shit. And each break I’ll put out new stuff, and people will, do what they do, and at the end, it’s amazing to see the things people have built out of all of this stuff.

Yost: Was it at a UXPA event you had people dancing?

Dray: That was at CHI, actually.

Yost: That was at CHI. Ok.

Dray: Yes.

Yost: Yes, that was really incredible. The energy of those young people.

Dray: We also had a three-legged race at one of them. Which was interesting, of course, because had people, Islamic women who wouldn’t, you know, so they held onto the ropes. But it was so much fun to have people doing a three-legged race and the hokey pokey. Really fun.

Yost: Well, thank you so much. This has been a tremendous honor to interview you.

Dray: Well, this has been lots of fun. Thank you so much.

Yost: Sure.

Dray: It is, I didn’t know what to expect.