



Professor Ernest Edmonds

Interviewed by

Elisabetta Mori

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Welcome to the Archives of Information Technology. It's 14th March 2023 and we are on Zoom. I am Elisabetta Mori, an interviewer with Archives of IT. Today I'll be talking to Professor Ernest Edmonds. He's in Sydney, Australia and I am in Tuscany in Italy in the city of Livorno. Professor Ernest Edmonds is an expert in human-computer interaction, specialising in the support of human creativity. He has been using computer in his practice since 1968, first showed an interactive artwork in 1970 and first showed a generative time-based computer work in 1985. As an artist he has exhibited throughout the world and his archives are collected by the Victoria & Albert Museum as part of the National Archive of Computer-Based Art and Design. He is Emeritus Professor at the De Montfort University in Leicester in the UK. He is honorary editor of the journal 'Leonardo', he is founding editor of the Springer books series, 'Cultural Computing' and of the journal 'Knowledge-Based Systems'. He is also founding director of Creativity and Cognition Studios at the University of Technology in Sydney. In 2017 he got an ACM SIGGRAPH award for Distinguished Artist Award for Lifetime Achievement in Digital Art and an ACM SIGCHI Lifetime Achievement Award for the Practice of Computer Human Interaction. He is a Fellow of the British Computer Society and a Fellow of the Royal Society of the Arts. Welcome, Ernest.

Thank you.

So, let's start with where and when you were born?

I was born in 1942 in London, in the UK.

Can you describe your parents and your family?

Well, we were a normal working class family in the suburbs of London and we had no great aspirations, but we were happy with that. I guess the thing that moved me on a little bit was we had at that time a school system which divided people according to examinations taken at the age of 11, and I from that point went to what was called a grammar school and the grammar school introduced me to more academic things than I would otherwise have met, and maybe that was an important step to lift my horizons a little bit.

So which schools and colleges and universities did you attend?

Okay. So well, my school was called Mitcham Grammar School, okay? And from there I went to Leicester University where I studied mathematics with a subsidiary of philosophy. And...

In what year did you go to Leicester?

I went in 1962, I think. So that university. Maybe it was 1961, so you may have to... And the philosophy turned out to be very important to me, so I got close to the lecturers in philosophy, we met a lot socially and I learnt a great deal from that. And it so happened that the head of the department of mathematics was a logician, very expert in philosophy also. So all this came together in a good way for me. I then went on to go to Nottingham University, not very far away, where I ended up studying for a PhD in logic.

What was the subject of your PhD?

The topic was the formalisation of infinite lattice logics. Now, I won't unpick that in great detail, but just to say it was a formal mathematical logical system that I developed that solved particular problems in mathematical logic based on some inventions by Polish logicians between the wars.

[00:05:15]

In parallel in your life you also started your art practice by painting. When was that and were people encouraging you to do so?

Well, the long story is that when I was perhaps ten I drew cartoons of my teachers and was very surprised to find that my friends, also aged the same as me, knew who they were. So I thought, oh, that's quite surprising that they could recognise the teachers in my drawings. So that was kind of, inspired me a little bit. But then by the time I was 15 or so, I was enjoying art more than any other subject at school and in fact

when I went into what in the UK was, and I think still is, called the sixth form – this is the 16 to 17 gap – I asked to study mathematics and art in the sixth form because these were, I found mathematics easy and quite interesting and I really wanted to study art. But the school headteacher said no, you can't do that combination. If you're doing mathematics you have to do physics. And I argued about this and in the end the headteacher said, well, if you do physics I'll give you free access to the art classes after school, which normally you have to pay for. So then I did in fact study art, but not for an examination, but I studied it, with a very good teacher. And so I was already committed to art before I left school, basically. And I thought of going to art school but I wasn't attracted to it because friends of mine who were already at art school didn't report back very promising stories about what they were learning, so I decided I would study mathematics, which was pretty easy, and left me lots of time to paint paintings.

So your first paintings were like figurative, but then you moved to something...

Yes, yes, yes.

And also to concrete poetry, right?

Yes, yeah.

And at a certain point something happens, so my question is, when did you see your first computer, what computer was it, how did you learn how to program and how did that influence your artistic production, but also your academic production?

Okay. Well, maybe I should start by saying that studying logic meant that I was already studying the theory of computing, it was very computational, but it wasn't to do with computers directly, but logic is the fundamental mathematical discipline that underpins computing. But to answer your question, I, after I'd been to Nottingham University I obtained a job as a research assistant in mathematics at what became Leicester Polytechnic. And Leicester Polytechnic had a computer, one computer, right? That was called a Honeywell 200. It was the Honeywell 200, it was a so-called mainframe computer, which meant that neither I nor almost anybody else was allowed

to go into the room where it was, it was isolated from us, but we could program it by using punch cards or paper tape and stuff like that. It was a very big computer of its day, although today you would think it was laughable. It had 8k of memory, not even a watch would have such little memory today. And how did I learn to program?

Well, I just thought it was interesting so I taught myself how to do it, out of interest. And so I started programming this computer for fun, you might say, or for intellectual engagement. And that's how I started.

[00:10:09]

And at some point you also became a lecturer in computer studies. How did you...

Yes.

How did you move from, you know, learning how to program by yourself to be an actual lecturer and reader in computing?

Well, because I had this job as a research assistant, which the head of department had encouraged me to take, so he was very good. But then one year on, when I was doing this job, he literally knocked on my door at home unexpected, and I was very surprised. I opened the door, there he was, and he said, I just wanted a word. He said, do you realise that your job is temporary and every year it gets reviewed and it may or may not continue. And I said, well, no, I hadn't really realised. I was young, I didn't really care about these things, and so I said, no, I hadn't really thought about that. He said, well, it is, so it's a bit risky. On the other hand, he said, I have a lectureship going in computing, which would be permanent and you'd have a permanent job. Would you like it? And so he meant that I should say yes, so I did. And so all of a sudden I became a lecturer in computing. And in fact, two or three years later I became head of the computing department in Leicester Polytechnic. So it was very strange. So I always say I became a computer scientist by accident.

So can you describe the environment at Leicester? I'm thinking also about perhaps your colleagues like Martin Campbell-Kelly and Mark Lee, I think you, the three of you were teaching human-computer interaction, interface. What, I mean can you

describe the environment and you end up from computing to specifically human-computer interface. And so how this led to the human-computer interface research unit perhaps?

Okay. Well, I'll try to make that a quick story. So Mark, Martin and I shared an office and there was one or two other people in that office, but we particularly were together. And we were interested in things like computer graphics, which was very new in those days, and all three of us were interested in these things. And we were interested in pushing the world forward, you know, what next would happen in computing.

So we are talking about nineteen seventy... nineteen sixty...

1969, 1970, yeah, that time. And, at the same time, there was an art college and a technical college which were brought together to make Leicester Polytechnic, right? And in 1968 I was making a relief painting, this was a thing called 'Nineteen', and I had used a computer program to help me solve a problem in logic, in mathematical logic, which I published in the 'Journal of Symbolic Logic', and I realised that I had a problem with this artwork that I could solve the same way, so I wrote a computer program, my first computer program in my art practice, to help me finish this work. But I had another problem, which is that I had decided that I needed to use spray paint to finish it, not just paint it with a brush, but to spray it to get a particular finish. So I went over to the art college and said do you have facilities to do spray paint, and they did. And I met someone called Stroud Cornock who was in charge of that and he was important too, because he had been working with someone called Roy Ascott, previously, and was interested in new media and whatever it meant, and so when he learnt that I was also programming, he helped me with the spraying of course. But we also became friends and talked about all this.

[00:15:19]

And I realised then, that talking with him, that this use of a computer was really an important step forward in my art. And he and I developed a paper which we read at a computer graphics conference in 1970 where we said the future of computers in art

will be interaction, right? And Mark Lee had just negotiated very, with a lot of hard work, I might say, to obtain a computer graphics facility for Leicester Polytechnic, a computer, a graph plotter, something that could draw lines. And so I used that to develop an interactive artwork, my first interactive artwork, with Stroud in 1970. And that this whole process was something that I worked with those four people really: Martin, Mark and Stroud, to talk about the future. And it seemed to me at the time that what we now call computer-human interaction, was at the centre of this future. And so the steps, important steps were, I've mentioned the artwork, but also in 1970 I gave a talk at a special meeting at the British Computer Society, where I said that the method for developing software for users who were creative or inventive in various ways could not be the standard, what was then in those days called the Waterfall Model, get the requirements, you know, and then the specification and then put... but had to be agile to use the modern one. So I proposed agile computing. I didn't use the word agile, I used the word adaptive. And then I wrote a paper about that, which was very difficult to publish, because nobody thought it was the right thing to do. I had one rejection letter which said, if you don't know what you're going to do before you start, you shouldn't do it. However, by 1974 I got it published. And this is maybe one of the first papers published on agile computing. And so this process, which is central to most HCI work today, came out of this work that we were doing. And by 1974-ish I was head of the computing department and I arranged, had it agreed that human-computer interaction, what we then called man-machine interaction for some strange reason, should be a research focus at Leicester Polytechnic. And so that we did. And already by then, years before I ever moved to Loughborough University, we were in touch with Loughborough University because Brian Shackel was there running HUSAT, and so we formed an alliance with those people. HUSAT was concerned with the human factors side of it, we were concerned with the implications of those human factors for the technology, how should you design software, what should the software architectures be, and all those kind of questions.

[00:19:47]

Can you describe Brian Shackel? What's your memory of him?

Oh. A lovely man who was, enjoyed life, was very warm and very persuasive about what he really cared about. And what he really cared about was that the human aspect of computing should be at the centre of people's concern, not at the periphery, right? So I got to know him best when the Alvey Programme began.

So, 1983?

Yes. So by – so we're going a long way forward – but by then I knew him a bit, but I got to know him because he chaired what was called the Man-Machine Interface Committee of the Alvey Programme, and I was a member of that committee. And he was in Loughborough and I was in Leicester, and that's on the same train line to London, so we used to meet for breakfast on the train going down to the meetings, and come back and more likely than not have dinner on the train coming back too. So we got to know one another extremely well through that committee. And of course what he did in chairing that committee, and I like to think I've played an important part as a member of that committee, was promote the whole subject in the UK in quite a big way. Of course, it had followed, the whole Alvey Programme had followed something which came earlier, which was known as the Roberts Committee. The Roberts Committee had reported an industrial view of where research in computing should go and it included as one of its, I think three or four areas, what it called man-machine interaction. So the academics hadn't noticed this area, but the industrialists did and they said this matters. And this would have been around about the early eighties that that came out. And I was already working very heavily in that area, so I was able to put my hand up and say, actually, I'm doing this. And the funding body gave me quite a lot of money to work in that area and then Alvey came, and then it became a very big thing.

So what do you think was your major outcome from this bit of research, what do you think were the results you achieved?

I think the main outcome was the understanding that the design process – I'll make this twofold really – that the design process for software had to be centred on the user and the potential user and that they had to be involved in that design process, that iterative design process. And the second part of it is that this implied that the

structure of the software had to be different to how it had been in the past, because the software had to be designed in a way that enabled the iteration to take place, so that a long way through the design process you could change your mind about something without it costing too much to make that change in the software.

So how all this can be related also to your artwork during the seventies? I'm thinking about 'Datapack' and 'Communications Game'.

Yeah. Well, what I was trying to do with those things was to explore in my art what the implications were of this new technology, and maybe I'll reply particularly by talking about communications then, because what I realised in the early 1970s was that it wasn't just computation, it was also communication that was really important. When I was building the network art piece called 'Communications Game' was just when the internet was beginning. So we didn't have networks of the internet and in fact I built, so 'Communications Game' is a networked artwork, but I built it by designing logic circuits and building them with a soldering iron. I didn't have the software.

[00:25:15]

Can you describe it?

It, the first version – there were many versions – and it's gone on throughout my life, I'm still using the concepts now. But the very first version had six, let's call them stations, places where people could be, separated, and in each of those places, it was very simple, there were lights that could come on and off, and there were switches that people could switch on and off. But, they weren't switching their own lights on and off, they were switching other people's lights on and off.

But can you describe, so the technical difference, like what was the computer you used or the infrastructure?

No, there was no computer. It wasn't, this was before you could do these things on computers. I did it later using computers, but at that time I built the system using the

printables of computing, but I built an electronic circuit that I literally built and soldered together with a soldering iron, using resistors and capacitors and whatnot. So I built logic circuits which basically are the basis of computers, but I built them myself. So it was a very primitive thing and of course, not many years later, I could do the same thing using computers and it was much easier, very much easier to do, which I did. And so it developed. But the whole idea was that the artwork was people communicating, communicating in quotes, if I might say, interacting maybe is a better word, people interacting with one another through the artwork. Okay? Now it's all kind of normal because that's what we do all the time. In fact we're interacting with one another through a computer system now, okay? But at that time it was a new idea. So the art was exploring these, the potential of these new developments in technology.

So let's go back to the early 1980s. So I'm thinking about, you know, the British HCI early groups, in Britain. I'm thinking about, also about the work of Christopher Evans at the National Physical Laboratory and all the other communities that were around. So what, you already discussed about Brian Shackel, did you have other relationship with the other centres? Were you an early member of the BSC HCI group?

Yes, yeah.

[00:28:21]

What are your memories of those early years?

Well, I mentioned, you've mentioned Chris Evans, so let me just mention him, he was important too, because I gave a paper at a conference and I think it was 1972, but it could have been 1973, I can't remember exactly, about designing, the design process that is appropriate for interactive systems. And Chris Evans was the chair of the session and he came up to me afterwards and said this was great and he really thought this was important work. And I got him up to Leicester Polytechnic in, I think it was 1978, to give a talk to us there about his work in this area. Interestingly enough, although he was only coming from London to Leicester, he was kind of keen on fairly

flamboyant things and he flew himself up in an aircraft to our meeting. I might say that he was an important character who I worked with in those early days a bit and had a lot of exchange with. And then, yes, I think that when I obtained my quite large research grant, which was in 1982 in this area, it was a million pounds in those days, which I think is probably worth like four or five million today, so it was a fairly big grant. And of course that meant that I and Leicester Poly became very noticeable on the scene and everyone wanted to come and see what we were doing and so on and so forth. So we became involved with many people around the country at that time, that was a sort of shift, a signal came up, oh okay, better take notice of these people. And as I mentioned, that really came out of the Roberts Report, which was a little bit earlier. And what we saw then was a big shift to try to work out, not just do research on human-computer interaction, but work out what the subject was even, you know. And the big problem wasn't so much amongst us, that community, but was selling it to everybody else. So in fact computer science departments in universities at that time were not very sympathetic to this human-centred view. And so most of us had to argue quite fiercely within our universities that what we were doing mattered. And that wasn't just me, that was everyone that I know all around the country were doing that at that time. Only later did it become acceptable to think that human-computer interaction mattered and that students should be taught about it.

So what were the other centres of HCI in Britain during the eighties?

Well, I think obviously Loughborough University, that I've already mentioned, was important. That's why I moved there, because it seemed like a right place to go. And HUSAT was the most important centre that looked at the human aspects; the psychology and the ergonomics of it. And the reason I went there was because I brought the technology side to them. But the other places would be University College London, York University, I would say would be the two most important places. And then Strathclyde University in Scotland. And in fact, Jim Alty, the late Jim Alty, who was there, we recruited to Loughborough from Strathclyde.

What's your memory of Jim Alty?

Oh, buoyant, happy, fiercely fighting for what he believed in, usually winning. And also a very good salesman, he'd worked for IBM once upon a time and learnt a great deal about how to follow on the message, which was important, of course, for us in those days. Yeah, a good friend and fun to be with.

You spent from like 1985 till roughly 2002 at the LUTCHI Research Centre in Loughborough.

Yes.

Can you describe your experience there across those, roughly a little bit more than 15 years?

Well, we did a great deal of research using the Alvey Programme and the European Union funding in all kinds of HCI work, often resulting in results that were interesting to industry, often in collaboration with industry. And we had a great team there, there were a lot of important people working on that.

[00:34:57]

What were the companies you worked with?

Who did we work with? We worked with aircraft companies like British Aerospace, Aérospatiale, we worked with Daimler, we worked with Lotus Cars. Dowty Rotol, who did aircraft components. HP, IBM, ICL. Lots of companies.

Is there any specific project you remember you were particularly...

Oh. Well, yeah, lots of them. [laughs] I think there was an interesting project called FOCUS, which was concerned with developing standards across platforms for design systems for the early part of the design process of technological systems, like aircraft, cars and stuff, and this arose because the aircraft industry itself was having difficulty dealing with moving data between different systems and understanding this early part of the design process. Many people would have thought that solving the problems

that FOCUS was trying to solve was just a question of designing standards for the transmission of data between one computer and another, but it turned out when we looked at it that the architecture of the software, for example, and understanding the processes that people worked were also very important. So it was a much more human-centred problem than people had thought. And we talked before we started this interview, informally, about Linda Candy, my wife, Linda Candy, who worked on, for example, that project and led a lot of the studies of human behaviour during the design process. And this was very important discovery because what we found, not just in that project, but I'm thinking of other projects also where we found the same thing, was that many people in the software industry would ask a senior manager, how does this work and what do your people do. And the manager would say, they do this, that and the other. But when you talked, as Linda did, with the people who actually did the work, they found that they didn't do what the managers thought they did, they did other informal things, especially like making phone calls to people and whatnot, and that relying on the management view of the process that's undertaken was very unreliable, because that was like a theoretical model of what people do, and that what we needed to do is find out what people actually did on the ground. And so this is very important for computing development to think about what does the end user, what does the person who's really doing the work do and how do they do their work. And I'll give you another example of why this matters. We worked with a design company – doesn't matter what it was designing particularly – but they bought a lot of Computer-Aided Design systems, Computer-Aided Design, and the managing director of the company told me how wonderful it was because now all their staff could do all this work on these Computer-Aided Design systems. But what we found out was that what the people did was they designed stuff on paper at home and then brought it in and entered that data into the system. They didn't actually design it on the Computer-Aided Design system at all, even though the boss thought that's what they did. So these kind of insights are really important to understand when you're building interactive computing systems, like what do people really do.

[00:40:14]

Okay, so your experience in Loughborough comes to a pause in 2002 because you move to Australia.

Yeah.

So in 2002 you became Professor of Computation and Creative Media and also director of the Creativity and Cognition Studios at the University of Technology in Sydney. What brought you there and what do you remember of that experience?

Well, maybe it's important to make one remark before that, which is that a little bit before that it became okay to talk about creativity and the arts, right, when in the UK there was a political change. It was called New Labour, came in, and there was a Minister called Chris Smith who produced a report on what he termed, and is now a phrase now used often, the creative industries. And his report said the creative industries are important, they make a lot of money, blah blah blah, you know, we need to worry about them. So all of a sudden it became okay to talk about creativity and so on. And so – and this is important because by the time that you're talking about, 2002, I was able to be quite clear that I was interested in creativity, I was interested in art and that that mattered, right? And, well, there's a long story behind that, but in fact we started a series of conferences called Creativity and Cognition back in 1993 as a result of these changes. But what happened in Sydney was...

But if I'm not mistaken, during the seventies you were not allowed to speak openly about your artwork in academia or...

Not if you wanted recognition or money, you had to find another way of doing it, okay? And what I mostly did was I talked about design and I didn't talk about creative design, but I found I could talk about conceptual design, which is when the most creative part is. So that kind of covered it. And that meant that I could get the resources I needed to do the creative work without saying that that's what I was doing. And, but we didn't make real contributions towards conceptual design in doing this, but we could also do this other stuff. So then when I was offered the

opportunity of this position in Sydney we'd been in Sydney a lot, so I liked the place, so you know, possibility of a job in Sydney seemed quite attractive, just because Sydney's a nice place. But when I was interviewed for the job they said, well, if you get this job, which was a research professor, and I have to tell you, in academic life I've been a head of department, I've been a dean, all that, but a research professor is the best job, because they pay you to do what you want to do, kind of thing. And so when I was interviewed for this research professorship they said, well, what would you do? So I was very straight, I said I would work on research into computing for creativity and for the arts, with the thought that if they don't like that they won't offer me the job and that's fine. But they liked it and they offered me the job, so that's what we did. So then, the Creativity and Cognition Studios worked, as it still does today, even though I've left, but my people who followed on from me are now still working on music and interactive art and so on there in computing. So this became possible because the mood in the world, not just in the UK, had changed and talking about supporting creativity was okay.

[00:44:56]

So I'm also thinking about art as a mean of bringing together HCI and perhaps also artificial intelligence. I'm also thinking about the book you co-authored with Margaret Boden, 'From Fingers to Digits'. Was that part of the result of your research in Sydney?

Yes, but it began much earlier. In fact, although I don't think we talked at the time, but Margaret Boden came to a meeting that I organised in 1976 at Leicester Polytechnic, called Human and Robot Behaviour, and I brought together artists, including the famous interactive artist, Edward Ihnatowicz, for example, spoke, and I brought together people from the AI department at Edinburgh University and Margaret came, and so on. And so we had a meeting discussing AI and art back in 1976. Maybe that was the first meeting that brought those two things together. Anyway. And Margaret Boden and I got to know one another very well and we started to talk a lot and we published the odd paper together, and so on. And then decided to write this book, which was really about the process of making art and being creative with computers, ranging from issue of the practice through philosophy

of that practice, through to practical interviews with artists who did it. So, yeah. And so that was a coming together really, so the book was a coming together of lots of things that had happened over the years and I think we were both very happy with that book for that reason.

Can you describe Margaret Boden in a few words?

Oh. Very intelligent, very sharp, blunt, very prepared to be very clear in her questioning in a way which is great, stimulating and challenging. A lovely person. Blunt and harsh, but also very generous. Blunt and harsh because she's a good academic, you know. Wants to be clear herself and for other people to be clear, but generous in spirit behind that. So a very lovely person, very important in the, not just in the UK, but internationally as a philosopher and cognitive scientist. I mean her books on the history of cognitive science are, you know, are classic books in the discipline.

So your role in Sydney ended in 2016 and in 2017 you received two awards for lifetime achievement, one from SIGGRAPH and the other from SIGCHI. Did you expect that?

No. It was a shock and amazing. And especially amazing that both should occur at all, but also that both should occur even on the same year, how about that? So, quite shocked. But wonderful, and I suppose what I like to think of is that it was a recognition, not just of me, but of the multidisciplinary developments in our world. But I've always felt that I've worked across disciplines and didn't that just show it, and didn't it show that it's respected to do that, and it's **respectable** to work across disciplines. And so I think everyone should take pleasure in thinking that was a way of saying yes, it's okay, and you can be kind of at the top level and you don't have to just do one thing. Because I think that it's actually in the intersection between disciplines where all the excitement usually is.

[00:50:03]

Yes, and I think you proved it with your career. So, if you look at your career for yourself, what is the proudest achievement, or what are the proudest achievements?

It's hard to know really. What am I proudest of? I think what we were just discussing, which is the achievement across disciplines, pleased with that. I think I'm particularly proud of my developments in interactive art, not to explain why I'm thinking this, but just that I have done things in interactive art and distributed art that I think have pushed the boundaries forward, working on art that interacts over long periods of time and changes over long periods of time, art where the interaction is between people in remote places and so on. And I think that's pushed things forward in a way that's very good and I'm very thrilled with that. And finally, I think I've been quite instrumental in making creativity important in the computer-human interaction world. Human creativity, and focussing, moving the focus from productivity to creativity.

So, what would you do differently if you had the time again, and why?

I'd probably do everything differently. [laughs] I perhaps would have tried to find out a bit more about how the world worked. I came not from a privileged background, like in the UK we have a school called Eton where everyone learns how to make it in the world and become Prime Minister, and so on, I didn't have any of that. I would have, if I'd have started again I would have liked to have learnt more about how to be successful and influential and maybe I could have then not been more successful, I'm quite happy about that, but I might have been more influential if I'd have learnt more of those tricks that those Eton boys seem to know.

Is there something we might have missed, something we could have discussed?

Well, I think only one thing. We talked about my work with Linda Candy, which is critical in this thing, but I think that collaboration with other people, including my own students, has been central to my work and people don't always understand that a PhD supervisor gets as much out of the process as the PhD student does. So all

people I've worked with have all in one way or another contributed to my life, to my pleasure in life, apart from my, never mind my career, just my enjoyment of everything. And it's interesting to notice that many of my PhD students are now good friends.

Is there anyone you particularly want to remember?

Oh, well, I think I should mention, yes, I think I should mention Stroud Cornock who sadly died not long ago, who, with whom I had those early discussions in 1968/1969, who really set me on a path, and I think he was very influential on me in terms of that friendship and what the discussions of that friendship led me to think, clarified my thinking. I think he would have said something similar, that I helped to clarify his thinking, it was a mutual thing. But I think it was quite an important thing. There are many people I should mention, but if I pick one, I think I should say him to start with. And of course, Linda throughout my life, even now is influencing what I'm doing.

[00:55:05]

Can you describe her? What's her background?

Linda studied English literature and French at university. She spent part of her time as an English teacher, ran an English department in a secondary school, then went into research, okay. So academically she became a significant researcher. She published a book not long ago called 'The Creative Reflective Practitioner'. And if you've heard of Donald Schön, who is important in our field, this takes his work further into the world of the creative practitioner, really important, and I think quite an important book for all of us. So academically, that's a quick, an inadequate but quick summary, but a very lovely person, even if she hadn't been doing those things.

So if we look about the future of HCI, what do you think are the biggest challenges and opportunities?

Well, I think we still have the challenges of changing the attitude to design and development methods. It seems strange to me, because I've been talking about it for

50 years, but nevertheless I still see many examples of poor design and development methods, not taking human beings properly into account. And I see large software corporations kind of selling themselves to institutions and the institutions buying their solutions without properly considering the human factors involved and the match between the solutions being offered and the need that the users have. So I think that we still have a long way to go in terms of design and development methods taking human factors properly into account. So that's a challenge, a big challenge. I think that the future is much more distributed and connected than it ever was, as we know very well, and I think the field needs to do a lot more work, not only on what I've just alluded to, but also on distributed and connected interactions. And finally, underlying all of this, there is still more work to be done to feed the concern for human creativity. Fundamentally important to us all is to enhance human creativity and there is a movement among people using what is currently called AI, although they don't seem to know what AI means, to be honest, but there's lots of stuff in that world which is inclined to try to take over the creativity from the human into the machine and we should be doing just the opposite, working out how to enhance the human creativity and enrich our lives. And that I think is probably the biggest and most important task for the community to work on.

What about AI and robotics?

Well, yeah, but it's the same thing. So, like if you have a robot, how do we interact with it? What does it do for us, how does it help us? It's the same questions.

What advice would you give to someone willing to pursue your career today?

Have a mission of what really matters to you and every opportunity that arises, measure it against whether it helps you towards that mission or not. Don't go for something that is just like more money or higher status, try to think what is it you really want in life, or what do you want to achieve or where do you want to be in life, and then try to think of all the opportunities that arise, which are unknowable, opportunities occur, turn up, and measure them against your vision.

Thank you. It's been a real pleasure talking to you today.

Likewise.

[01:00:28 recording ends]