Creating Archives for the History of Information Processing

Symposium

The Computer Museum sponsored a two-day symposium in May on archiving issues in information processing history.

In only 35 years, the Information Revolution has produced more historical records on itself in more forms than those available about any previous scientific era.

Symposium attendees included archivists and others from The MITRE Corporation, Lawrence Livermore Laboratories, Travellers Insurance Company, the MIT Library and Museum, Elecitherian Mills Museum, Clark University, the Charles Babbage Institute, the Annals of the History of Computing, and the National Museum of Science and Technology, Canada.

"Criteria and taxonomies must be established for collections," said Helen Slotkin, archivist at MIT, "The first step is the general taxonomy of the field, such as that provided in Bell and Newell's *Computer Structures* and adopted by The Computer Museum. The second step is the decision of whether or not to save any particular document."

Slotkin emphasized that a "record" is a "record" independent of the field, and contemporary standard archival criteria for preservation may be used. But contemporary standards are different from those passed down from librarians in the days when everything could be saved, shelved and cataloged.

Gordon Bell and Jean Sammet, both authors of historical "trees," argued about the placement of limbs and branches and agreed that getting the tree planted was the significant point. A forest with a limited number of species for various major collecting areas would then give the overall picture.

The importance of different collections was also discussed. Arthur Norberg, director of the Charles Babbage Institute, described its focus on the early papers of the individuals who formed the industry, and hence the evolution of the information processing industry. Computer Museum archivists explained its collecting policy—the Museum starts with hardware and then collects the accompanying documentation. It was recognized that each institution would provide archives in keeping with its primary role. For ex-

ample, universities and company archives would be expected to be primary sources for the papers on people and activities primarily associated with them.

Computer historian Paul Ceruzzi made the case that although we need to see documents of all kinds, the artifacts themselves are also valuable. A movie or a set of prints just does not provide the same understanding as the object itself, or even a few pieces of the object; and whenever those have survived they ought to be saved.

The symposium opened with a showing of videotapes and films of information processing, followed by a discussion. The films were grouped into three kinds: (1) "Vintage films" (at least 15 years old) that have been found and considered to be worth saving; (2) Contemporary documentaries made with a historic purpose in mind, which include the commissioned videotapes of The Computer Museum and the video-history program at MIT under the direction of Ithiel de Sola Pool and his assistant, Richard Solomon; (3) Videotaped presentations of lectures and conferences devoted to historic topics.

"What would we give for a film of Babbage and Ada Lovelace just chatting, not even saying anything of historical interest?"

Video archives create separate archival issues. Videotapes are easy to make and getting less expensive every day, yet they are time consuming to edit, expensive to preserve, and require special equipment to watch.

Martin Campbell-Kelly, a collector of vintage films who uses films in his classes at the University of Warwick, led off the discussion. He suggested that all films and video should be rated. This set the group into discussion.

Jean Sammet: "Outside from the caveat of cost (and I realize that is a big one), I think everything created on film ought to be kept. I want to see expression on people's faces. I suspect that everyone has watched a rocket launch and gotten a thrill from it. It's only a piece of machinery going up in the air.

And so what? Fifty or a hundred years from now school children will watch them and think they are hysterical."

Helen Slotkin: "There were 1,024 rocket launches that were filmed. The national archivist has asked, do we have to keep all of them? There were 150 failures and everyone agrees to keep them."

Richard Solomon: "What would we give for a film of Babbage and Ada Lovelace just chatting, not even saying anything of historical interest?"

Gwen Bell: "We not only have to be concerned with what we save but also what we create."

Helen Slotkin: "An archivist is passive. Only gathers things. In creating records, you are saying there are holes and we will fill them. It is conscious and after-the-fact."

Gordon Bell: "Guidelines are needed for making films, because the Museum commissioned two films of decommissioning of machines; one is great and the other is awful."

Ithiel de Sola Pool: "The important thing is the groups of people and their relationships and how this comes across on videotape. Factual information can be better transferred in other ways."

Helen Slotkin: "Unless you know who the user will be, you can't make the decision about what to save. If you decide to film a conference, it could be used five different ways, and in each case it would be done differently."

Gordon Bell: "Let's only deal with the producer/storer problem, not the consumer problem. Nice to have the Los Alamos tapes and the Museum lecture tapes—in the first case the people were in a group and defending their turf and in the second they were on their own—the star. We need a set of rules of how to cut at the source."

Barbara Costello (Lawrence Livermore Laboratories): "Accuracy in videotapes is relatively difficult; not the same control as books; especially on the made tapes."

Gwen Bell: "At present, for the produced tapes, there is no reviewing system as there is for an article or book. They don't have the same kind of close scrutiny."

Jean Sammet: "The script for the ENIAC tape could have been reviewed."

Ithiel de Sola Pool: "Yes, but my point is that Arthur Burks says that better on paper, and the interesting part is the film."

Gwen Bell: "But we commissioned the voice-over to help people understand the film."

Martin Campbell-Kelly: "I have the non-voice film and now I know that I want the voice-over version. Burks says exactly what people need to know. I bought the Fortran tape from the HOPL set because I thought it would be useful for teaching, but it was a disaster."

Jean Sammet: "What are you telling me? We shouldn't have made it? Shouldn't be selling it?"

Mike Williams (University of Calgary): "Looking at a cannibalized piece of the ENIAC, like the one at the Museum, doesn't do much for me. Why not just videotape everything and throw the junk out?"

Jean Sammet: "Wait a minute. There's a big difference between three dimensions and two. You want to see a picture of The Spirit of St. Louis and the airplane and get a feel for just what Lindberg had to contend with."

Martin Campbell-Kelly: "I travelled from England to see these pieces of junk and they do something for me. You'll eat those words when you see the Mark I at Harvard."

"A picture is worth a thousand words."

A gigantic computer flashes on the screen. The camera zooms in and we see a video display screen blinking "Hello, Mr. Murrow."

We're watching the Whirlwind starring on a 1952 segment of "See It Now." This film clip is not only worth a thousand words but 150,000 watts: the power necessary to turn on Whirlwind, which had less computing power than an Apple II. Old films can let visitors and scholars see historic machines in action—see what they were like and what it might have been like to program or work on one of them.

The video archives parallel the artifact collection—one often leads to the other. Usually the acquisition of a machine leads to finding film footage, but occasionally it happens in reverse.

The films and videotapes fall into three major categories: vintage films; historical documentaries; and lecture or conference videotapes.

Vintage Films

The Museum's Collection of vintage films, films made about contemporary computing to reach audiences of their time, is expanding slowly with the help of Museum members and other interested collectors. Through a lead from a Stanford Computer Science alumnus about a very good early film on timesharing, the Museum acquired *Ellis D. Kroptechev and ZEUS, his Marvelous Timesharing System.*

Two other films, *Machines That Think* (1922) and *Introduction to Punched Card Accounting* (1928) were added to the film and video archives on the suggestion of Martin Campbell-Kelly, an avid film collector and Professor of Computer Science, University of Warwick.

To date, the collection has only contemporary documentaries. The Museum would like to branch out and start a collection of vintage entertainment films featuring the computer as a central character. *2001, Deskset,* and *Metropolis* are some examples. We would like to know your favorites as we start to build this collection.

Historical Documentaries

Historical documentaries are films made to preserve history. When one-of-a-kind machines are being retired, the Museum urges that a film be made of the installation. A 15-minute documentary was made by Brigham Young University of the last Stretch (IBM 7030) in operation, at our request. Stretch, in its later years, was not the same as Stretch in the early sixties when it was the centerpiece of Los Alamos. The film, although important, doesn't have the snap of a film made for a contemporary purpose. Yet historical documentaries are essential to make when nothing else exists.

The Museum has also shot over two hours of raw footage of Harold Cohen making his art, and made one documentary that explains the 1981 version of his program. We will supplement that with the footage showing the more recent evolution of his computer art.

Lecture and Conference Videotapes

The Museum's lecture videotapes and assorted History of Computing Conference videotapes represent over two-thirds of the Museum's film and video collection. These videotapes of significant contributors to the development of information processing technology serve as a primary data source for scholars and students. The Museum receives requests from across the country for copies of specific lecture tapes. Included are first-hand opinions from Konrad Zuse, who believed that with the development of the stored program "the devil entered the machine," and vivid reminiscences of Grace Hopper, who described the pressures of working during WWII on the Mark I. These tapes provide direct accounts of crucial developments in computing technology and indirectly convey the environment and atmosphere of the projects. Each lecture at the Museum is videotaped for the archives. The History of Programming Languages, 1978 (HOPL), and International Research Center, 1976 (IRC) Conference tapes were gifts from private donors.

Film and Video Archives

Once received by the Museum staff, the film or videotape is carefully indexed and then sent to a professional lab to be copied onto videotape. The masters of the films and videotapes are then stored in a climate controlled room monitored by a professional staff. Videotapes are run once a year to maintain their quality.

The copies of the original films and videotapes are held in the film and video archives for viewing by staff and Museum members.