Network Creativity and Digital Culture

Since 2000, the Culture, Creativity, and Information Technology Program has explored how digital network technologies and the Internet are changing patterns of cultural participation. Recent work has focused on identifying the emerging, largely impersonal patterns embedded in this cultural reinvention—the structures of participation through which people produce, share, and experience culture, and the new cultural capacities that emerge at the intersection of technological and social innovation. The two essays below, by Geoffrey Bowker and Mizuko Ito, address different aspects of this transformation. Longer versions of each will appear in a forthcoming program-sponsored volume, Network|Netplay: Structures of Participation in Digital Culture *(Joe Karaganis and Natalie Jeremijenko, eds., Duke University Press, 2004).*

The Past and the Internet

By Geoffrey C. Bowker

In the course of human (and non-human) history, it is rare enough for a significant new regime of recording the past to develop. There have been two in the past millenium before the present change: the development of the practices of written record-keeping (Clanchy 1993: 3) and the invention of the printing press (Eisenstein 1979).

What we know about the past has changed dramatically with each such change. The changes run far deeper than the mere proliferation of data points. As written records of large estates held in monasteries in France achieved legal and social dominance, the role of women as the tellers of the past fell into decline (Geary 1994): the technological and the social were deeply intertwined. The outcome was that different kinds of records were kept. With the invention of the printing press, the progenitor of modern computing Charles Babbage proclaimed that until the invention of printing: "the mass of mankind were in many respects almost the creatures of instinct." Now, the great were encouraged to write, knowing that: "they may accelerate the approaching dawn of that day which shall pour a flood of light over the darkened intellects of their thankless countrymen," seeking: "that higher homage, alike independent of space and time, which their memory shall for ever receive from the good and the gifted of all countries and all ages." Since printing, the rate of progress of humanity has "vastly accelerated"; over the past three or four centuries "man, considered as a species, has commenced the development of his intellectual faculties" (Babbage 1837). The language is overblown, but the possibility of conversations across the ages (Landor 1882) through access to table talk in salons as well as philosophical tracts has indeed changed our relationship with the past.

As social scientists engaged with the new technology of the Internet, we are faced with myriad claims about how the present is different and how the future will be reconfigured. However, we rarely think about how our relationship with the past changes with such new technology. In this paper, I claim that a new regime of technologies for holding and shaping past experience has been developed through a process I call databasing the world[1]—and I explore some implications of this new regime for social scientific research.

[1]I am using the word "database" widely here to refer to the set of traces (records, listserves, music and so forth) available and searchable on the Internet. The drive to database the world can be tied back historically to the growth of governmentality (Foucault 1991).

What traces do we leave?

(In which it is argued that we leave a lot of traces)

So where are we today? I rarely think about the traces that I leave in the world as an ecology. I tend to think of them (when at all) quite concretely. Firstly my library. It operates as a form of external memory for me (when I, rarely, use it) and as a commemoration of things I have read. Its probable fate after my death is its dispersal into a hundred homes. Marginal notes that I have written will lower the selling price rather than attract attention. On the web. It is interesting to track dead people on the web. My friends and acquaintances who died before Mosaic (the first Internet browser) are sparsely represented, and when they are it is generally in a classical, canonical academic style (footnote references, bibliographies…). Or in a Mormon database. Those who died more recently carry on a rich afterlife. They often still receive email messages; links to their websites rot very slowly; their informal thoughts are often captured on listserve archives, on comments they have left on a website (signing the visitor's books). Some people even have "eternal flame" websites[2]—where the problem of maintenance is as live as it is for the Olympic torch. Each of these modes of memory was in place before Mosaic, but it is now possible to articulate them in ways that were previously unworkable. It would take a researcher a life time to track down my written traces—where I have signed guestbooks in weird museums and twee hostels, people I have carried on informal correspondence with. Those of us enjoying and being irritated by post Mosaic syndrome (PMS), leave legible traces across a wide range of our activities in electronic form. Everyone their own Boswell.

When I, rarely, think about the articulation of the set of traces that I am leaving, I have the immediate apprehension that it's not the real me that's out there on the web. I know the times when I've censored myself (oh problematic concept!) and when I have performed actions to complement—and frequently to confound—a trace. Thus I might write a positive review of a friend's book and then offer close colleagues a different reading.

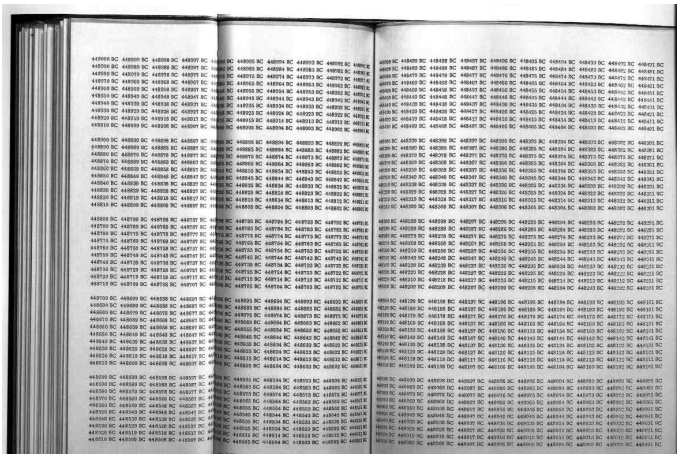
Taken globally, the set of traces that we leave in the world does without doubt add up to something. It is through

[2]http://www.venus.co.uk/gordonpask/

operations on sets of traces that I understand an event that I take part in. Tolstoy wrote about the foot soldier in the Napoleonic wars. The soldier he describes cannot have the experience of the war he is waging nor the battle he is fighting because the only "global" traces of the war are inscriptions—notably maps and statistics. There is no scaleable observation that moves from "I was in a copse hiding behind a tree and was terribly confused" to "I took part in Napoleon's bold attack on Uvarov's flank." In this case, where is the "experience" of the war? When we experience a war, we are reliant on the aggregations of other experience to ground and shape our experience.

In general, we use scientific representational forms to fashion our experience.

With digital archiving in all its forms, however, a new regime of technologies for holding past experience has emerged. Our past has always been malleable, but now it is malleable with a new viscosity. Where in the past our experiences were frequently (literally!) pigeon-holed into rigid classification systems, leading to a relative paucity of tales we could tell about our past, today the traces have multiplied and the rigid classifications are withering. (Who now does a "tree" search through the web using Yahoo categories in preference to the random access mode of Google?) New forms of governmentality, based on holding knowledge about the past, are emerging in which the map and the statistic become the prime instruments for governing the territory. It is not that we have the ability to aggregate brute numbers—that has been available since the early nineteenth century at least in a number of domains (notably the insurance industry). It is rather that we can aggregate that data along multiple different dimensions, and perform complex operations over that set of dimensions. It is the pleats and the folds of our data rather than their number which constitute their texture. There is a new, rich interiority accompanying the faster global exchange of information and people. I have access to my fleeting thoughts of previous years in my Eudora outboxes—all carefully kept since memory is so cheap today (contrast the scrap books of previous generations). My subconscious and unconscious vie in what could be called my "paraconscious": the massive sets of traces of my past that I have randomly accessible to me.



One Million Years - Post, 1970-71, Volume VI: 498300 BC, pp. 1100/1101

The Promise of the Searchable Database

In Eugene Sue's *Le Juif Errant* (Sue and Gavarni 1845) two memory regimes are pitted against each other—the Wandering Jew, who tracks his family and its fortune by remaining incessantly awake; and the Jesuits, who track the same family and fortune across the centuries through extremely efficient record-keeping practices. The problem with personal memory and records is that there needs to be an act of recording: either Ahasuerus must have a memory trace in his brain or the Jesuits need to write their secret reports and file them efficiently. One read on the current set of memory practices is that we are moving culturally from the era of recorded memory to that of potential memory. There are so many, and multiply determined traces out there on the web, and they are so easily searchable, that any given individual (this is the virtue of the commons) does not have to worry so much about collecting his or her own books and films, annotating them, jotting down obscure facts and quotes on index cards, memorizing genealogies. It's all out there, should I need it at any time. And it's truly random access.

If I am caught on a recondite reference in *The New York Times* Saturday crossword I certainly don't need to rack my brains as I might once have done, or search sequentially through several dictionaries and encylopedias: I type in two or three key words and someone somewhere will have written about whatever it is and put it on the web. If I want to remember (as I have) the name of a childhood friend, then I don't need to call up my ever unreliable brother—I find it on the web.

Recall the optimism of Aldous Huxley (Huxley 1963) that with due attention to spirituality and drug ingestion one could recover all those lost traces and enjoy the total memory that our brains record. In a sense now I have this available to me because a lot of other people are endlessly writing, recording, putting online. A few points about this activity though. First is that my potential memory is so great partly because I am white, bourgeois, male, academic and British: my set of traces is much more likely to have been covered by these effectively random acts of recording than those of a Camerounian avocado farmer. In the welter of data, it is hard often to remember how remorselessly culturally weighted the Internet is. Second is that this random access potential memory is culturally central. Ants seem collectively to be intelligent because they individually leave an inordinate number of chemical traces in their environment: the environment itself is altered such that a stupid ant can still find food. Similarly, as Halbwachs argued (Halbwachs 1968), we configure our physical environment to act as a constant aide-mémoire: from the Stations of the Cross in a church to the architecture of our offices. Now we have a past which is much more, and in many more ways, present in our lives—and this changes who we are, what we think and what we can say.

So what difference does it make?
(in which it is argued "a lot")

Historians refer to the period 1920-1980 as the lost years. During those years, a lot of schmoozing, conferring, and deal-cutting was done over the phone, with no trace being left for the sorry chronicler—who was forced into semiotic analysis of recondite documents to guess real motivations for a given action. In the nineteenth century this was not the case—there was so much use of letters; and postal delivery was so much more regular. Thus if I want to know about Charles Babbage's real reasons for writing his awful *Ninth Bridgewater Treatise* (a paean to the emerging computer as a metaphor for God's action on earth), I can go to his correspondence with John Herschell and Charles Lyell—frequently several letters a day. In the lost years, the restrained astronomer and geologist would have called Babbage on the phone and pummelled him orally a lot more than they would have written.

So in a very simple sense, the world is a better place for historians now. However, it's still not a great place. The recent Microsoft trial is a good guide for why it's not. Microsoft was hurt during the deliberations by the seizing of internal email correspondence, which had been pretty explicit about their brutal business methods for assuring hegemon Gates his power base. After a series of similar actions, companies started springing up offering products to completely clean disks of all traces of correspondence. Merely erasing the messages is not enough (they might still be there as information blocks which a hacker could get into) and shredding hard disks (the DARPA option) is expensive and a little silly. So now there is Secure Delete, "the digital document shredder." Companies are now generally aware of the need to destroy and massage their email, much as they have destroyed and massaged paper records over the centuries.

And yet, there is a real difference with the current technology. It is so easy to leave and to assemble traces, that we are developing a kind of universal prosthetic memory. That memory creates profound differences in our consciousness and in our work practices: all which had been fleeting or consigned to a folder itself consigned to dust is now, should we wish, active and present in our lives.

The past, L.P. Hartley wrote, is a strange land—they do things differently there. What we are witnessing is not a cultural shift from no memory (the lost years) to good memory (after the Internet) but from memory practices marked by written and oral communication to memory practices marked by electronic and oral communication. The distinction is important. When network technologies come on the scene, the ecology of storytelling and record-keeping changed fundamentally. Clanchy remarks that it took about two hundred years in Europe to move from putting trust in written documents over trusted witnesses with memories. There were just too many ways to forge documents in the old days, until the invention of practices like the chirograph (the tearing of a document in half, with the agreement reproduced on both halves). It took a few hundred years for footnotes to develop. It took a hundred years to move from a recognized need to make documents to a recognized need to store them (the invention of the archive).

We are currently undergoing just such a slow and just such a dramatic shift in our relationship with the past. Its final results are unclear—the "save everything" mentality of the early days has already been replaced by the "save the minimal legal set" mentality of many companies and individuals today. At the same time we are exploring new genres for keeping people and events live on the Internet long after their respective ends.

The really important shift that I see occurring is in the way of storing and accessing the past and its knowledge. The encyclopedists in the eighteenth century and the great classifiers of the nineteenth figured knowledge as a relatively stable edifice, built out of relatively standard bricks. The grand overviews of knowledge and hierarchical orderings of knowledge they gave us have generally crumbled. Now we are freed from the technological underpinnings of their beliefs—that is to say, we are no longer forced to engage in the same sets of orderings of the knowledge and events from the past in order to encompass huge data sets.

Social scientists have in general been loath to study information infrastructures—the record itself has seemed secondary to the story that the record could yield. And yet, when new methods of record-keeping are emerging which radically alter our relationship with the past, it behooves us to explore the possibilities and limitations of our new infrastructure. Finally, with so much of our social gaze directed at the future possibilities of the new technology (databasing species to preserve biodiversity; producing a world encyclopedia; realizing the nightmare of a surveillance society), we as social scientists need to draw attention to and seek ways to understand the ways in which our very relationship with the past is quietly being reconfigured—and with revolutionary effect. ■

Geoffrey C. Bowker is professor in and chair of the Department of Communication, University of California, San Diego. He has published a number of works on social and organizational aspects of the development of very large scale infrastructures, including *Science on the Run* (MIT Press) and *Social Science, Technical Systems and Cooperative Work: Beyond the Great Divide* (LEA Press). He is currently working on an NSF-funded project to examine the mobility of knowledge in distributed scientific collaborations and on a second digital government project on long term databases in environmental science.

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