

Chapter 11

I Heard About the Arrival of the Computer: Hans Rutimann and Julianne Nyhan

Abstract This oral history interview was conducted between Hans Rutimann and Julianne Nyhan via Skype on 15 November 2012. Rutimann was provided with the core questions in advance of the interview. Here he recalls that his first encounter with computing was at the Modern Languages Association (MLA), c.1968/9. Following a minor scandal at the organisation, which resulted in the dismissal of staff connected with the newly arrived IBM 360/20, Rutimann was persuaded to take on some of their duties. After training with IBM in operating and programming he set about transferring the membership list (about 30,000 contact details) from an addressograph machine to punched cards. After the computer's early use to support such administrative tasks the MLA began investigating the feasibility of making the research tool called the *MLA International Bibliography* (information about accessing the present-day version of the bibliography is available here: https://www.mla.org/bib_electronic) remotely accessible. Rutimann worked with Lockheed to achieve this. It was in Lockheed's information retrieval lab that the system known as Dialog, an online information retrieval system was developed (see Summit 1967). He vividly recalls how he travelled the 3000 miles to San Francisco to deliver the magnetic tape to Lockheed so that they could make the database available online. He "jumped for joy" when, once back in New York, the data was available to him via the newly acquired terminal of the MLA. While making clear that his roles in MLA, Mellon and the Engineering Information Foundation have primarily been enabling ones (and to this we can add advocacy, strategy and foresight) he also recalls the strong influence that Joseph Raben had on him and mentions some of the projects and conferences that he found particularly memorable.

Biography

Hans Rutimann was born in Zurich, Switzerland, in 1939. He graduated from the Handelsschule KV, Zurich with a degree in *Germanistik* (German language and literatures). He is the Senior Advisor to the Scholarly Information and Information Technology Program of the Andrew W. Mellon Foundation and President of the Engineering Information Foundation (EIF). He was formerly International Program

Officer, Commission on Preservation and Access and Council on Library and Information Resources (1988–1999) and Deputy Executive Director of the MLA (1965–1987).

Interview

Julianne Nyhan (JN) What is your earliest memory of encountering computing technology?

Hans Rutimann (HR) It's a complex story and I'll try to make it very brief. It was about 1968 or 1969 and I was at the Modern Languages Association (MLA) in New York. The MLA at that time was in the process of introducing a computer, mainly to help with administrative tasks.¹ I was a research assistant at the organisation, having come from Switzerland just a year or two before, and I heard about the arrival of the computer and a whole staff was hired: an Operator, Punched Card Operators, Programmers etc. I had nothing to do with it, I was doing a study on the teaching of German in high schools. But then the computer arrived, it was a 360/20, which is the smallest in that famous 360 line and the preparations were on-going. In spite of its size, the 360/20 had a memory of only 12 K, later augmented to 16 K. A programmer in those days spent more time sub-dividing programs than writing whole programs.

Then there was small scandal at the organisation when the Head of Computing, as we called it then, had a romantic liaison with the woman who was hired to be the Operator. The Executive Director of the MLA was very offended by that, he was the son of a missionary, and he fired everybody connected with the computer. It just came to a standstill and he called me up and said "I saw in your resumé that you worked in a Swiss bank, so you're probably good with numbers. Would you like to make a go of it and try to help us with this new computer?"

The computer was huge, at that time it filled a room that had a double floor and extra air conditioning. I said I would think about it, thought about it and I said "yes" and went to training classes. But that's really leading into your second question, "did you receive formal training in programming and computing?" At that time the IBM customer service was excellent and I took courses in operating and programming. Regarding the work, the first task was to convert the membership list, an address list of about 30,000 members, which at that time were still on metal plates

¹It seems likely that MLA had already been interested in computing for some time. Photographs held in the Busa archive in Milan, dated to 27 June 1952 were taken at IBM's headquarters in New York. They include images of Prof. William R Parker, then 'Secretary of the American Modern Language Association of New York City' attending a demonstration given by Busa and others of IBM Card Punch Machines. He also attended the subsequent luncheon given by IBM in Busa's honour later that day.

on what we called an addressograph machine.² Those were all punched on cards. So that was my beginning.

JN Did you go somewhere to take the training?

HR Yes, IBM had a classroom building in Manhattan and I took courses, first in operating and then in programming. Usually we were a group of about 15–20. I took the courses and we successfully converted the membership list and went on to other administrative tasks. Within a year or so we had it up and running.

JN What did you think of the computing that you encountered on that training course?

HR I found it very interesting and not boring at all. It was all new to me, and obviously not my field, so I felt I was getting a valuable additional education through the courses. It was splendid and didn't cost us a thing!

JN And was it difficult?

HR Yes, I found it challenging because of the amount of precision that you had to work with. I remember the frustration I felt when I used a colon instead of a semi-colon; in programming that is, of course, deadly. I could never quite get used to the fact that you had to be very, very precise.

JN And what about the other people who were on the course with you?

HR They were from businesses all over New York that had ordered IBM equipment recently, or at that point, and needed to programme. So, it was a real cross-section of individuals, including people like me who were drafted in to do that. It was a new activity for most companies, and we were all in the same boat.

I remember another frustration was that they only had one mainframe available. So, when you finished your programme you had to line up and sort of sign up for your programme to be evaluated. At that time you had to run it against a compiler, which was about 1000 cards, to turn the programme that you have written into what we called the project deck. And that was another 2000 cards, so it took time. And every time you had to line up or sign up for your evaluation to realise that you'd made another mistake ...

JN Yes, so then it was back to fix the semi-colon again!

HR Yes, so I started going on weekends because that mainframe was less busy then ... I'm talking about a long time ago in the early 1960s.

²The most helpful description of an addressograph that I could find is that given in Wikipedia: <https://en.wikipedia.org/w/index.php?title=Addressograph&oldid=677429610>

JN What was the gender breakdown of students and instructors on the course?

HR As I recall it was practically 50/50. It was pretty balanced.

JN And the courses were in operating and programming?

HR It was billed as operation (which required a different set of skills to make those huge monsters run) and programming (the programming was, at that time, nothing very complex but we had to do something.)

JN And how long did it last for?

HR Those courses, on average, I would say about 5 months, 6 months.

JN Were you going every day or was it part time?

HR No, it was sort of twice or three times a week.

JN And later in your time at MLA you also worked on electronic reference tools?

HR Yes, well that was a parallel development. As we worked on converting all the administrative tasks (accounting, budgeting, membership services etc.) so that they could be done with computing, we also had an outside firm compose the *MLA International Bibliography* (MLA IB). By 'composing' I mean that we would prepare a tape with all the typesetting codes and they would then set the type from this tape. We did that for a few years, I'm now moving through the 1970s and we produced the MLA IB, which was at that time the largest reference work for English, Foreign Languages, Folklore and Linguistics. Then, I'm skipping a few years now, we also looked into the possibility of making this available 'online' and that leads to another anecdote!

We worked at that time with a company called Lockheed, the airplane manufacturer in California. They made databases available for online searching. The MLA was the first organisation to make a reference work in the Humanities available online. I remember very well, we produced a tape and stripped it of all phototypesetting composition codes. It was one of the large tapes, you know, the old tapes, I don't know if you recall those? [JN: No] They were quite large, about 15 inches in diameter. They were called the seven-track tapes. I had one under my arm and I took a plane from New York to Palo Alto, San Francisco. I drove to Lockheed and gave them the tape and they made it available online as the first international database in the Humanities.

And I remember so well, I flew back to New York and we bought one of those early online terminals. It was not really a terminal, it was a telephone with two rubber receptacles: you dialled the number, and you put the receiver in those rubber receptacles and then you typed in your search query. I remember I jumped with joy

when the first results came in and I marvelled aloud that this was from 3000 miles away and I got the answers that I requested. Of course the searching was nowhere near the sophistication of today but it worked and proved to be very successful. I then negotiated, now we're moving into the late 1970s or early 1980s, with the Wilson Company in New York, a publisher of articles and books for the library world. The *Wilson Quarterly* also had an online service. We produced the first CD of the MLA IB to be made available through Wilson. So that was all very exciting for our membership and the usage increased, we got royalties, and it was a success, as I recall.

JN What was the reason for selecting Lockheed?

HR Well, basically it was the only name in town. Lockheed, as I understand it, at that time got into computing and machine readable this and machine readable that and saw a need to host databases from all over. There was no such thing at that time but they, in fact, became the host. I couldn't go elsewhere and then Lockheed spun off that service and called it DIALOG.

JN Was it very expensive to work with them?

HR No, as I recall, it didn't cost a thing. I mean, they put it up online and the terms of the fee structure was that they somehow got a part of the hourly usage from each user. So, Lockheed got a cut too and they got their money in the end that way.

JN I wondered whether you were aware of any other projects in the area of Humanities who would have been working with Lockheed around that time?

HR No, later we prided ourselves on having been the only one at that time. The MLA IB was our most extensive work and it was, at that time, the only exclusively Humanities database. We prided ourselves on being the first from the Humanities because all the others that came before us were in Science, Social Science or other fields.

JN I know that we agreed the questions in advance but can I ask you one that just occurred to me? You mentioned that the first computer that arrived in the MLA c.1968 was procured for administrative purposes. Over time there was obviously a shift to include research-oriented ends. Would you reflect on that shift and on whether you were aware of a wider context to it?

HR It was really through the reactions of the membership that I became aware of a lot of work being done with the aid of computers, for example, word concordances, frequency studies and authorship tracking. We began to dabble in all of this but not very seriously because most of that work was done at universities. I saw my role as an enabler and that goes on to another question. Very early on, there was a very active group of people in the MLA, dealing with computers and the Humanities.

That was also the time that the journal CHum came out, and we organised an Association of Computers and the Humanities. I was on the board and they were looking at first for an opportunity to meet and to talk about issues and to plan the next steps. I made the conference room of the MLA available to a small group and that turned out to be the founding, not the founding meeting, but the beginning of the Text Encoding Initiative. And so the early beginnings of TEI were really at the MLA in a conference room that I made available to that group, just an aside.³

And you have a question “which people particularly influenced you and how?” I would like to mention Joseph Raben. I think he’s retired by now. He was the person who influenced me greatly, he was a professor at Queen’s College. He founded the journal CHum; he was also very active in the ACH. He and I worked very closely in those years on another aspect that I think I should mention. The MLA has an annual meeting, a fairly large gathering of its members, it usually draws about 10,000 members. Parallel to the convention we had book publishers organize a huge exhibit of scholarly books. Early on, Joseph Raben and I felt that it would be very interesting to have some computer-related activities at that exhibit. At that time there was a lot of talk about computer-assisted education, computer-assisted teaching, computer-aided teaching, it went by all kinds of names. We invited hardware manufacturers, software publishers and related industries to exhibit at the convention. At that point I visualised that this would be so successful that in the next couple of decades the computer-related exhibitors would outnumber the traditional book publishers. Well, it didn’t quite happen that quickly. At that time we had maybe three or four, I remember Apple was one of the first to agree to come. Now, when I look at the convention programme some 30 to 40 years later, I notice that there are quite a few more. They’re still not in the majority but getting there. Joseph Raben and I worked on that very intensively and he was a huge help because of his contacts and his knowledge.

JN You’ve mentioned about the TEI and your earliest engagements with the conference community, does a particular event stand out? Perhaps one where you had a sense that a community was being formed?

HR Yes, indeed, that was just a hard-core group of around 10 people and that of course grew over time. My real involvement with the conference community was, I think, later. We’re talking now about the 1990s, and later, when I became a Senior Advisor to the Mellon Foundation. That was (or is, I’m still doing that) in the Scholarly Communication and the Technology Information pro-

³TEI keeps documents about the early years of its existence (from 1987 on) at the TEI Vault. See: <http://projects.oucs.ox.ac.uk/teiweb/Vault/>.

gramme.⁴ That's where I really became involved in all kinds of projects in this country and also abroad. They included the sophisticated digitisation of medieval manuscript collections, infrastructure problems and projects like Bamboo (see, for example, Dombrowski 2014). But while I was at the MLA I just had peripheral contact with the group that was involved with Computing and the Humanities.

Can I just go forward on your list because you're asking a very interesting question? One of the questions is "what about scholars who were not using computers in their research? Do you have a sense of what their views on Humanities Computing were?" Yes, indeed I do, on many levels. First of all, I experienced a lot of hostility early on, in the late 1960s and early 1970s. I heard comments along the lines of "computers have no business in Humanities disciplines, computing is a scientific instrument and we don't want to have anything to do with it". And that, of course, changed over time with more and more people getting involved in computing and research. But the interesting thing was that at that time it was very difficult to get any kind of recognition for computing work in the scholarly community (and I think that's still a sore point today). So any kind of work, be that research with the help of a computer, or the creation of software, or anything related to computing, at that time anyway, got very little recognition. The desire of the Humanities Computing community was to get the same kind of recognition that you would get by having an article published in a peer-reviewed journal but that was not the case. But then slowly it began to change. I think today you get a little more recognition but from reading the literature, I realise that we're not quite there in terms of equivalency with a peer-reviewed article. That was my experience; the hostility against computing early on in the 1960s was profound.

JN Why do you think that started to reduce? Why do you think the hostility became less as time went on?

HR I think by sheer force of the evidence and the growth of the industry and the fact that you couldn't argue with it anymore and that it proved that it can be a very useful tool. The field of computer-aided instruction really missed the boat because at that time it announced itself as something totally new that would replace the teacher. You had to be with it or you would be out of it. That proved to be absolutely not the case because the teachers were as important as they always were and the computer was just a help in the teaching. Of course, now things have developed in so many other ways and the field as such really ceased to exist.

⁴For the Scholarly Communications Programme see <https://mellon.org/programs/scholarly-communications/>.

JN Something else occurred to me after I sent list of questions. I read about your work with the Engineering Information Foundation (EIF) and I noticed that part of its mission is in terms of the recruitment of women. I was wondering if you might say a little about that and whether you have some reflections on the role of women in Humanities Computing?

HR Women can be as effective as men, if not more effective, in computing in the Humanities. In my work at the EIF we have an explicit mission to support women, I mean, girls really, in 11th and 12th grade, to choose an engineering career because of the dismal rate of women in Engineering. It's lower than 20 % and it was recognised by many studies that this had something to do with the environment. There was a bias against women in engineering and that was exemplified by comments from teachers, other students and a not-very-welcoming atmosphere. That's one of the things they're trying to change. So, we're giving grants to the so-called STEM programmes – Science, Technology, Engineering, Mathematics – to change the environment in the classroom and also to do much more work on the equally important issue of how to retain women once they have started on their engineering career. So far we have been reasonably successful, the topic is being discussed and recognised. Large organisations have taken up the cause and we continue giving grants to organisations that have innovative programmes in helping to attract and retain women in Engineering. So my regard for women's work in Engineering, Computing, Mathematics is extremely high. I'm the President of the foundation so I think my views are well known.

JN How does DH fair in terms of attracting and retaining women?

HR I think very well. What I'm saying now is more anecdotal than documented. I work with a lot of groups here and abroad in digital projects (and I also worked with earlier projects that dealt with what we used to call library automation, where card catalogues were being converted to digital form or to computer-readable form). In those groups, I think the majority of the people that I met were women who showed an enormous capability and interest in the work they were doing. When I think of the DH projects that I've had to deal with, they really did not have the preponderance of men that you would expect in a scientific environment. The majority were women and very effective women.

It is extremely different than the traditional Engineering field, there we have slow-going change in the atmosphere and climate. In DH we didn't fall into the trap in the first place. We managed to stay out of it, luckily. I hadn't thought about that but that seems to be true.

JN Is there anything else that you would like to add to the interview?

HR I'm glad to still be involved in what I would call the advancement of computing in the Humanities.

References

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