

The Futures of Digital History

[Edward L. Ayers](#)

University of Virginia

USA

It is clear from the exciting program of this conference that digital scholarship is flourishing. We are part of a remarkable ferment that is tying people, places, and institutions together in unprecedented ways, that is generating all kinds of new skills, visions, and possibilities.

Looking over the titles of the many talks and presentations of this conference, I am struck that the great majority of them are devoted to building and structuring data so that it can be explored. People are rapidly innovating in XML, GIS, sophisticated databases, and tools for digital libraries. We are building tools that let us see patterns we could not see otherwise. We are building tools that let us share documents and artifacts with vast and distended audiences. We are establishing standards that permit our work to be collaborative and cumulative.

All of things are precisely what we should be doing. These are the foundations for any significant scholarly work and these are the ways that we will transcend both current practice and current barriers that separate us by field, by time, and by place.

But in such a fast-moving situation, we must be casting our minds ahead of where we are now. I cannot help but think about what kind of synthesis might grow out of the work we are doing. As someone who is working full-time these days trying to write a book out of a dauntingly large and complex digital archive, I cannot help but wonder what the tools we are building will do to scholarship and narrative. Is the work we are doing enriching and deepening our traditional approaches, displacing them, or transforming them?

When I talk to audiences of people who are not as taken with the new technologies as we are, I am invariably asked these questions: aren't you worried about putting all this information out there for just anyone to see? Aren't you worried that you will never be able to write a book out of so much material? Aren't you worried that these computers will merely contribute to the fragmentation of knowledge and the shortening of attention spans? Aren't you worried that traditional

narratives and sequential arguments will be displaced by isolated pieces of evidence and scattered hyperlinks? Aren't you worried that you are complicit in the erosion of the academy's autonomy and its absorption by corporate culture and demands?

These are good questions and I'm sure that you have heard them, too, in one form or another. It would be dishonest to say that we do not hope for some deep changes as the result of our work and it would be foolish to think that we will be able to dictate all the consequences of that work. So this morning I would like to address some of these issues from the perspective of my own discipline--history. In a way that is perhaps fitting for a gathering such as this one, I will speak mainly in my hopeful voice. The best way to prevent unwelcome things from happening as a result of our work is establish examples of what we want to happen. And to do that we need to talk about what those good things might be.

If the history profession has learned anything in the last three decades, it is that everything connects and everything matters. One new field after another has uncovered one facet or another of society or personhood that is connected to something else. Historians of many subjects new and old have radically expanded the subject of history and thus the things that must be connected to other things. We have recognized that nation states are only one way of organizing our thinking about the past; we might better focus on processes, structures, networks, and relationships that reflect global processes.

Ironically, this recognition that everything connects has led to a perceived crisis (or at least persistent low-grade fever) in history, a questioning of coherence, of narrative, of priority, of audience, even of purpose. But such a situation may be an opening, an opportunity. And the new media may be a way to help. The new media are especially good at connection, complexity, and capaciousness. And, it seems clear, the more that things are connected in helpful ways, the better. The question is: do we have the energy, confidence, and imagination to see how those things connect?

Digital archives have made, and are making, a difference in the way we imagine the past. As we see around us this week, teams of historians and allies are building a wide array of projects in the histories of Africa, Asia, Europe, America, and the world, in the study of religion, art, war, and slavery. These projects, displaying collections of numerical data, texts, images, maps, and sounds, create capacious spaces in which users make connections and discoveries for themselves.

Such archives take advantage of the mass, multiplicity, speed, reiteration, reflexivity, and precision offered by computers. Now we need to be thinking about the next step, about where we go even as we continue to build the archives. Digital history needs to invent ways of conveying historical coherence, a transition from offering the raw materials of the past to offering new kinds of stories. People everywhere have to think about their pasts, who they have been and who they are. We all have to worry about the past even as we plan for the future.

Everyone knows the past was wonderfully complex, but seeing the complexity of even a small slice of the past held in suspension before us in a digital archive can be discomfiting. In conventional practice, historians, like other scholars, obscure choices and compromises as we winnow evidence through finer and finer grids of note-taking, narrative, and analysis, as the abstracted patterns take on a fixity of their own. A digital archive, on the other hand, reminds us every time we look at it of the connections we are not making, of the complications of the past.

Historians have long worked to convey complexity with words on paper. The footnote, the index, and the appendix augment and extend our narratives. But no historian would claim that the books we write embrace more than a fraction of the complexity of the past. We use monographic distance, models, theories, statistical patterns, and narratives based on sequential accounts of events and processes to channel and contain complexity. Historians generally neglect or reject more complex narrative forms, even those that have become commonplace in other media. Film and television train us at early ages how to weave strands of narrative out of carefully constructed confusion and to take pleasure in that weaving. People who watch such media quickly learn how to deal with unexplained lapses of time, flashbacks, and overlapping narratives. Viewers know how to imagine, infer, things happening at the same time in different places. In fiction, the more complex the narrative form the more it is esteemed by serious readers. And yet history seldom uses such techniques.

Could it be that digital archives might move us toward more complex, more literary, forms of narrative on paper? The possibilities and obvious complications of those archives may create pressures toward, temptations toward, narratives that try to keep more facets of experience and perception in play. We might be able to imagine ways to write that let us deal more effectively with multiple sequences, multiple voices, multiple outcomes, multiple implications. Historians have special reason to try such techniques. Time and space are incapable of occupying the same narrative at the same time. As anyone who has tried to write history knows, historians either

have to hold our temporal breath while we look around or ignore the changing social landscape as we push ahead in time.

Historians might begin to take advantage of the new media, then, by trying to imagine forms of narrative on paper that convey the complexity we see in the digital archives, perhaps emulating writers of fiction in this regard even as we maintain our rigorous fidelity to the evidence. We might acknowledge more frankly the limitations of simple narrative or monographic abstraction. We might try writing in more self-conscious ways, manipulating point of view, chronology, and voice more than in our current practice. This need not be postmodern flight into chaos, but could rather be a more satisfying engagement with the complexity that we know characterized the past. Digital history could be both a catalyst and a tool in the creation of a more literary kind of history.

Encouraging and enabling new kinds of books of this kind would be in itself a worthy product of digital archives, but those archives hold out even more bracing prospects. Historians might also write true hyper textual narrative, dynamically interlinked text on an electronic screen. We've dreamed of this since the days of Vannevar Bush in 1945. Such a medium would offer new ways of making arguments and associations, of arraying evidence and documenting our assertions. It would offer layered or branching or interweaving narratives, or deep and dynamic annotation and indexing. It would permit us to embed narratives in shared networks of communication so that references, connections, and commentaries grow and change. It would hold out a new aesthetics of historical narrative.

When we imagine such a hypertext we need to forget much what we have seen of "hypertext" on the World Wide Web. Though it has created an astounding global network in just a few years, the Web's language of hypertext markup language, or HTML, is limited to the simplest kind of linking. It has led people to assume that the current limitations of its interlinked text and images are the intrinsic properties of electronic text, just as people imagine that we will always have to read such texts on enormous boxes fixed to our desks. But, as we know, HTML is already being replaced by more fluent languages that will provide richer environments in which to work. In that language and the successors soon to follow, hypertext will be able to make simultaneous links among many elements, branching into multiple possibilities, and thus become more truly hypertextual. The physical components, the machines and the networks that will make it appealing to read such texts in a sustained way,

are also improving at a remarkable rate. Light, portable, and precise reading surfaces are likely to be here by the time we can create much history worth reading.

The historian who writes such texts will obviously have to think along several axes, offering coherent narratives and coherent analyses on several levels before creating elaborate links and the text that accompanied them. Such work will be challenging, to say the least, and it will not offer precisely the same pleasures we find in the stories and analyses of current book technology. But it could offer pleasures of its own, pleasures of sophisticated and comprehensive understanding, even of aesthetic intricacy. Hypertextual history need not introduce purposeful obfuscation and disorientation, goals often championed by some early theorists and practitioners of literary hypertext. Hypertext, in fact, could represent a new kind of rationality and empiricism.

More self-conscious narratives on paper and true hypertext by no means exhaust the possibilities for digital history. We might, in fact, follow a different direction altogether: toward social science. That connection was tried before, of course, during the first days of accessible computers. Historians taught themselves statistical methods and even programming languages so that they could adopt the techniques, models, and insights of sociology and political science. In the 1950s and 1960s the creators of the new political history called on historians to emulate the precision, explicitness, explicability, and inclusivity of the quantitative social sciences. For two decades that quantitative history flourished, promising to revolutionize the field. And to a considerable extent it did: it changed our ideas of social mobility, political identification, family formation, patterns of crime, economic growth, and the consequences of ethnic identity. It explicitly linked the past to the present and held out a history of obvious and immediate use.

But that quantitative social science history collapsed suddenly, the victim of its own inflated claims, limited method and machinery, and changing academic fashion. By the mid-80s, history, along with many of the humanities and social sciences, had taken the linguistic turn. Rather than SPSS guides and codebooks, innovative historians carried books of French philosophy and German literary interpretation. The social science of choice shifted from sociology to anthropology; texts replaced tables. A new generation defined itself in opposition to social scientific methods just as energetically as an earlier generation had seen in those methods the best means of writing a truly democratic history. The first computer revolution largely failed.

Perhaps it is time for historians to revisit the promise of social science history. The first effort at that history fell into decline in part because historians could not abide the distance between their most deeply held beliefs and what the statistical machinery permitted, the abstraction it imposed. History has traditionally been built around contingency and particularity but the most powerful tools of statistics are built on sampling and extrapolation, on generalization and tendency. Older forms of social history talked about vague and sometimes dubious classifications in part because that was what the older technology of tabulation permitted us to see. It has become increasingly clear across the social sciences that such flat ways of describing social life are inadequate; satisfying explanations must be dynamic, interactive, reflexive, and subtle, refusing to reify structures of social life or culture. The new technology permits a new cross-fertilization.

ECAI holds out one of the most promising possibilities for the marriage of history and social science: geography may well emerge as one of the most useful and exciting forms of historical information. By integrating dynamic portrayals of space into our understanding, we do not merely add to prior understandings but promise to transform the way we think of politics, economy, demography, and culture. GIS does not only let us see new patterns; it lets us convey the wonderful patterned complexity of the past in ways that will appeal to people who might not know they're interested in--and implicated in--the past. It cuts across familiar boundaries and broadens our vision. All people in all times have lived in places; it is one of the great commonalities of human experience and it lends itself to our new methods and machinery.

Other kinds of visualization also far outstrip the possibilities of numerical calculation. Manipulable histograms, maps, and time lines promise a social history that is simultaneously sophisticated and accessible. Users need to be able to explore the data in ways that reveal hidden patterns, subtle patterns. Every part of our archives should be visible and every part should connect to other parts in ways that people can see and maneuver.

We finally have today what earlier generations of social science historians dreamed of: a fast and widely accessible network linked to cheap and powerful computers running common software with well-established standards for the handling of numbers, texts, and images. New possibilities of collaboration and cumulative research beckon. Perhaps the time is right to reclaim a worthy vision of a disciplined and explicit social scientific history that we abandoned too soon.

Even these visions of new books, hypertext, or social science history do not exhaust the truly revolutionary characteristics of the new media. There are possibilities that are harder for us to imagine, that cut against the academic grain a bit more. Theorists find exciting possibilities in active participation within narratives, in immersion. Janet Murray and Espen J. Aarseth extrapolate from the most sophisticated current forms of digital storytelling, particularly games, to imagine new forms of participatory literature. Such works would take full advantage of the exponential growth in computing power to create new spaces for imaginative connection. People will participate in machine-produced worlds.

Digital narratives are already replicating the processes by which earlier new narrative forms -such as theater, novels, and films--developed. "Eventually all successful story-telling technologies become 'transparent': we lose consciousness of the medium and see neither print nor film but only the power of the story itself," Murray points out. "If digital art reaches the same level of expressiveness as these older media, we will no longer concern ourselves with how we are receiving the information. We will only think about what truth it has told us about our lives." For this vision to succeed, as Aarseth says, we need to create simulated worlds "interesting enough to make real people want to spend time and creative energy there."

To a remarkable degree, that is already happening, though far beyond the bounds of scholarship. The largest group of people engaged in thinking about digital representations of the past today are exploring mythical pasts in role-playing games. Those games, I was amazed to discover, have created remarkably deep, complex, and heavily populated worlds. And those worlds fascinate people. Ultima On-Line currently claims 139,000 members who spend an average of 20 hours a week in its mythical land of Britannia. "Each player spends about \$10 a month to 'live' in this virtual world, which distinguishes itself by continually changing even when a player is logged out."

"There is no long-term object to the game, no single task to be performed, no coherent plot line for the player to unravel," one review tells us. "You are, instead, expected to live out your own story, pursue your own dreams. To a large degree, learning to play the game is what the game is about. Every character profession, and skill has its own challenges, and each takes a great deal of time to master. If you want to be a powerful mage, for example, you have to learn the reagents and words, keep a spellbook, and somehow support yourself while you practice, practice,

practice- learning magic can be very expensive. (This suggests that perhaps a game called Graduate School could be a big hit!)

On the other hand, you aren't limited to the usual roles of high fantasy Naturally you can still be a warrior, a mage, a ranger, or a healer. But what makes UO such a unique experience is that a player faces exactly the same level of challenge if she wants to be a cook or a carpenter. Skills rise only with long and patient practice, and you have to learn the recipes, buy the tools of the trade, and find a place to market your services, regardless of what you choose to do. If you find it more rewarding to make furniture than to bash heads, there's no one to say that it's the wrong way to go." It's a busy and clogged world, partly because players average six hours a day. There is also crime, with virtual mugging and even murder. "Players quickly become cagey, even in towns, and one's first reaction to seeing another sprite walk up is rarely unreserved friendliness. The world is dangerous, and you have to learn to keep a hand on your wallet. Outside of shrines and dungeons, gangs of thugs often wait for the unwary, and sometimes it is impossible to escape with your life." Even the grumpiest and most pessimistic social historian would have to grant grudging admiration to that embrace of the darker side of the past. And there's greed as well as violence: Ultima Online has generated an actual real estate market in the kingdom, in which real people pay real money for a particularly great castle or a safe place inside a walled town.

Other companies are also imagining and using history for purposes that are far removed from scholarly goals. They, too, are wildly successful, but they deal at the level of civilizations and cultures rather than individuals. As a result, they embody a different set of assumptions about the past and the present. "Some people see history as a set of names, dates and points on a map," one commentator observes. "Other people see it as the evolution of ideas that drive society: science, religion and politics. In Age of Empires 2, a computer strategy game published by Microsoft, the grand sweep of human events is expressed as a series of technological upgrades. Picking up where the original ended, with the fall of Rome, the game takes place over a thousand years, leading up to the Renaissance, as civilizations race to replace their hardware and software with more elaborate versions, at considerable cost. . . . End goals may differ. But the ramp that leads up to them is always the same: technological evolution, achieved by plowing money into research at every step along the way." A good start might be to upgrade stone walls to fortified walls--one of the many upgrades possible. And fortunately one can choose whether or not to "allow audio taunts" in the multiplayer version. Age of Empires divides the world into thirteen civilizations--

including Chinese and Japanese, Mongols and Persians, Byzantines and Saracens, Teutons and Turks--as well as the always popular Britons, Celts, Franks, Goths, and Vikings. These worlds are not the places historians would imagine; indeed, the cartoon-like representations bruise our imaginations.

But it is not hard to imagine accurately rendered worlds set in past time, based on our hard won research. We can perhaps imagine simulated worlds that are accurate in their scale, their clothing and building styles, their language and their food. To some extent, such worlds already exist in historical reenactment. There is no reason that computers could not one day create virtual worlds that are even more satisfying in some dimensions than these analog simulations. This seems to be what the ever more powerful machinery is building toward.

Will participation in such simulations constitute "doing history"? Better, most academic historians would argue, to have partial connection with real people in the past, mediated through records and artifacts, than fuller but inherently misleading connection with simulated people of the past. Perhaps, however, a computer simulation of the past could bridge those extremes, building its presentation of lost worlds with a rigorous fidelity to the evidentiary record that no simulation using live actors could produce. Perhaps, in fact, such presentations of the past would be especially suitable places for the sort of participatory narrative genre Murray and Aarseth envision.

Can, or should, scholars colonize, adopt, steal from, infiltrate these forms that are using the past for quite different purposes from our own? Or, perhaps more accurately, can we avoid it? As Richard Schickel writes in the special issue of Time devoted to the person of the century: "F. Scott Fitzgerald had it right: 'Culture follows money.' And the money--perhaps even the creative zeal- is now in the new media. A radically reshaped culture is beginning to be created there. We can already begin to see what the generation born with a TV remote in its hand, hip-hop on the CD player and a computer screen in its face will do to traditional narrative. They'll speed it up, scramble it--and render it in new tonalities, using new palettes. . . . It's a kind of back formation from computer language, this narrative revolution manifesting itself in film. . . . It will extend to the other arts. It will reorder our perceptions more surely than Matisse and Stravinsky did, for a pixel- unlike paint, canvas or score paper--has no past to overturn, is radically innocent. It has no tradition to draw on, perhaps is not subject to the 'anxiety of influence.'"

Whatever the cultural momentum, only we can decide whether we will participate in the intoxicating possibilities of a true hypertextual history, of a reconstituted social science history, of an entirely new kind of immersive history. Only we can decide if we want to make use of any of the tools that are being created for purposes far from our own current practice. There is nothing in the machinery itself that will cause any of this to happen. Despite much cheerleading and nay saying, digital media does not produce any particular outcome. It does not intrinsically degrade education and scholarship nor does it necessarily improve them. Everything depends on the decisions we make. We can decide to encourage the collaboration and risk-taking necessary for digital history through our selection committees and tenure decisions, through our program committees and editorial policies. We can champion the new connections between professors and secondary teachers, between teachers and students, and between historians and readers already encouraged by the new media.

The invention, development, and spread of new media are the most profound historical change of the last decade and those changes show every sign of accelerating. Historians need to understand the new media and its implications as fully as possible, for both defensive and hopeful reasons. We need to resist the dilution and distortion of historical knowledge brought by the erosion of our authority in a widely dispersed new medium. The best way to wage that resistance is to seize for ourselves the opportunities the medium offers, opportunities to touch the past, present, and future in new ways.