Five perspectives on interviewing: A roundtable discussion

Matthias Bärwolff, Andrew Russell, Andreu Veà, David Walden, and Jeffrey Yost

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[**Note:** If you are reading this on-line, table of contents entries, URLs, footnote cites, etc., are hyperlinked.]

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1 Dave: Introduction

[*Initially posted by David Walden on February 3, 2011: significantly revised and augmented on April 10, 2011.*]

In early February 2011, four members of the IEEE Computer Society History Committee undertook a written roundtable discussion about interviewing for oral histories and other historical projects. The discussion was held using a private blog. In effect I served as a session chairman for this "panel discussion."

Among us we have quite wide experience with interviewing and a variety of purposes in doing interviewing. All four original participants have quite wide experience with interviewing and a variety

of purposes in doing interviewing. The original participants were Matthias Bärwolff, who finished a computer science PhD in 2010 involving lots of interviewing;[1] Andrew Russell, a professional historian who teaches methods of oral history;[2] Andreu Veà, a pioneer of internetting in Spain and director of the WiWiW which has involved hundreds of interviews;[3] and David Walden, an ARPANET/Internet pioneer who has had eclectic experience with interviewing.[4]

Committee member Harry Forsdick is also participated in the roundtable activity, as a technology facilitator: Harry configured the private blog we used.

The roundtable started with each participant in turn giving a statement of his background in and perspective on interviewing. The discussion was active for a couple of weeks, including some follow-up observations about the participants' initial statements. After a couple of weeks the rate of exchange slowed considerably, and by the end of March, it was clear the discussion was over.

In early April a draft transcript of the discussion was circulated to other members of the Computer Society History Committee. In mid-April another member of the committee, Jeff Yost (a professional historian and deputy director of the Charles Babbage Institute[5]), who did not participate in the initial discussion rounds, provided a further perspectives on interviewing.

The following transcript has been edited and slightly reorganized from the original verbatim transcript. It is publicly posted on the History Committee's website at `http://www.computer.org/portal/web/cshc`.

2 Andy: Some notes on "oral history" interviewing

[Posted February 6, 2011, by Andrew Russell.]

Dave Walden asked me to start our conversation by saying a few words about my experience and broad thinking about interviewing. I earned my BA and MA degrees in History, but didn't think much about interviewing as a historical method until I was working on my dissertation in the Program in the History of Science, Medicine, and Technology at Johns Hopkins. My experiences there included a formal interview with David Mills, as well as a semester-long course in "oral history" — more about this term in a minute — where I did some interviewing and encountered a large and vibrant literature on the theory and practice of oral history.

A leading text in this field is Donald Ritchie's *Doing Oral History*;[6] much of what I say below draws on his account of the origins, development, and current state of the field.

1. Oral history is a particular type of historical practice in which an interviewer plans, records, and processes (i.e., transcribes) an interview, and makes the product available in a library or archive. Oral histories generate new primary sources that historians can use in combination with other types of primary sources such as letters, meeting minutes, official documents, artifacts, and so on. Oral history — and the interviews that comprise their raw material — is therefore not seen primarily as an end in itself, but rather a means to an end: a richer and more meaningful interpretation and understanding of the past. Oral historians typically distinguish their interviews from others based on the breadth and length of the interview, the detailed preparation of the interviewer, and the requirement that the interview be transcribed and made available (i.e., something more than a set of private notes).

2. Diversity, not uniformity, is the norm. We will see in our discussion that many types of interviews are conducted by academics in a variety of disciplines (anthropology, management, journalism, etc.) and, beyond academia, by a wide array of professionals, amateurs, and interested people. There is no uniform way to do oral history, but practitioners who have been

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[1]More biographical information is at `http://www.xn--brwolff-5wa.de/`

[2]More biographical information is at `http://www.arussell.org/`

[3]More biographical information is at `http://www.computer.org/portal/web/cshc/bio-Vea`

[4]More biographical information is at `http://www.computer.org/portal/web/cshc/bio-Walden`

[5]More biographical information is at `http://www.cbi.umn.edu/about/yost.html`

[6]`http://www.oup.com/us/catalog/general/subject/HistoryOther/?view=usa&ci=9780195154344`

meeting under the auspices of the Oral History Association — including Ritchie — have, over a period of several years, developed a set of "Principles and Best Practices."[7]

3. A final methodological point: Oral histories can be a useful source of information, but historians are wary of treating such information as "truth." Interviews can of course be an excellent way to bring greater clarity through hindsight, but memories are famously selective and unreliable. Historians who use evidence created in oral histories watch out for distortions, romanticizations, omissions, and/or oversimplifications. Indeed, oral histories typically contain conflicting accounts (see for example interviews with various "inventors" of packet-switching), and the distance between fact and memory is often a rewarding area of analysis. Oral history is therefore not a tool to help us distinguish between "correct" and "incorrect" memories of past events; rather it is a method for documenting how individuals have assign **meaning** to various aspects of their own lives. As Ritchie notes in the first sentence of the first chapter of *Doing Oral History*, "Memory is the core of oral history, from which meaning can be extracted and preserved."

There's plenty more to say, but I'll stop here and let others introduce themselves and their perspectives on interviewing.

3 Matthias: Interviewing for a computer science PhD thesis

[*Posted next on February 6, 2011, by Matthias Bärwolff*]

Frankly, I have no professional training background in history or oral history. I only realized that I was doing history type of research along the way when writing my PhD thesis on the end-to-end arguments[8] (a design principle widely seen to be at the heart of the TCP/IP Internet architecture). I also have to admit that I hardly followed any of the best practices just referred to by Andrew: when speaking to various interviewees I generally prepared a few questions and took written notes which I sanitized subsequently. But few of those minutes actually went right into my thesis; what they helped me most with was guiding my ongoing literature reviews — after all, nowadays with ubiquitous Internet access and more "raw" primary data out there than anyone could ever hope to digest in their entirety, my research often boiled down to choosing the right resources and judging their merit. I came across a number of very fine "research grade" interviews about the history of the Internet, largely from the Charles Babbage Institute (CBI) and a guy named James Pelkey.[9] Inevitably, of course, I also came across a frightening number of secondary sources full of fluff which made me appreciate the immense methodological difficulties in properly dealing with anything historic that hasn't been duly triangulated — I can only emphatically second Andrew's third point about methodology here. The bias on many issues is often so large that something which seems completely undisputed from some secondary source becomes really contentious once you ask two persons that had been on opposing sides. For example, did BBN in 1969 keep the Network Working Group (NWG) from doing end-to-end (host level) error correction, asserting an authority they shouldn't have properly assumed? Ask Steve Crocker and he'll say, yes they did. Ask Dave Walden, and the answer will be much different. Look up all relevant oral histories and RFCs from the time, and you may arrive at a reasonably sound overall account of the issue. That to me captures the essence of oral histories, and history in general. It is all about triangulation of as many primary sources as you can get your hands on. The amazing thing these days is the sheer mass of such sources — interviews, mailing lists, reports, conference papers, etc. — one can access with very moderate expense and effort via online databases. Doing the amount of literature review I did in my thesis simply wasn't possible, say, ten years ago. History, in a sense, has become very easy; the data and tools are all there.

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[7] http://www.oralhistory.org/do-oral-history/principles-and-practices/

[8] There are links to the thesis at http://www.xn--brwolff-5wa.de/publications/2010-10-PhD-thesis.html.

[9] There are links Pelkey's opus at http://www.xn--brwolff-5wa.de/public/index.html.

4 Dave: About my experience with interviewing

[Posted next on February 6, 2011, by David Walden.]

Having spent my career as a computer programmer or technology manager, I also didn't start with any formal background in interviewing. Nonetheless, I have done considerable interviewing over the years for a variety of purposes. Let me work backward, more or less.

1. For the TeX Users Group (TUG), I have done a series of interviews.[10] These have been done almost exclusively with the exchange of plain text emails. (The process is described in a paper about the TUG interview series,[11] in the second column of the first page.) Because the interview is in writing from the outset, there is no audio recording. Because these interviews are not done in real time, I can start with two standard questions and base successive rounds of questions on what I learn (a) from earlier answers, and (b) from research done in response to earlier questions.

2. On several occasions I have done in-person interviews for the purpose of getting a paper written for a publishing project in which I was involved and for which the interviewee was unwilling to write the paper I was seeking him or her to write or where the interviewee was reluctant to start writing the paper from scratch. In one of these cases, the result was actually in the form of an interview.[12] In another case, I interviewed the person and then wrote up her story in the third person (and added a note of my own at the end).[13] In two other cases, I did the interview, typed up my notes in the first person, and then turned my notes over to the interviewees as the first drafts of their papers; and the interviewees took it from there, doing multiple follow-on revisions to the papers and making the papers fully their own. In all of these cases, I took as close to verbatim hard-written notes as I could while the interview was going on, and immediately afterwards I typed up my notes in the first or third person (as appropriate) and passed them to the interviewee for review and correction. Thus, while my notes might not have been fully verbatim, the written results were words the interviewees were comfortable with as being his or her own.

   An aside: In general I find it much easier to take hand-written, as-close-to-verbatim-as-possible-but-surely-imperfect notes which I immediately type up and pass to the interviewees for correction and for "making their own" to the (highly) unpleasant (for me) burden of transcribing an audio recording. Perhaps the absence of a tape recorder also sometimes is more relaxing for the interviewee.

   I have been taking "quasi verbatim" notes like this for decades: (a) of meeting minutes (where I can immediately circulate the notes for correction by the participants); (b) of presentations (sometimes a full day or more) I attended (where my "verbatim" version is just as accurate as I could make it without a review cycle); (c) when interviewing people on the phone for various history or other projects (where I immediately send them my transcription of my notes and seek email feedback on the quality of my first or third person write-up).

3. During my business career I also did explicit interviewing (as distinct from less formal conversations), by phone on in person, to find out what customers or potential customers wanted (or sometimes why they didn't want what we had). Again, I typically attempted to take verbatim notes, which I occasionally found a way to have the interviewee review. In the later years of my business career I sometimes was involved with using the explicit Concept Engineering

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[10] http://tug.org/interviews.
[11] http://tug.org/interviews/tb95berry-interviews.pdf.
[12] http://walden-family.com/public/cqm-journal/rp07900.pdf.
[13] http://walden-family.com/public/cqm-journal/rp12700.pdf.

process[14,15] for finding the latent needs of customers or potential customers (needs they didn't know they had or could not articulate). In these cases I sometimes did the interviewing with a colleague (e.g., our sales rep to the customer) who trying to take the near-verbatim notes. I have also taught the methods of Concept Engineering, and I believe that some of the aspects of this approach are relevant to doing history interviews.

My goal in all of the interviewing I have done has only been to hear and understand what the interviewee is saying and believes and to document that in writing as accurately as possible. I have never had the purpose of providing an explicit oral history such as Andy described.

The accuracy of what the interviewee has said is typically not a significant issue in the interviewing I have done. In some cases (e.g., business interviewing), we were seeking their opinion or feeling however misguided or confused that might have been. In cases of history interviewing, I often have had a lot of background in the subject myself and can gently ask follow-up questions to seek clarification for what I think may be an imperfect answer. Also, in various cases of history interviewing, I am simultaneously in touch with others who were there and can get other sides of the story from them (and sometimes can get the various parties to reconcile their stories). In summary, my situations have been different from the oral history interviews such as those in the CBI archive.

4. I was involved with the production side of two oral histories my wife created (of her mother and my mother) and privately published some years ago. In this case, my wife tape recorded many hours of our mothers answering her questions, transcribed the tapes, and then significantly edited the transcript to make the story in the resulting book flow logically and without unnecessary redundancy and to remove things the interviewee said but didn't want in the final book. From these efforts, I have come to understand the importance of carefully archiving the original audio tapes and photographs that were collected as part of creating a book. As media technologies change over the years, it may someday be appropriate to reprint the book or to produce, for instance, an electronic edition of the book that includes snippets of the interviewee's voice in addition to the text and photos. In one case we can't find many of the original photos for a new printing we want to do. In the other case, we can't find the original tape recordings.

5. Finally, I also have seen interviewing fairly frequently from the interviewee's side of things and have some resulting opinions on the various methods used by different interviewers.

5 Andreu: On how I ended up creating (oral) history (?) without even knowing it myself

Introduction   [*Posted February 7, 2011, by Andreu Veà.*]

My work wasn't an original planned task. It all began in 1994 when I started my "field work" Doctoral Thesis (see the third appendix of this transcript). Even though I am an electrical engineer, I knew from the beginning that my work was going to have not only technical parts, but also social parts. My thesis ended up being a tree with very different principal branches: technological, historical, geographic and social.

It must be said that I did my research work while I was the Internet Manager of the second Telco carrier in Spain (Retevision, later on Auna, now Ono). So initially my only free "time-slot" to work on it was during lunch time, which is not much time...

Thinking a lot about what could I do during that lunch "spare" time, I arrived to a clear conclusion: to have lunch!!! So I started inviting to lunch to my "peers" (literally, as I knew most of them through their signing peering agreements when we started the EspaNIX — or neutral internet exchange in Spain — in mid 1990s).

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[14] *Journal of the Center for Quality of Management*, special issue on Concept Engineering, edited by Gary Burchill and Diane Shen, Vol. 3 No. 2, 1994.

[15] Excerpts from Chapters 13 and 14 of *Four Practical Revolutions in Management*, Shoji Shiba and David Walden, Productivity Press, New York, 2003.

That gave me a good background on the hidden history of the beginnings of the internet in Spain, which was carefully edited and published as a couple of books, which in turn were added as annexes to my thesis dissertation[16] (of just 1.014 pages :-)

This initial corpus of 64 recorded and transcribed interviews made me see that even when I let the interviewee to relax and think about the questions in advance, many events, ideas and situations were left behind, partly because they didn't come to memory (after many years), and partly because each interviewee reacted differently when facing a particular a question.

As I'm not a journalist, I had the "time" to enrich, edit and re-edit the same interview during a long period of time (one week for the quickest, six years for the longest). I created what I call the *WiWiW methodology*.

The needs

For first time in history, history is recorded directly from its main characters. It's now or never as many of the pioneers are now in their 70s and 80s, so we can't wait much longer if we want first-hand accounts.

We have now a unique opportunity to preserve the technological ideas and achievements that have transformed the world in only 30 years.

Book on the Internet and Web history (sold out in 24 days in Barcelona)

Our WiWiW approach

We are collecting the stories of the Internet pioneers (in digital audio format) to preserve it for future generations. Wouldn't it be great to hear Thomas Edison or Alexander Graham Bell's voices today personally explaining and detailing their inventions?

We are Designing and Creating a huge timeline — a sorted, open-source repository to make it possible to browse for information about the people who most contributed to the Internet (and the ARPA and NSF nets). In every single country, the same method, and the same questions are used: their Voices, Text, Videos, and Old Pictures and Artifacts are archived and sorted.

Our main two goals are:

1. To Collect all knowledge about the ARPAnet, NSFnet and the Internet: its beginnings, early deployments, protocol design, main milestones, and pioneers, through live interviews recorded and transcribed and a collection of old and new picture and digital resources.

2. To reach maximum Dissemination of the Pre-History, Internet History, the involved Organizations and the different access technologies.

So to achieve these goals, the interviews must be:

- Quick to Access
- Easy to Understand
- Methodologically Proven
- Equally Structured
- From Primary Sources
- All DIGITAL: All (Text, Photos, Audio, Graphics, Video)

Our main publishing platform object is the "interview" which is a complex document organized within a database with 64 different variables or fields per record (interviewee data, workflow data, body of answers, time stamps, et al.).

We have created a systematic and methodical process to give rapid access to the set of interviews.

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[16]http://www.tesisenxarxa.net/TDX-1104104-101718/index_an.html.

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The method

Once the interview is concluded, we start different processes of archiving and classifying the information obtained. All the pictures are reviewed, dated, renamed, and stored, and the audio file (in ultra-compressed DSS format) is sent to the assigned transcriber (depending on the interview language). Then the interviewer manuscript notes are scanned and archived also.

Once the transcription is ready, it always needs a third-party check, to verify exact dates and the names of other pioneers quoted, and in some cases to research complementary data.

Interview results are sent to be reviewed by the interviewee and his former colleagues who make direct comments on the text.

With all these collected materials we create a Multimedia Database, containing full transcribed text, scanned documents, original audio files, photos taken during the meeting, scanned pictures provided by the interviewee, the edited version of the interview, and also the different documents sent by third-party pioneers or colleagues.

Once the interview is free of typos and transcription errors and milestone dates are verified, it's sent to the interviewee, asking him to add whatever he likes to the document body and even to delete or modify something he dislikes or thinks is too personal to be published (this has happened in only one case).

All suggested modifications are introduced to the final interview, which is re-sent to the interviewee for a final revision and written agreement.

The overall multi-step process can take days or years depending on the interviewee and the number of reviewers.

At the very end of the process, once we all consider the interview as closed we start a time stamp archiving process (allowed by the PDF file format) embedding a time-stamp to the document.

Internal use of wikis helps to coordinate efforts and to add comments during the editing process.

Other free collaborative tools, such as Google Docs, are really helpful to be able to have our core-team meeting-minutes delivered to everybody at the end of each of our international online meetings.

Interview Results: Multimedia Documents

WiWiW internal interviewing methodology
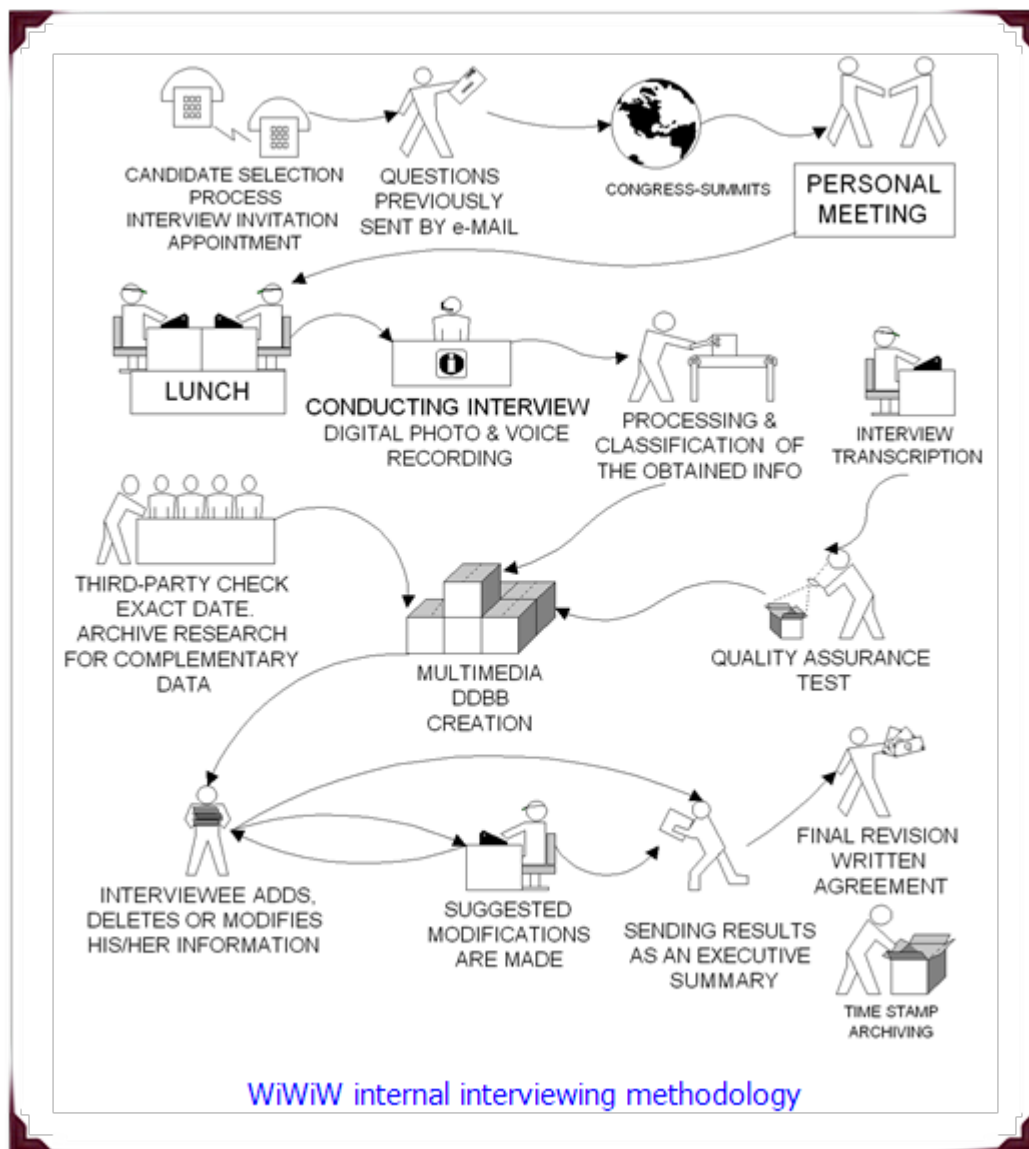
Advancing some important archiving issues and its solutions: Since day one our goal has been to create a system built to last.

That means that our documents must be able to be read, decoded, or accessed 50 years from now, an important issue, since protocols, operating systems, hardware and software evolve quickly.

This is still an unsolved problem, and quoting Dr. Vint Cerf: "This is not just a problem for the historians and archeologists of the far future, it is already a current problem for many users of digital technology. Most of the information of the space programs from 1960's (50 years ago) is 'lost' or let's say non-readable due to format changes or missing players for that kind of tape or disk. These are all real problems today and will grow increasingly serious as time continues its inexorable march into the future."

One of the best features of the Internet protocol system (RFCs or Request For Comments series) is that they keep the same simple (ASCII) format since their first document (RFC #1) on April the

The interviewee has many options and opportunities to re-edit, enrich and improve his own interview transcript.
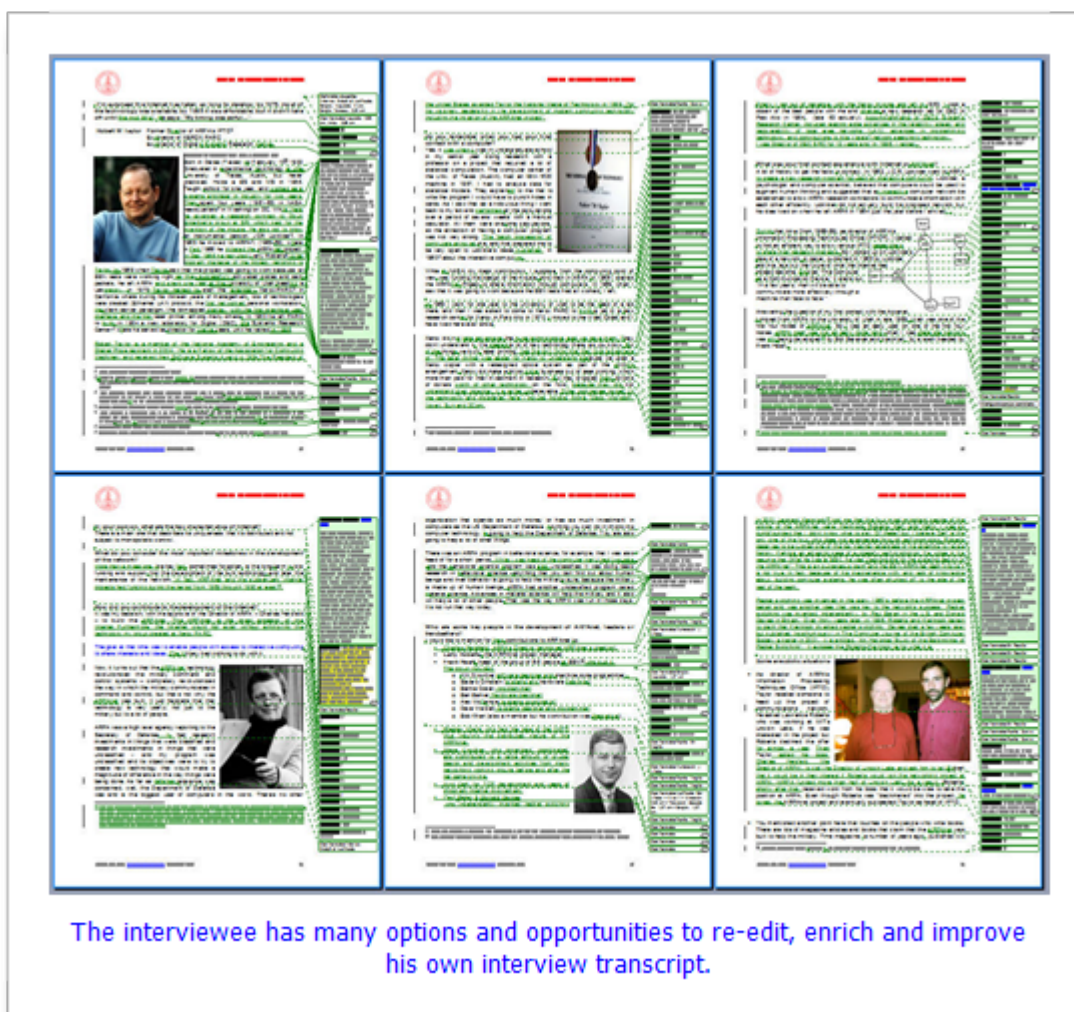
7th 1969. That's why they have endured for more than forty years and can be now found online.

At the WiWiW program, we are aiming for simplicity, but an ASCII (or plain text) format is not able to support images or scanned graphics. That's why we switched to a more advanced format: the PDF. The Portable Document Format is an open standard for document exchange, created by Adobe Systems Inc. in 1993 and used for representing documents in a manner independent of the application software, hardware, and operating system.

Even though this PDF file format has changed nine times (and continues to evolve, as new versions of Adobe Acrobat are released) it is by far the best option to store our data. We did not use the latest version, but one of the first and most simple (PDF 1.1 corresponding to the Acrobat 2.0 released in 1994). But since then a new standard for archiving in corporate, government, and library environments has appeared: PDF/A (as ISO 19005-1:2005, an ISO standard published on October 1, 2005; work done in ISO TC171). According to its definition *PDF/A: "is a file format for the long-term archiving of electronic documents. It is based on the PDF Reference Version 1.4 from Adobe (implemented in Adobe Acrobat 5 and latest versions)."*

Why do we finally chose the format?

Because PDF/A-1[17] identifies a "profile" for electronic documents that ensures that the documents can be reproduced the exact same way in years to come. A key element to this reproducibility is the requirement for PDF/A documents to be 100 percent self-contained.

All the necessary information for displaying the document in the same manner every time it is viewed, is embedded in the file. This includes all content (text, raster images and vector graphics), fonts, and color information. A PDF/A-1 document is not permitted to rely on information from external sources such as font programs or external hyperlinks). This way we ca have the picture embedding and multimedia features that ASCII doesn't have, using a format that is now open and has multivendor readers.

Other Internet History Projects

The basic story of the Internet is reasonably well known (e.g. from Abbate's *Inventing the Internet* [MIT 1999] as well as Hafter and Lyon's *Where Wizards Stay Up Late* [Simon & Schuster 1996]).

So a new publication that would only provide a bit more information on the core figures would have less impact and permanent value than a publication providing satisfying detail on the much larger community of Internet pioneers — and this is precisely our proposition's bigger strength.

What substantially increases the value of our work is that the list of completed interviewees always compares favorably with other samples of Internet pioneers. It includes most of the 49 individuals indexed in Janet Abbate's Inventing the Internet, the most respected academic study of the topic.

Some interesting selected samples

I have selected below some excerpts that clearly illustrate how important is for future historians to leave a recorded register of pioneers' memories. These recollections are always "triangulated" (finding independent confirmation of the information, using contemporary documents, emails, published sources, or other oral histories).

The following on the origins of the ARPANET is taken from my conversations with **Bob Taylor** (who hired **Larry Roberts** and was his direct boss at the ARPA IPTO Information Processing Techniques Office).[18]

> [BT]: You mentioned another point here that touches on the people who write books. There are lots of magazine articles and books that claim that the ARPAnet was built to help the military. *Time* magazine (a number of years ago) published two articles, about a year apart, that made this claim. I ignored the first article but after I read the second a year later I wrote them a letter wherein I wrote that the ARPAnet was not built out of military motivations. "The ARPAnet was built — and I gave the sentence that I gave you — to enable people with access to interactive computing to share common interests." In the letter I said "How do I know this? Because I'm the person who made that decision: to build the ARPAnet." They didn't print my letter in *Time* magazine. They wrote back to me thanking me for my letter but assuring me that their sources were correct. Their sources came from lots of other books, all of them wrong on this point.

Vinton Cerf added this when he read Taylor's assertion:[19]

> [VC]: Actually the usual disagreement is about whether the ARPANET was designed to survive a nuclear attack. It was not. The reason this is misunderstood is that Paul Baran's work *was* designed to achieve that goal for what was in effect a packet-switched voice network. That system was never formally built — as Paul himself can explain. But

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[17] http://www.digitalpreservation.gov/formats/fdd/fdd000125.shtml.
[18] interviewed at his Californian home on November 26th 2003
[19] Collected in Barcelona on May 14th, 2004.

30-03-2010 ARPANET Pioneers "collective memory experiment" organized by WiWiW.org at the BBN HQ in Arlington (Virginia, USA) LEFT 2 RIGHT:Andreu Veà, Barry Wessler,Craig Pattridge,Charley Herzfeld,Bernie Cosell,Larry Landweber,Al Blue,Les Earnest,Heidi Heiden Steve Wolff, Peter Sevcik, Bob Kahn,Steve Lukasik, Noel Chiappa, Dave Walden, Vint Cerf, Doug Gale, Alex McKenzie & Carl Sunshine.

Some snapshots from the "collective memory experiment" organized by WiWiW and hold in Virginia March 31st 2010 with ISOC's support

the packet switching concept did endow the network with some resilient, self-healing properties. The motivation to build it was resource sharing, as Bob Taylor asserts, but I think it also had the secondary justification that the computer resource sharing and communication applications of the network would enhance the technology of military command and control.

Charley Herzfeld former ARPA Director (Bob Taylor's direct boss, who helped to hire Larry Roberts for ARPA), give us a complete different point of view.[20]

> [CH]: At the time ARPA had a budget of US$ 300 million, which is comparable to what it is now, about 3 billion. There's this famous story that Bob Taylor tells and tells correctly that he came to see me for a million dollars to start the ARPAnet, and 20 minutes later he had the million dollars, but he leaves out the fact that I had been studying the problem with him and with JCR Licklider for three years, and I was persuaded. It was not hard to get the million dollars because I was kind of waiting for him to ask for it. I simply took the money from some other projects and moved it; when you got so much money it is easy to do that, and ARPA is one of the few places where you can do something like that.

> I had a rule that I would always have money for something new because I have a secret list of things I was willing to stop; I did not tell anybody. So, when Bob Taylor wanted his million dollars, I just knew where to get it; he was amazed that I was so quick because what he doesn't realized is that I have always been steps ahead in that game. He did well and we worked well together and I supported him, so I am not the father of the ARPAnet but I am the godfather. I pushed Bob a lot; he had two offices which was his usual office, then he had a secret room that he and I knew about it and nobody else. There are computer terminals in that room, not allowed in Pentagon because computers are supposed to be in basement. One day he took me in that office and showed me four terminals connected to computers in different places, and he had communication terminals running in each one to talk to the people at the computer but the communication terminal does not work across computers, so I told him "that's ridiculous, fix it!". For me the idea of having all these single lines is absurd because it is inconvenient, not to mention that the communication lines were expensive leased lines that have to be on all the time.

Benefits per Cost and some Conclusions

We have successfully conducted and completed interviews with several persons believed to be elusive or difficult or uncooperative. The existing set of interviews includes the core Internet pioneers; and, using the classic method of "snowballing" to good effect, asking each interview subject for the "most important" people and following up with an interview request when an individual is identified by at least two of the interviewees.

The new interviewing method used at this program is well defined. As quoted in the work of Charles Babbage Institute director Tom Misa's audit report [3] on WiWiW to ISOC:

> There are several different "styles" of conducting oral histories — with different purposes at hand, and with different audiences in mind. Andreu's method seems to be midway between two poles: the free-form "reminiscence" that is often favored in the technical community itself, which provided a chance for interviewees to "tell stories" and "get the memories" on tape; contrasted with the "research grade" oral histories favored in the academic history community that require extensive preparations and extremely detailed questions. Andreu certainly gives the Internet pioneers a chance to "tell their stories," while also asking informed follow-up questions. I believe he has struck a reasonable balance.

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[20]Interviewed in Washington DC on June 23rd 2005.

The fact of following a very strict methodology since the beginning has led to produce a very coherent set of materials, which can be read by author, by topic or even following the answers given to one question (What do you think about the future of the internet?) by all the interviewees.

Not having a pressure to publish, and basing our growth on volunteers from all around the world, has benefited us in being able to maintain production costs as low as possible. The average cost per interview lower than US$ 2,500.

Opinion of Vint Cerf about this work:

In this project, *Andreu Veà* blazes a trail for historians to follow. The history and pre-history of the Internet's creation and evolution will occupy the attention of serious scholars and historians for many years in the future. I am convinced that Dr. Veà's contribution will represent an important landmark in the field. Understanding the history and rationale for the evolution of infrastructure, fills a critical need for planning. One needs to know why things work or do not work and Dr. Veàprovides an extraordinary menu of specifics from which many lessons may be drawn. I hope you will find this work as interesting and useful as I have. –Vint Cerf, Internet Pioneer, Google Chief Internet Evangelist.

With my mentor and friend Dr. Cerf, showing me the "tips" of DC.

6   Dave: On the evolution of (my) memory

[Posted on February 9, 2011, by David Walden.]

Memory

In his 2011-02-06 note to this roundtable, Matthias, gave an example of differing memories of history by referring to, "did BBN in 1969 keep the NWG from doing end-to-end (host level) error correction, asserting an authority they shouldn't have properly assumed?" and noting the Steve Crocker says BBN did and that I would tell a different story. Perhaps Matthias has a statement from me in his archives (we communicated a lot while he was working on his thesis), but the story I would tell today is perhaps not so different than the story Steve would tell. Here is my version today: Frank Heart of BBN did assert the end-to-end error detection (i.e., check summing) was not necessary (his quote was something like "the network [or maybe it was the Host-IMP interface] will be as reliable as the accumulator in your computer"). And, anyone who knows Frank (which the young NWG people, mostly university students, did not when they first met Frank) knows that he speaks loudly and authoritatively about what he believes. Thus, the NWG people did go away with the probably technically incorrect decision not to implement end-to-end error detection. But I do not see BBN as having asserted any authority over what the NWG was doing — just a loud voice (which some other members of the BBN team probably already didn't agree with). Not so long later, we began implementing more checksums in the inter-IMP communications because dropped memory bits broke the distributed routing algorithm.

A point to make is that memories are not just different: they change over time. There are details of the IMP project that I surely knew well as they were happening. By the time Katie Hafner wrote her book, some of those memories were no longer accurate. Based on the exchanges Katie initiated among the various people she was interviewing to reconcile differing memories, my memory was changed; and it has probably drifted again since then.

I am painfully aware of how the memories I have for a historic situation evolve over time without me realizing it, partly just through the passage of time, but partly reinforced by the informal stories all of us tell about "what I did when I was young." Thus, I appreciate an interviewer who brings to my attention that other people have different memories and who pushes several of us to try to reconcile our memories. Katie did this when she was writing her book. Matthias did this when he was writing his thesis. (This is happening all the time on the Internet History list.) From these and other similar examples, I suspect that it is easier to get correct information when the researcher is (or a collection of interested parties are) working on a narrow project and has (have) reason to interview lots of people about the same thing. Of course, this may result in less thorough interviews (not full oral histories) of each person and may result in no interviews being archived for future historians (for instance, I don't know where all of Katie's transcripts are or if she had written transcripts of her audio interviews created). From my point of view a book like Katie's or Matthais's can be more accurate for the narrow range of time or topics it covers than books which depend on fewer more-in-depth interviews and oral histories already in the history archives.

Unfortunately, it is hard to know which books are carefully researched with conflicting memories reconciled and which are not. For instance, some people think that Katie's book has to be less authoritative because she is a journalist. However, this is wrong. For the period and events it covers, Katie's book is the most reliable source I believe, because she was rigorous about getting everyone involved to reconcile differing memories. In contrast, Stephen Segaller's book that was derived from his interviewing for the Nerds 2.0.1 TV video is very suspect. Because the interviewing was done primarily for a TV documentary, their goal was spontaneous, lively answers. There was no opportunity for an interviewee to correct a statement even if he realized it was inaccurate or an exaggeration. Also, Segaller's TV project interviewed many fewer people per year of history than for instance Katie did because he was covering so many more years of history; thus he didn't have as many points of view to use for catching instances of differing memories about a particular incident. Eventually bits of what interviewees said were edited into the final video to tell the story Segaller

wanted to tell. Then the book was written based, I believe, on only those interviews he had done without the interviewee's even knowing a book was being written.

There is another type of book that bothers me — books such as Abbate's book on the Internet and Waldrop's book on Licklider and making computing personal. These books were obviously both done in a scholarly fashion (although Abbate is an academic and I see Waldrop as more of a journalist). What bothers me is that I am mentioned (quoted?) in the books based on things I said in interviews in the history archives (e.g., an oral history at CBI), but they didn't check back with me, a living person, to see if I still had the same memory of what had happened in the past, or had my memory changed, perhaps in a direction of greater accuracy as others have interviewed me over the years and I've had to dig for more substantiating data and give up obviously wrong memories.

In summary, if the living people are around, I think history researchers (pros or amateurs) should do their best to get them talking to each other, sorting out differing memories and exchanging information some of them didn't know, while the researcher listens. At Andreu's collective memory experiment in Virgina in March of 2010, it was impressive how many sides there were to the story of the privatization of the Internet. (How does this information get paired with the recent peer-reviewed papers on the topic?) I'm not sure the classic one-on-one oral history is the best way to go anymore given today's communications technology. For instance, maybe a professional historian should be working with threads from the Internet History list and organize each into an accurate summary of one bit of history, and these should go in the scholarly history archives. And, of course, there is the wiki approach to collecting the history of particular topics that might be organized by a professional historian (e.g., the on-line version of Andreu's collective memory experiment).

A follow-on thought comes to mind.

Disintermediation is happening in all fields. Middlemen are being skipped. Clearly this is also happening in the area of history, e.g., the wikipedia replacing the Encyclopedia Britannica with its articles written by (presumably) experts. The Internet History list is also a good example. History is being constantly and deeply discussed without there necessarily being professional historians involved (although I am sure there are some on the list). Also, there are many wonderful websites focusing on bits of computer history, such as Dan Murphy's website on TENEX and Von Vleck's website on Multics. I hope the professional history world is working on figuring out how to capture such information and preserve it.

I am reminded of something I read in books by E.O. Wilson and by Stephen J. Gould. They (independently) make the point (approximately) that there are two ways to have impact and make a career in biology. The first is discover something truly profound or innovative. The second is to collect things, organize them, and categorize them — a taxonomy approach. With enough accretion and aggregation, eventually something profound and in retrospect innovative can appear. I suspect that there are parallel paths for professional historians. I hope that some of them are focusing on collecting and organizing amateur history discussions and postings rather than writing their traditional original papers.

I hope I'm not completely off base in the paragraph above. Hopefully Andy can set me straight.

Question

A follow-up question or two for Andreu when he can find the time (perhaps sometime after this roundtable discussion is over): Can he say a bit more about the team of people he has helping him with the WiWiW project and about the IT infrastructure they are using that is aimed at maintaining the project archive more or less in perpetuity. How was this all organized and funded?

7 Matthias: Adding value to interviews

[*Posted on February 11, 2011, by Matthias Bärwolff.*]

Dave just raised an interesting point, and I think it is one also pertaining to Andreu's detailing of his previous and ongoing work: the question of how to turn interviews into something value-added, something that makes a point or, even better, a difference of some sort. I, too, found Hafner and Lyon's book an extraordinarily valuable and well-researched book. But given the lack of scholarly appearance it might seem to a reader that it is not as authoritative as, say, Abbate's book — when, in fact, Abbate's book is probably the less well founded in historical fact (provided such thing exists in the first place). And then, of course, you can make really nice interviews, and leave them the way they are, without trying (or managing) to pull anything out there — but then these interviews may not have as much of an impact, not inform any higher-level reasonings, and (as Dave indicated) may over time even become obsolete. (I mentioned James Pelkey's interviews earlier, they are really good, but the book he tried to write based on those interviews never actually got finished.)

So, one interesting question seems to be, how close can one keep with the original primary resources when trying to weave something "bigger", more narrative, and more accessible for the uninitiated reader? And what value do interviews have in the long run, if they are in many respects little more than snapshots of an individual's subjective take at a given time. I don't have an answer to that, and there may not even be a good answer at all. At least that's what I sometimes think when I see discussions on mailing lists circling forever around questions such as the merit of the end-to-end principle.

I'll be interested in Andreu's and Andy's take on these issues.

8 Andy: Memory, accuracy, and meaning

[*Posted on February 16, 2011, by Andrew Russell*]

I am enjoying the discussion and wanted to chime in on a few points having to do with memory and some perspective from the sub-discipline of oral history on the matters of accuracy and meaning.

1. Dave mentioned that he is bothered when historians quote interviews (or interview transcripts, such as the ARPA/IPTO transcripts held by the Charles Babbage Institute), but don't reach out to the interviewees to check if they still have the same recollections that they articulated in the interview. In some cases, 20 years or more can elapse between the time an interview occurs and the time a historian uses the interview to explain a point. I can see where Dave (as an interviewee) is coming from, but I also think that historians normally don't feel any obligation to do this. Indeed, the purpose of conducting an oral history interview is to create a new primary source — that is, to create another type of document that historians can consult, just as they would consult meeting minutes, journal publications, RFCs, mailing list correspondence, pictures, Powerpoint slides, etc. It is a record of how a person felt at that time and place. All of these documents stand on their own as traces of the past that exist within the rich, varied, and necessarily incomplete documentary record. It would be great if historians could get all living people together to "sort out" their stories, but this type of activity — sometimes called a "witness seminar" — is enormously time-consuming and costly (as Andreu could tell you!). I do think it would be interesting to ask someone who was interviewed by CBI or Pelkey in 1988-90 to go back, read the transcript (and listen to the recording, if available), and then comment on how his or her perceptions have changed over time. This would create, in essence, a running commentary or marginalia on the original interview. If Dave wants to go first, maybe we can talk some other folks into it??

2. Dave also mentions two ways that Gould and Wilson recommend for biologists to make a contribution: to make a profound discovery *or* to collect, organize, and categorize. It is unusual for historians to make a discovery in the way that scientists aspire to do. Sure, some

historians might discover a long-lost letter or journal entry; but most historians work with an extant documentary and make their contributions to the profession through the act of reinterpretation — that is, to see the past in a new or different way. For example, most of the recent books on the American "founding fathers" (Washington, Jefferson, etc) simply recast aspects of their lives, reinterpret their deeds and words, or shed light on something that has not gotten a lot of attention from existing histories. As for the taxonomic approach — this sounds more to me like it is something that an archivist might do, and not necessarily a historian. My sense is that, for a variety of reasons (professional trends and norms, tenure requirements, etc), most historians try to make contributions by reinterpreting at the existing evidence in a new way or in a different context.

3. I want to say a few more words about the distinction between "Accuracy" and "Meaning". The way I read the comments from Dave and Matthias, they are advocating the notion that a historical study should strive primarily (or exclusively) to present an accurate rendering of events. Hence, interviews are valuable to the extent that they can confirm or refine the accuracy of the historian's account. Many oral historians, however, worry less about the accuracy of information gained in interviews, and instead focus on meaning. For example, the historian Alessandro Portelli, one of the most thoughtful and respected oral historians alive today, emphasizes that oral sources are not objective: they are by definition partial — both incomplete and articulated from a specific point of view. Portelli also points out that the speaker's subjectivity is the thing that is the unique and precious element in oral sources. Seen in this light, he argues that even "wrong" information can be valuable: errors, inventions, and myths lead us beyond facts to meanings. The first and third chapters in his book The Death of Luigi Trastulli, and other stories spell out his view of these issues in more detail. So even the familiar rat-holes on the internet history list (end-to-end, Internet vs OSI, etc) are interesting and valuable in their subjectivity — but not necessarily for any "factual" information they might contain.

4. As a side note, I think it is important to distinguish again between interviews with elites and interviews with the non-elite "people on the street". If we want to, say, explore the history of the Iraq War, we would want interview Bush, Cheney, Rumsfeld, Rove, etc. — the architects of the war, if you will. A different approach to understanding the war would be to interview American men and women whose spouses or partners went off to fight. We wouldn't learn much about tactics or diplomacy, but we could get a better sense of the "social history" of the war (otherwise known as history from below). I mention this to help account for the tolerance (or even fondness) that oral historians like Portelli have for subjectivity and inaccuracy. What does this have to do with our roundtable? I think that there is plenty of room for both types of interviews, and both are important contributions to our understanding of the past. I simply wanted to point out that the theoretical orientation of social historians (and most academic "oral historians") is quite different than the interviews we are discussing with the pioneers and architects of computer hardware, software, and networks.

9 Dave: Comments/question on Andy's four points

[*Posted on February 16–17, 2011, by David Walden*]

1. I could try to do that with my CBI history. Let me review it someday and see if there is in fact anything I would say differently. There is surely more I could say.

2. And here I am suggesting that having all historians work on reinterpretation is unfortunate, and the professional culture is missing an important boat. I don't think it is an archivist issue; I think it is something I think at least as few historians should be doing, not that I have high hopes they will.

3. In my own interviews, I strain to recount what the person thinks, although I do push back if I think they have it wrong. What I am saying is that more accurate history perhaps can be written when a historian is focused on a specific limited time and and can still talk to lots of people to resolve conflicting memory than can be written years later from lots of less checked oral histories. When I write history as opposed to do interviews (and I only do recent history), I try to talk to a lot of people and sort out the differences. The is nothing wrong with doing the oral histories in the traditional way, e.g., as you Andy are planning for OSI. But if you actually can write the history while most of those people are still around, you can go back to them and sort out different memories in the oral histories and refine the overall history.

4. Can you clarify this point, Andy? Are you saying in the last few lines that the typical academic historian doesn't do interviews of people like "the pioneers and architects of computer hardware, software, and networks". It seems to me that most history is written by researching the makers of history rather than the sufferers of history.

10 Andy: response to Dave

[*Posted on March 27, 2011, by Andrew Russell*]

2. I think I agree that it would be unfortunate for all historians to work on reinterpretation. Although the trend toward reinterpretation has led to positive overlaps with critical theory, anthropology, sociology, etc., excessive reinterpretation has led some specialties into a bit of a dead end. Also, I may have overstated the point here, since many historians do spend a lot of time digging in archives and looking for new discoveries or new stories to tell. And in many cases discoveries and reinterpretation go hand in hand — I'm thinking of a historian of chemistry at Johns Hopkins who is also a PhD chemist and studies alchemy and the emergence of modern chemistry in the work of Boyle, Newton, etc. In any case, it would be good to see historians work more closely with archivists, public historians, and others who can join in a collective taxonomic project. The logistical aspects seem daunting to me, but more senior historians (i.e., those with tenure) might be more willing to take on this sort of project, in the same way that they write textbooks or contribute to encyclopedias.

3. Here I agree, although it can be intimidating for historians to engage with the people they are writing about. Historians are wary of being "too close to the source" or "captured by the sources," which means that the narrative serves as an effective mouthpiece for the people who had been interviewed, but the historian's own voice and critical perspective is minimized or altogether absent. The ideal here, I think, is for historians to get the details right (including technical details in history of sci/med/tech) and to assume that they are likely to have differences of opinion with the historical actors that they write about. This will be especially true if they are writing about contentious (and therefore interesting) topics!

   Speaking for myself, I have sent drafts of my work on Internet and Web standards to people in the IETF and W3C; some of them have been kind enough to help me clean up some details, push me in different directions, and — importantly — offer anecdotes that really add a lot to my understanding of past events.

4. To address Dave's question, the group that I was talking about was not "typical academic historians" but instead "social historians" who look at history from the bottom up, i.e., Howard Zinn, Studs Terkel, etc. The movement for social history arose as a reaction against historical narratives that were dominated by elite dead white males (if you will). The social history Wikipedia page[21] gives a decent enough overview: The "oral history" subfield shares a similar theoretical and ideological orientation, and there is a natural synergy between oral history and

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[21]http://en.wikipedia.org/wiki/Social_history.

social history to the extent that they can shed light on the lives of ordinary people and help us understand history from the bottom up.

I didn't mean to leave the impression that most historians do this kind of writing. Many of the most popular histories, as you say, look at the "makers of history" (these are the sorts of books on the shelves of the big bookstores). But there is a vibrant body of work on the people who are the "sufferers of history"; indeed, oral history is very well situated to give these people a voice. See for example the contents of the last few issues of The Oral History Review[22] to see what they are publishing and what types of books they are reviewing.

My point of bringing this up was to say that some some of the leading theorists in academic oral history — those who are more interested in meaning and memory than they are in accuracy — come from a tradition that is concerned more with everyday people than they are with elites. I thought this might explain why some of their theoretical notions (as I have been trying to summarize them) may seem a bit unusual or perhaps irrelevant for people (like us) who are interviewing pioneers and "makers of history."

11 Jeff: Brief comments and perspectives on oral history

[Posted April 15, 2011, by Jeffrey Yost]

I'll begin with a bit of background on my oral history experience, before focusing my remarks on some aspects of the Charles Babbage Institute's (CBI) Oral History Program and my personal perspectives on oral history methodology and philosophy. I majored in history at Macalester College and then completed graduate school (for my M.A. and Ph.D.) in the history of science and technology at Case Western Reserve University.

My introduction to oral history came in graduate school when I was working as a consulting corporate historian for the Winthrop Group, a leading corporate history consultancy located in Cambridge, MA. I worked on a three-year project to produce a centennial history of the Timken Co. — a leading tapered roller bearing supplier to the auto and aerospace industries and specialty steel maker (Bettye H. Pruitt with the assistance of Jeffrey Yost. *Timken from Missouri to Mars*, Harvard Business School Press, 1998). The methodology-heavy preparatory research-was similar on the front end preparation and the interviews to later oral histories I did for the Charles Babbage Institute (CBI), but the sole and only purpose of the Timken oral histories were to advance this book project. The audio and transcripts became the property of the client, the Timken Company. There was not much editing to the transcripts, and as is typical with work-for-hire corporate history projects, the transcripts (to my knowledge) have never been made public. Presumably they have been preserved as part of the Timken Co. Corporate Archives (which is not open to the public). I also did a consulting project with Arthur Norberg to produce a history book/booklet on IBM Rochester (IBM Rochester: A Half Century of Innovation, IBM, 2005) — these, too, are the property of the client, IBM.

In 1998 I completed my doctorate at CWRU and accepted a position as associate director of CBI. At that point CBI had been around for two decades. It had an active oral history program from the start — as the founding director (Dr. Arthur Norberg) had been an oral historian and history of science and technology curator for Univeristy of California-Berkeley's Bancroft Library in a prior position. Roughly 90 percent of CBI oral histories have been done as part of targeted sponsored research projects — most commonly funded by the National Science Foundation (NSF) — where the oral histories are one of a number of deliverables (scholarly books, articles, archival collection development, etc.). The others have been unique opportunities where we use center funds or combine with other travel to do oral histories we feel would be valuable to have in our collection.

My position is two-thirds historical research and one-third managerial/administration (with occasional teaching — I've been added to the faculty of the University of Minnesota History of Science, Technology, and Medicine Program, but most semesters my plate is too full to teach a

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[22]http://ohr.oxfordjournals.org/content/current.

class). Conducting oral histories as part of broader research projects is a significant part of my job. I haven't had classes in oral history methodology, but have read considerably on the topic and have been mentored in my earlier years at CBI by highly experienced oral history experts — most notable Arthur Norberg. I have conducted dozens of career-spanning oral history interviews (2 to 6 hours) as well as many shorter ones — in all I've conducted more than 200 oral history interviews. Most have been for CBI, while a small number of them have been volunteering for other organizations, such as the Computer History Museum.

I view oral history as inherently subjective — it is biased by the interests and predilections of both the interviewee and interviewer. Nevertheless it is a highly valuable research tool to supplement existing archival documentation. It generates raw material that should be used carefully by historians or other researchers. Through a series of focused interviews on a particular project or area of the history of computing, it is often possible to use triangulation to get at reliable information that would not be possible by any other means. Even when multiple interviews with different individuals and triangulation cannot be used to ascertain relevant historical facts, interviews can be a useful source to better understand broad perspectives of individuals and context to someone's scientific or technical work.

By far the majority of our interviews are with famous computer scientists and industry pioneers (Allen Newell, J.C. Licklider, William Norris, Paul Baran, Bob Kahn, Vint Cerf, etc.). We have also conducted some interviews with some lesser known individuals who pioneered smaller segments of the computer industry. On a project I developed on the history women entrepreneurs in the computer services industry, I interviewed a small number of women CEO's who pioneered the IT services brokerage industry in the 1970s-companies that provided experienced systems analysts and programmer independent contractors to client firms.

One type of oral history that is new to CBI (and hasn't been discussed yet) is interviewing users of systems. Tom Misa and I are currently conducting a project funded by NSF on the history of NSF FastLane — NSF's online grant submission and management system. NSF was ahead of other government agencies (even much larger ones-DoD, NIH) and has won awards for this pioneering cyberinfrastructure, e-government initiative. We've spent considerable time doing lengthy interviews with the project managers and software designers and developers (typical oral histories), but have also sought to understand FastLane from users' perspectives (and how communication with users may have influenced subsequent iterations of the system). As such, we have also interviewed many users (NSF program officers, and principle investigators, and sponsored research staff at universities). These user interviews tend to be more structured with pre-set questions, however there are often follow-up and interesting, unexpected avenues to explore with particular interviews. It is also sometimes a greater challenge to make interviewees feel comfortable. Especially with research office personnel, we might be interviewing people who have not been interviewed and recorded previously (most leading computer scientists have been interviewed by journalists or others even if they have never done an oral history). I have recently explored the literature a bit on conducting interviews (for lack of a better term) with ordinary individuals/non-elites. Some leading oral history programs, such as program at UNC-Chapel Hill and UCLA have specialized in such types of interviews-rich resources for social and cultural history.

One area that I think could and should grow is interviews with sophisticated scientific and organizational users of computers. The computer is arguably the most important scientific instrument of the second half of the twentieth century and beyond, yet much of the history of science is written with the computers/software and the expertise of users of systems left out. There are rich opportunities to study early scientific, medical, and business users of mainframe and mini-computer systems that will be lost if the interviews are not done in the coming years and decades. Early adopters/builders/tinkers with personal computers should also be interviewed.

For CBI, oral history has also indirectly been an invaluable tool to our collection development efforts. We often learn of collections of papers with high historical research value by conducting oral histories. Oral history sessions also can build connections and trust that makes people more comfortable to donate records. Oral histories with donors of records have also been valuable tools to supplement and add value to the collections and provide more biographical information on their creator.

We always give the interviewee an opportunity to edit the transcript, but stress we encourage only light editing-correcting errors and brief clarifying information. The vast majority adhere to this. We have the interviewee sign the permission at the time of the interview and use a simple copyright transfer form that give's use the rights to publish/post online. We believe keeping it short and simple (coupled with verbal information) makes people more comfortable to sign.

Roughly a decade ago we put the vast majority of CBI's oral histories online (more than 300). In recent years we have seen the number of downloads increase dramatically as interest in oral history and knowledge of the existence of our collection has grown. CBI oral histories have been cited frequently in scholarly and popular published works, which has added greatly to their visibility. A couple years ago CBI director Tom Misa had the insight of adding citations of many of CBI's oral histories to relevant Wikipedia entries, which we believe has significantly boosted visibility and downloads. We currently have over 200,000 downloads of our oral histories per year and some months have exceeded 30,000 downloads.

12   Dave: Some concluding notes

[*Posted April 11, 20111, by David Walden*]

All the participants already understood that there are different reasons for doing interviews and kinds of interviews. Nonetheless, hearing first hand from personal acquaintances about their varying experiences and ways of thinking about interviewing was enlightening. For instance, I have known that the professional historians see the purpose of interviewing a bit differently than I do, but hearing more details about their points of view from Andy and Jeff definitely extended my appreciation for their approach. Also, having previously been aware of the highly focused projects of Andreu and Matthias, I now understand their activities in much detail.

I believe that all of us feel that taking the time to participate in this discussion has been worthwhile for us, and we expect that other people reading this transcript might also find some value in it. To this end we are posting it publicly on our History Committee's website. Probably there have been such roundtable discussions of interviewing at sometime in the past, perhaps a panel session at a conference of historians. However, perhaps there has not previously been such a public extensive written transcript of such a discussion.

Thank you Andreu, Andy, Jeff, and Matthias for your contributions to this effort.

Appendix 1: Observations and opinions about release forms

[*Written in late March 2011, by David Walden*]

Having collected an oral history, the next question is what one is going to do with it.

In my experience as an interviewee, when a journalist does an interview, the journalist does not seek signed a release from the interviewee. The assumption is that the journalist will quote, for instance in a newspaper piece, from the journalist's recording or notes of the interview. The journalist may keep the recording or notes, but they are not otherwise published. Often such an interview is just a short phone call or email exchange among many the journalist is doing to collect various points of view that may be quoted in the resulting piece. There is a similar practice for longer interviews and a resulting book, but then the book typically does a careful job of citing the specific interview data and includes an appreciative acknowledge of all the interviewees.

In the case of an oral history interview, the purpose is to make the interview available for future historians and often these days to post it on a public website. In this case, a release form from the interviewee is appropriate and arguably necessary.

Donald Ritchie's book *Doing Oral History* has an appendix showing several example release forms, giving the rights to use the interview in various situations:

- the interviewee makes a deed of gift of the interview to some entity (e.g., an archive)
- the heirs of the interviewee make a deed of gift to some entity
- the interviewer makes a deed of gift release to some entity

- the interviewee makes a deed of gift to the public domain
- the interviewee releases the interview for use by some entity

I have also looked at the release forms used by the Charles Babbage Institute (courtesy of Jeff Yost) and by the IEEE History Center (courtesy of Sheldon Hochheiser). I don't feel it is my place to include them here, but I will sketch what they cover.

The CBI release form is short and not very legalistic looking and gives all rights to CBI including posting the interview on its public website. In return, CBI promises (in effect) to keep the interview posted. In the final line of the release form, CBI licenses the interviewee to use the interview in any way the interviewee wants. CBI gives the interviewee a chance to edit the transcript of the interview, but that is not mentioned in the release form.[23]

The History Center release form is somewhat more legalistic looking and also gives complete rights to itself including publicly posting the interview. The form explicitly covers giving the interviewee an opportunity to edit the transcript, and in general tries to make clear in the form the entire interview and post-interview process. It also says the History Center will endeavor to prevent commercial use of the interview by other parties without permission of the History Center and the interviewee. The final line of this agreement says that the agreement can be changed by mutual agreement.

From my review of release forms and my own experience, it seems to me that there are three essentials in cases such as the IEEE Computer Society History Committee, CBI, or the History Center where the interviewing is being done for historical purposes:

1. The interviewing entity needs all rights to use the interview in any way it pleases

2. In return, the interviewing entity promises to maintain the interview for access by future historians (including perhaps posting it publicly).

3. The interviewee should have the right to use his or her own interview in any manner he or she pleases with attribution of long quotes to the interviewing entity for having collected the oral history.

I suspect that the question of who retains the copyright is not so important and long as the interviewing entity's perpetual comprehensive right to use the interview is clear. (I don't have much sympathy with the idea of the interviewing organization demanding more or less exclusive rights in use of the interview.)

Our Computer Society History Committee has developed a formm similar to that of the History Center, but also including the Society's name and allowing for the possibility that only a recording of the interview and not a transcription is made.

Appendix 2: An aside about some auxiliary materials

[*Posted on February 9, 2011, by David Walden*]

Yesterday I placed in our shared Dropbox folder a Powerpoint file from Sheldone Hochheiser of the IEEE History Center that they use for teaching amateurs to do high quality oral history work. Andy has noted to be that these slides "do an excellent job of describing the state of the field from the vantage point of 'oral history'." Sheldon has indicated that on some occasions in the past the History Center staff has given a workshop to groups of people from the IEEE who want to do oral history interviewing.

In parallel with this roundtable discussion, I have been in communication with other committee members who are planning to do more audio interviews with pioneers in the IEEE 802 standards effort. This got me looking into release forms, and I have put in our dropbox three example forms plus a notes on my various communications with people as I sought this information. All four file names begin with the word release. [For more about this topic, see the first appendix, about release forms.]

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[23]Jeff Yost sketched how CBI uses its release form on page 22.

Also relating to the 802 project, I have sought estimates of the cost of having an hour of audio transcribed to written text. Andy estimated $150 per hour. Sheldon Hochheiser at the IEEE History Center sent me some specific information. I put a file with his message in our dropbox with the first word of the file name being the word transcription. [Since then I have had a hour interview transcribed for $160 by one transcription service and an hour-and-a-half interview transcribed for $150 from another transcription service. One of the services mentioned by Sheldon quotes a slightly higher figure when detailed time coding is to be included. In every case, the interviewer and eventually the interviewee need to take the time to review the transcription for accuracy. Paying a higher rate may get better initial accuracy and quicker turn around.]

Also relating to the 802 project, I talked to a member of the Society staff about how they post audio files for downloading or streaming over the Internet. She sent me a reply which I have put in our dropbox with the name mp3-posting. I also tried the first of the players the staff member mentioned, as shown (temporarily) at `http://walden-family.com/cshc/stream.html`.

Appendix 3: About Andreu's thesis

[*From Andreau Veà.*]

Abstract and Executive Summary of the dissertation thesis

History, Society, Technology and Network Development. An exposé of the most unknown face of the Internet, by Andreu Veà.[24]

The content of this doctoral thesis consists of a detailed study of the facts associated with the design and later development of the technologies that support the Internet.

It has been prepared by collecting, compiling, and summarizing a fairly exhaustive set of materials — many of which have never been published. The document seeks to provide a broad and detailed description of (1) the major milestones in the development of the Internet, and (2) a comparative analysis of the different technologies used to provide Internet access. In this last, the thesis evaluates the different technologies along the dimensions of technological and commercial suitability.

In all cases, the validity of the material used and the associated "facts" have been verified by conducting multiple interviews with their authors and cross-referencing them for internal and external consistency.

Specifically, the document consists of four broad themes:

- Internet Prehistory (1964–1994): A description of the events affecting the Internet over this period. Much of the associated material has never been published in Spanish. This section also includes a description of the events associated with the evolution of online services in Spain, which has been split into two sections:

- 1984–994, Pioneering online information services and Pre-Internet Networks.

- 1995–2002, Spanish development of the Internet from its inception until its present state

- Technological Trends: A comparative analysis of the different technologies past, present, and future - used to access the Internet.

- Untold Stories of the Internet: A description of the evolution of the Internet extracted from the content of interviews, conducted by the thesis author, of the 64 individuals (domestic and international) who most influenced the development of the early Internet and Spanish pioneers.

- Legal Régime of Internet: A compendium of Spanish law that deals with the regulation of the Internet and associated technologies including laws related to the liberalization of the telecommunications markets and to the management of / pricing for Internet access networks — free access, flat rates and capacity interconnection models.

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[24]`http://tdx.cesca.es/TDX/TDX_URL/TESIS/AVAILABLE/TDX-1104104-101718//Index.htm`.

APPENDICES:

PERIODICAL ARCHIVE: A digital compilation of a many articles related to the Internet since 1994 (Note: Over 2000 articles have been placed within a database with appropriate indices).

INTERNET DEVELOPMENT TIMELINE: A database of key Internet development milestones that includes a description of the event, the date, and the people involved.

MARKET ANALYSIS: An exhaustive analysis of the development of the Spanish ISP Market including the pricing evolution of over 600 Spanish Internet Service Providers (1994-2001) and their gradual disappearance - consolidation.

GRAPHICAL HISTORY: Compendium of images detailing the evolution of browsers, web-page design tools, and connection wizards of different ISPs

DICTIONARY OF INTERNET TERMS An over 2.500 entry dictionary detailing (in a divulging language), the main technical terms, industry-leasing companies, visionaries, and key dates & milestones.