



# **Dianne Murray**

Interviewed by

**Elisabetta Mori**

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Via Zoom

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*Welcome to the Archives of Information Technology. It's the 13<sup>th</sup> of February 2023, and we are on Zoom. I am Elisabetta Mori, an interviewer with Archives of IT. Today I'll be talking to Dianne Murray. She is near Edinburgh, Scotland, and I am in Ticino in Riva San Vitale, Switzerland.*

[00:00:24]

*Dianne Murray has been a usability and interface design consultant for more than 35 years. She was one of the earliest researchers in HCI in the UK for her time at the National Physical Laboratory in Teddington since the 1980s. Her roles in consultancy included evaluation of research proposals financed by the UK Government and the European Commission, as well as validation of interface design solutions. As an academic she lectured in several UK universities, such King's College London, City University, London, and University of London. She was a founding editor of Interacting with Computers journal, and subsequently its Editor-in-Chief until 2015.*

[00:01:16]

*Welcome Dianne.*

Thank you.

*Let's start with when and where you were born.*

OK. I was born in 1955 in Paisley on the west of Scotland.

*Can you describe your parents?*

My father was an engineer, later became a company director. And my mother had numbers of jobs before she married, then became a housewife, and eventually became a shop owner, after my father, after the children had grown up basically.

*So, did you have any brothers or sisters?*

I have two brothers, both younger than me.

[00:02:04]

*What was your family life like?*

It was very good. We, obviously I had disagreements with my parents as I got older [laughs], but, we kept on a very good relationship once I had children of my own, and, later when I moved to London, they were slightly upset about that, because it was so far away. But generally, it was a good life. And, I went to an all-girls school, run by nuns, St Catherine's, and St Margaret's senior high in Scotland, in Paisley. And... What else? I got on very well with my brothers when we were young, and we have still continued that, I see them a lot. So, you know, I, I have very, I have a very big family, extended family, so the family has become more and more important to me as we get older.

[00:03:08]

*Who were the important influences on you in your early life?*

My father I guess. He was a very bright man. He didn't have a great upbringing himself, they were quite poor. They were a single-parent family. But he took himself through college and became, eventually, a director of an engineering company. So following his example was a very good idea I think.

[00:03:37]

*So, let's talk about your education, like, which schools did you attend?*

Yes. I attended a primary called St Catherine's, and then a secondary called St Margaret's, and as I said, it was a, a senior high school. I actually sat the Eleven Plus exam, I think we were possibly the last year of that, and passed it and went on to a senior high school. And I stayed there for six years.

*And, which were your favourite subjects?*

I studied a lot of languages. I didn't study science, and I only studied mathematics to O Levels to... And then, I went on to study Highers, and then, special sixth-year Highers, sixth-year studies. My favourite subjects in that were definitely English.

[00:04:40]

*And what about university?*

And, I had a varied career in university. [laughs] So I was seventeen, and I went to Edinburgh University to study psychology. And, in Scotland you can go to Edinburgh pretty young in life, and I moved away from home, and, I think I was much too young at the time, and I didn't get on particularly well. I was very lonely, and I moved, I moved in a nice circle, but then that sort of broke up in the latter, after the first couple of terms. And although I passed my course, I decided not to continue with it. And, I did various odd jobs for about, mm, from about the age of eighteen, nineteen, until I was twenty-one or twenty-two. And then I decided that I wanted to go back to university, to study psychology again. But in the meantime, or in the interim time, I had been on a college course at Napier College before it became a university to do a course in computing, in computer, in computer software design, computer programming. And I was good at that, and I became very interested in that. So, I wanted to study psychology and computer science, and searched around for a course. Unfortunately there were only two courses [laughs] in the country at that time that did that combination that was later on to become an HCI degree. I found one at Brunel University in London, and decided to move to London to take up that course. And when I had got there, I discovered that I was the only person in my year taking that particular degree course. And, that was rather difficult.

[00:06:52]

*So let's go back one moment to the course you had in computing.*

Yes.

*What computer did you use, what... Can you describe your first...?*

It was a very early computing. We learnt about old-fashioned computers with punch cards and paper tape, and learnt all of the codes for those. Learnt programming language BASIC I think at that stage, and COBOL, [laughs] which was is now very very old. And when I went to university we studied languages like FORTRAN and COBOL, and not languages like you have them today, but entirely different mindsets

involved in writing programs for those particular ones. And we originally used punch cards to put in our programs, and they were sent to the University of London Computing Centre, and then the programs were sent back the next day. So it was quite an introduction to early computing, and it wasn't until my second year that we actually had terminals in the computer science department, and then eventually we had [inaud] microcomputers.

[00:08:19]

*OK, so let's continue about your experience during your university years. So, you had this joint degree, psychology and computer science, and you were the only one that had that.*

That's right. There were two people in the year above, and one person in the year above that. But we were a very very small group of people. We knew each other but not, we didn't really cohere that much. But it was difficult doing the course, because I essentially did half of the psychology degree and half of the computer science degree at the same time, and I had to do a lot of the physical arrangements of courses and classes and where I was going to be by myself.

[00:09:13]

*During those years you also had an internship at the National Physical Laboratory.*

Yes. The university degree, for, all the degrees at Brunel, was a sandwich course degree, which meant that you studied for six months at the university, and then went to work for an organisation, a company, a government department, or a research lab, for the other six months. So, one of my placements, I worked in a doctor's surgery, which had a medical interviewing computer called MICKIE, and I understand we're going to talk about that later, but I worked on the MICKIE computer, which had been provided by the National Physical Laboratory. And the next two years I went to NPL itself, basically as an intern, and I worked, not on MICKIE but on a follow-up to that, which was called Microtext. And at the end of two years, at the end of my second placement, they suggested that I join NPL as a scientific civil servant. So, I sat all of the exams, took the interviews, and got a place. So that by the time I graduated I had

a job to go to the very next week at NPL, as I said, as a government scientific officer, a researcher in a Government research laboratory.

[00:10:49]

*OK, so, let's talk a little bit more about MICKIE. I found out that it was also exhibited in the London Science Museum. Is it correct?*

Yes, that's right. I never actually... I wasn't there at the time that it was exhibited, that was, that was earlier. Though I do recall going to see it at one stage, and of course it's been archived by this time. It may still be there. But it was showing how you could use a computer to interview patients in a medical situation, and to identify by their answers. The answers were possibly yes, no, or don't know. And the 'don't know' answers were the ones the doctor who was involved, who was Dr Geoffrey Dove, used to explore further, and what might be the issue, if it might be a psychological problem rather than a physical problem. And, there was a variant of MICKIE also at Glasgow University Hospital, and the people there, and Geoffrey Dove, wrote a paper which we sent to the *British Medical Journal*, but unfortunately it was not accepted. But I do have a copy of it, so, I must remember to tell you about that one. And MICKIE was, not terribly robust at times. It was on a Commodore PET, and then on something called the RAIR Black Box, which is a very esoteric type of old computer, not many people had them. And I sat in the doctor's waiting room, and talked to patients, and interviewed patients beforehand, then sometimes went in to sit with the interview with the doctor. And then analysed the printout from MICKIE afterwards, and talked to the doctor about what had been an important part of the interview, and if MICKIE had actually helped in any way. So it was quite detailed.

*And, MICKIE was designed originally by Dr Chris Evans.*

Yes, at the National Physical Laboratory. He had been asked to set up a new informatics group, which was called man-machine integration at the time, one of the many words used to describe what became HCI. The other one that I like was a term called man-machine symbiosis [laughs], which was quite strange. But the MICKIE system was developed at NPL, my boss at NPL, Nigel Bevan, worked on that as well.

[00:14:03]

*Can you describe the environment at NPL?*

It was very much a research laboratory, and was much more like a university campus than any organisation. It was, or still is, the National Standards laboratory for the UK, and the division, or the group, no, the division, the department that I was in, was Numerical Analysis and Computer Science. And MMI was seen as a branch of computer science, but they had very few people working from it, or working for it. The atmosphere was very serious, but very innovative as well, because, we were allowed to do essentially blue sky research without necessarily having a particular goal or a particular product which we had to develop at the end of it. So it's rather different from, I would say, the research situation nowadays; there's very few places that do pure blue sky research. So... I might add that Alan Turing was also at NPL at one stage for a couple of years, and, that was interesting, to read about the history. They also had one of the very first computers in the 1950s and '60s. So it's got a long, long history. It's now no longer a research laboratory; it's been privatised, and the HCI Group that was there has been moved to an individual consultancy looking at contracts in usability and evaluation and interface assessment.

[00:16:03]

*OK, so, let's, let's think about the kind of research you liked there. We talked about MICKIE. Then there was computer-based training. I would also like to know a little bit more about Microtext. What was your role, and what happened, as it became a commercial product with Acornsoft?*

Yes. Microtext was what's called an authoring system. So, it by itself wasn't a computer-based training, or CBT, system. It was used to actually write applications, and those applications were mainly for schools, mainly for primary schools actually rather than secondary schools. And it was distributed to a number of schools all over the country. It was essentially specified by the HCI Group at the National Physical Laboratory, which was a very small group, Nigel, myself, another student, and, I guess a general administrator called Bob Watson. And we sent out the actual coding of Microtext to a small software company, and then did a lot of internal testing with it. So, I did some of the testing of that by going to different schools that had a copy of

Microtext running on the BBC Micro with tapes, actual tapes that you put into a tape recorder with the noises on them, which is how the BBC Micro first worked. Then, we got into developing what were called videodiscs at the time, and, there was an interface, a physical interface, an engineering interface, written, which allowed MICKIE, which allowed Microtext to control the videodisc player. So that was yet another level of interactivity with the system itself. My role was essentially doing some of the evaluation and assessment, and in contributing to the writing of the two manuals of the system, and contributing towards its eventual commercial development with Acornsoft. And we did also work with the Open University, and with a branch of the BBC that had developed the interactive videodisc. Oh, and also British Telecom, I had forgotten about them.

[00:19:16]

*And later there was also an [inaud] funded project on intelligent computer-aided instruction.*

Mm, that's right. I wasn't terribly involved in that. That was taken on by the HCI Group, and I managed to, I had had a promotion by this stage and I managed to get to work on some research into what was then called intelligent systems and adaptive systems, adaptive interfaces. And I had learnt about this from work that took place at Leicester Polytechnic with Peter Innocent and Ernest Edmonds, and I got very very interested in this area, and started doing research and publications in it. And that was from about 1983 onwards.

[00:20:16]

*OK. So, let's... Explain in a few words what are adaptive interfaces.*

Adaptive interfaces are those which then went on to become recommender systems, and to actually find out information about the user using the interface so that it could be amended and adapted and fit the user's needs and expectations better. So for that you had to have some information about the user, and then to have a representation of that called a user model within the system. So I worked on user modelling as well.

[00:21:03]

*And you mentioned Ernest Edmonds, right?*

Yes, that's right.

*Can you describe him?*

Oh. I'm not sure that I can actually. He was a very amenable, very friendly person, very bright, and he, he started the group when he left Loughborough University, and eventually it became the HCI Group at the University of Leicester.

[00:21:38]

*OK, let's talk about the British HCI community.*

Yes, that's right.

*The first thing to say is, that was a BCS HCI Group.*

Yes, that's right, British Computer Society.

*British Computer Society HCI Group that was formed. And it was made of several different HCI communities in the UK. So, can you describe the beginnings of the BCS HCI Specialist Group, that now is known as Interaction. And also, what were these main places and communities that were forming it?*

OK then. Nigel Bevan had the idea that we should have in Britain a group which represented what was then called human-computer interaction in the UK. This was after the example of SIGCHI in America which had just started, basically two years beforehand, and Nigel had been to the conference and was very enthused about it, and managed to persuade a number of like-minded people in some, places like Martlesham Heath with British Telecoms Research Laboratory, the Ergonomics Unit at the University of London, and various people who were consultants who were interested in setting up this group. We looked around for professional organisations to host it, and did consider the British Psychological Society, but that really didn't work out, because they weren't interested in things to do with computers at that stage.

We thought about the Institute of Electrical Engineers, the IEE, but again, the psychology side of it was too far from their interests. Nigel and I were members of the BCS, and we looked at that, and formed a specialist group of the BCS, of which there were many. And, we started off by having a number of meetings, in London to begin with, in a pub [laughs], of course, in the upper room of a pub in London, and we had a newsletter which I wrote inviting people to join this group, and, to come along to the first meetings. So that was essentially the start of it.

*Can you name, can you name the early participants?*

Peter Johnson at the Ergonomics Unit was one of the co-founders of the group. Russell Winder, who was very much involved in the early BCS HCI Group, and was actually leader of the group for a number of years. He sadly died a few years ago, and was a very good friend of mine, and was very important in merging the two areas of software engineering and software programming and HCI and psychology. Tony Ruben I think at Martlesham Heath was involved. He's no longer, as far as I know, involved in HCI. One of the other people was a consultant for a number of prestigious American organisations called Karmen Guevara. And another member was Dan Diaper, who was actually Peter Johnson's PhD student. Another person who got involved very early on was Gilbert Cockton, who I think was also studying for his PhD, or had just completed his PhD at that time, and he was in Scotland at Glasgow.

[00:26:05]

*How often did you meet, and how did you...*

OK. We met once a month, but we had a newsletter which went around as well. And we had the beginnings of email at University College London, the Computer Science Department, and they gave us UCL email addresses so that we could actually communicate outside NPL. NPL had its own internal mail system which was very innovative and novel for the time, but it couldn't talk to the outside world. So we used that as well. The other system for communication that we used was, an interactive online journal called BLEND, the BLEND system, which was run by Professor Brian Shackel. Brian Shackel was Nigel's PhD supervisor. So we got one

of the early teletypes, which weren't [inaud] new at that time, but there weren't many of them around. And the communication took place by teletype.

[00:27:26]

*So you named Brian Shackel. So, can you tell us a little bit about Brian Shackel.*

Oh, he was, I think he was an engineer by profession, and then became an ergonomist, and realised that the ergonomics of interaction was out with the computer, and the interface between the user and what were then various devices, and the early microcomputers, and then minicomputers with screens, was going to be very very important. He was at the University of Loughborough, and set up both, set up HUSAT, which was both a research establishment and an industry consultancy, and that became very very familiar to people in the HCI community, because they did a lot of work, and had a lot of impact on how people studied this new system of, of this new discipline of human-computer interaction. So he was very energetic and very, not opinionated but very, was a forceful personality. So he was just right to, to [inaud] HUSAT, and he did that for many many years. Some of the people that were there were Ken Eason, Martin Maguire, and two women, Susan Harker and Leela Damodaran, and they were the ones that eventually took over HUSAT when Brian finally retired, and then after Brian's death.

[00:29:31]

*So... I know that there was also a logo of the group. Is it correct?*

Yes, it is. That was the early logo, it looked as though it was somebody sitting on a chair, and it was H C I. It was quite a, a neat little logo, designed by somebody called Mark Shuttleworth, and we had that logo for a number of years until, I think in the Nineties, late Nineties, we decided that we needed a new logo for the Interaction group, and had a design company come in and test out various ideas with it, and eventually got the, the design that we have today, which carried forward into the design of a journal called *Interacting with Computers*, when it went to Oxford University Press. But again we can talk about that later.

[00:30:38]

*So, you had your first meetings in a pub, and when did it come, that the group was less informal and became more organised in some sense?*

Mm. It wasn't terribly long I don't think. And then we started having meetings in a room in a hotel, the, just at the Embankment in London, which was more central. And later on at a health research organisation in Islington, whose name escapes me I'm afraid. But, we decided that what we needed was a committee, and along with a newsletter, a means of communication, as I said before. So it really wasn't terribly long.

[00:31:27]

*So, in 1985 you and Dan Diaper started the process of creating the journal. That was *Interacting with Computers, The Interdisciplinary Journal of Human-Computer Interaction*.*

Right. Yes, it's referred to basically as *IwC* for short. We felt as though we needed the tagline to ensure that people knew what sort of journal it was, and although it was the journal of the BCS HCI Group, we also intended it to be international, and to cover many areas of human-computer interaction. So, we had three... No, we had one editorial board that was divided into three areas, one was computer science, one was psychology, and one was applications. So, when papers came in, they were allocated to one of these editors who then did the usual editorial process on it, and we went through a process of selecting papers based on the reviews. And, nothing was electronic at this stage; everything was on paper. And we needed six copies of the document of every paper to be able to send it out to editorial board members and reviewers, and to have copies for ourselves. Yes.

[00:33:03]

*So, you mentioned a lot of people from academia and research laboratories. So, what was your relationship with industry?*

I left National Physical Laboratory in the late 1980s, because things were changing, it became part of the Department of Trade and Industry, and things began to become more rigid and stratified, and the need to have deadlines and projects that had a

specific outcome at the end. And I wanted to continue my research. So, I went to, first of all City University in London, and then a number of different universities. And during that time I made contacts with numbers of organisations, and got consultancy work from them. I also did some work for what was my husband's new company. He had also been at NPL, working on microtext, and, on the interactive video side of things, and he started a software company, and I did work for them for, about ten years, not as a full-time job but obviously as a, as a part-time consultant that was brought in to do specific projects. So, personal contacts I guess is how you would say it. I mean a lot of the, the work of consultancy is still done like that I think.

[00:34:43]

*Would you like to say more about your family and your husband?*

Yes. I met him at the National Physical Laboratory. And, we have four children. So, the two girls were born in the mid-1980s, and I continued, I got maternity leave and continued my career through the time at City University and some of the other universities. And eventually I phoned another research job in, actually something quite different, in ethnomethodology, in the Department of Sociology at the University of Surrey, in a research group called Social and Computer Sciences, or SCS. And, I stayed there for two years before I got made redundant. After being made redundant at SCS I did consultancy with my husband Neil's company, which is called The Soft Option Limited, and did a range of evaluations, a range of assessments, a range of looking at user needs and requirements. They built video systems for computer-based training and applications for stands at exhibitions, that sort of, that sort of thing. I worked on other consultancy projects which are still, well maybe not still, but which were commercial and confidential and, I still don't want to say very much about those. Though some of the papers from my time at Surrey were actually published. There was a system called TMPI [pr. tempi], TMPI. So, I think there are a couple of papers that talk about that. And, at that time, which was 1997, I unexpectedly became pregnant again with twins, and that made life pretty difficult for a consultant. [laughs] But I managed to continue with being part of the International Degree at the University of London. So, I was the person who ran the HCI course, and later software engineering project management course, for students who were abroad in various different countries but who wanted to study computer science and

systems analysis at City, and one of those, not just at City but University of London, and one of those was a module on HCI. And I managed to continue working at home for the next, [laughs] next very many years, until I finally retired when I was 60. So that's now, oh, seven years ago. And, I haven't done any research since then I'm afraid. [laughs] I've done other things that we could talk about if you want.

[00:38:09]

*So you mentioned your, you know, the fact that you managed to have a family, and do research at the same time.*

Yes.

*What do you think was the role of women in the development of British HCI?*

So, there were very few women in the HCI field at that time. And, strangely enough, there were more women in computer science degrees than there have been in more recent years. But not many went into research, so I'm not entirely certain. You know, maybe some of them went into traditional systems analysis, or that sort of thing. And, certainly the students from Africa, from the Far East, studied the International Degree at UCL, went on to a huge range of jobs in their home countries. But, there were a lot of women from Africa on that particular course, which I was very pleased about. And, I guess the role of women was, not exactly overlooked, but wasn't as imp-, not important, but wasn't as, to the front, to the forefront as it actually has become now. But there were some very strong women in the start of the HCI Group, and women who were researchers across the UK, and America and some other places, and Europe, were chosen as members of *IwC*'s editorial board. So, we actually had a lot more women members on our editorial board than did other similar journals. So I feel very good about promoting women, you know, in that particular area.

*Would you like to name some of them?*

Yes. Jenny Preece, Karmen Guevara. [pause] I can't particularly think... Angela Sasse was one of the earliest ones. Some people in America, in CIGCHI, Mary Beth

Rosson, Marilyn Mantei. [pause] Many many more. I can't think of all of the names at the minute.

*So, you mentioned Karmen Guevara. She was based at EuroPARC in Cambridge.*

Eventually when EuroPARC opened in Cambridge, she went there, and she was looking particularly at the early requirement capture, or interactive systems, and then, subsequently, after she left there, became a consultant in the US. She moved to Guatemala, did some other work there, and then came back to live in Britain where she is working for government projects in pretty high-up positions. So she's still there in the HCI community.

[00:41:48]

*What was EuroPARC?*

EuroPARC was the European research facility of PARC, Palo Alto Research Center, in California, run by Xerox Corporation. They wanted to have a base in Europe as well, and there were a number of countries and locations considered, and eventually Cambridge was the one where the research lab was situated. They had, as a general overseer, manager, Tom Moran, from Xerox EuroPARC, but also had a number of fairly high-level researchers, one of whom was Bill Buxton, who came from Canada, and worked on haptic interfaces, and had a lot of input into making offices in a building communicate with each other, so that people could have colleagues who were physically distant but they could still work with them, like we are seeing with Zoom, they could interact with the individual. And the people involved in that were Victoria Bellotti and Paul Dourish especially. And went on to do a whole range of different things. Allan MacLean became quite high up in the hierarchy of that. And he had originally been at the MRC in Cambridge.

[00:43:35]

*Another thing I wanted to ask you is, is there anything that you think is peculiar to the British HCI? I'm not saying... Or maybe... No. I'm going to start again. [laughs] OK. So, what was the relationship with the US? Do you think there was, or, and there is, something that is peculiar to the British history of HCI?*

Right. There was a very close and friendly relationship between the two societies to begin with, and they were seen as equivalent in some way, because SIGCHI, Special Interest Group on Computer-Human Interaction, and the BCS HCI Group, pursued the same goals basically, but were run by different overriding organisations, the Association for Computing Machinery, ACM, in the States, and obviously the BCS in Britain. And in fact I was the liaison point for the two associations – sorry, not associations, the two special interest groups, being the envoy if you like to SIGCHI's committee, and then becoming International Chair. So I was on the committee for SIGCHI for, mm, about four, four, five years perhaps. So there was a lot of communication, a lot of people from HCI in Britain tried to go to the SIGCHI conferences. And by this stage the HCI Group had started running its own conferences, so there was a lot of interaction if you like between the two groups. I think it was generally felt that the US, or the northern American group, was more interested in practical applications, and more interested in the mechanics of interaction and interface design. So, I think of people like Don Norman, who looks into that with his various, fairly, fairly important books, you know, there's a turning point in HCI at that stage because of his book, which was, I think in terms of the UK, we were more psychologically and sometimes ergonomically focused, and we looked also at things like programming languages, or the software ergonomics part of interface and ergonomic design. We looked a lot more at experimental psychology, and had input to it from that. And a lot of the, the work that came was from psychology-based researchers who may have moved into computer science departments like Harold Thimbleby did for example. [pause] There was a dichotomy if you like, and the UK was very much closer to what was happening in Europe and to European researchers and cognitive ergonomics at that time. So, there was a bit of a bias in the US and Canada to North American work, and it took quite a long time before British work began to be recognised totally.

[00:47:57]

*If you look at your career, what do you think were the key decisions, positive but also negative, you made, and what difference did they make?*

I think key decision in, in choosing HCI as a research medium. I wasn't, at university I wasn't sure what I wanted to do. I liked both subjects, but HCI as a separate discipline and the main hadn't really been developed yet. When I joined NPL I found that, when I went as a, as a student there, I found that I really enjoyed that aspect and that I could maybe make a difference, and found out, as I said, from Ernest Edmonds and Peter Innocent about, and also from Richard Young to some extent, about using modelling and adaptive interfaces. The mistake I made, I think, in retrospect, I think it was a mistake in actually leaving National Physical Laboratory, because I would have moved much more quickly into evaluation and assessment and user requirements. I did a lot of teaching, teaching a course in HCI over various universities, [laughs] but I don't think I was a very good teacher. And I didn't really enjoy it very much. I, I sort of, lost my research background, or my... No I didn't lose my background; I lost my research focus in all of the teaching. So, I do, I do regret that, I must admit. But what I don't regret is going back to work after my children were born. I don't think I could have coped just with being at home and not being involved in something that was new and exciting. So it was good to, good to be able to continue that.

[00:50:14]

*And what are the proudest achievements of your career?*

[pause] Mm. Being the editor of the journal. It got, let me see, probably in the 2000s it had a very good index figure for the number of articles which were read, and we produced some extremely good papers at that time, and we started off a, a series of special interest editions, which I think really did help the field. It was looking at what was new in the field, and what was to come, the sort of, up-to-the-minute research that people were acting on and developing further.

[00:51:09]

*What do you think was the major impact of British research in HCI?*

I think nowadays there are various specialities that HCI has managed to help foster. So for instance, all the work on virtual reality that took place at Nottingham. And in Dundee there is a games industry which I think has been impacted a lot. The other

aspect is, to some extent from computer-based training, computer-aided instruction, that that has sort of veered off into an area of its own, become very commercialised now. Another particular area is in medical interaction. So we have a lot of machines and computers and medical situations now, and that was something that was found interesting and innovative at the time, both from the BCS HCI Group and from another specialist group called the Medical Computing Group, and the person that I worked for on MICKIE was a person who actually set up that group, and there was some, some discussions between both, and again, the Medical Interest Group went its different way. So I would say those sort of things. Oh, and of course the whole usability industry which didn't exist, you know, the concept of evaluating interfaces was, somewhat strange at the time, because it was the software engineers who did testing but didn't do anything like usability testing, didn't have concepts of what the user actually did, or required. So, that [inaud] to being fairly early on. One of the students I had in 1987 looked into evaluation, which was sort of starting as a sub-discipline at that time, and really has grown apace. Though, I think that the research side of it has really passed, that there's not an awful lot that can be done that hasn't been thought of before.

[00:54:05]

*What do you think are the biggest challenges and opportunities for HCI in the next ten years?*

I think, robotic interaction. The expansion of virtual reality. The whole aspect of medical informatics. So those areas I would see as being prime and being very much open to development and exploitation.

[00:54:40]

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

I would say it's a very exciting place to be, because there is so much happening in the future. It has a, a nice history, and it's got quite a wide history as well in terms of things that were actually carried out, and have carried forward into the sorts of computer systems that we use today. Certainly HCI has helped in the development of mobile phones, not so much the technology but the way in which we interact with

mobile phones nowadays. That. So there are exciting areas to be involved in. The other thing is that it's actually a very friendly research and applications discipline. We have very good conferences, people remain in contact with each other. We have now very many international associations with different countries, from Australia through to India, and there's a lot of potential travel involved, if people like doing that.

[00:56:05]

*Is there any question I might have missed, or anything you would like to say that I haven't asked you?*

Yes, I'd like to say something about women in the whole field. Luckily there are more and more women becoming involved in human-computer interaction, or in what the Americans call CHI, and, this is all to the good, but we still have issues with recognition and with the whole life-work balance. It's still very very difficult for women especially to manage the two of them. And, you know, as somebody who has done both, I can see what the problems were, and that they still exist. The other area in which the association is falling behind, and the whole discipline is falling behind, is in diversity, and in utilising those with special needs, and with particular requirements that they need for access to computers et cetera et cetera. So I think, there has been a move, a very strong feminist move over the past five years or so towards gaining accessibility and gender-free type of work.

[00:57:50]

*So, this the end I guess, so, thank you very much. It's been a real pleasure talking to you today.*

Right, well thank you very much, and likewise.

[End of Interview]