The Pasts and Futures of Digital History

Edward L. Ayers

University of Virginia

Like the population at large, the historical profession approaches the new information technologies of our day with mixed emotions. Differences of resources, temperament, and generation create both determined resistance and eager acceptance as well as widespread ambivalence. While it is increasingly unusual for a historian, or any other academic, to resist the obvious benefits of the electronic library catalog or email, it is even more unusual for a historian to pursue the full implications and possibilities of the new technology. The great majority of us take a few things from the menu of possibilities and leave the rest untouched.

Historians at campuses all across the country, strongly encouraged by their administrations, are incorporating technology into their teaching. Students read course materials at all times of the day, talk with one another and collaborate, and embark on research projects that would have been impossible just a few years ago. Libraries, historical societies, universities, and various collaborations have created digital archives that offer new flexibility of research and exploration. The American Historical Review, Journal of American History, American Quarterly, and AHA Perspectives have devoted considerable space to professional and pedagogical changes linked to the new machinery.

As rapid as the changes have been, however, the actual writing of history has remained virtually untouched and unchanged. New technology has not affected the books and articles that form the foundation of what we teach. Other parts of the academy have sustained long-running debates over the effect of electronic media on writing, but those discussions have bypassed the historical profession almost entirely. Discussions of epistemology, narrative, and audience that have animated literary studies have had no discernable impact on historians.

The irony is that history may be better suited to digital technology than any other humanistic discipline. Changes in our field far removed from anything to do with computers have helped create a situation in history where the advantages of computers can seem appealing, and perhaps even necessary. At the same time, changes in information technology, far removed from any consideration of its possible uses for our discipline, have made it possible for us to think of new ways to approach the past. The new technologies seem tailor-made for history, a match for the growing bulk and complexity of our ever more self-conscious practice, efficient vehicles to connect with larger and more diverse audiences.

From an internal point of view, the writing of history has never been better. We deal with a diversity of populations, topics, and approaches in ways

unimagined a few generations ago. We have learned a great deal from other disciplines while largely avoiding the factionalism of their competing schools. On the other hand, the best work of the academy seems disconnected from the desires of the general reading public. The best-selling books are resolutely traditional in both subject and approach; those that do best are accounts of Americans, usually prominent, accomplishing triumphant things. The great democratization of history over the last few decades has not been accompanied by a democraticization of audience. Innovation in the field seems to have slowed, the heady days of the new political history, the new social history, the new women's history, and the new cultural history eclipsed or absorbed into a general eclectic practice. A budding interest in new narrative techniques seems to have faded. Perhaps the tools of the digital world can help us out of this lull.

Computers' healthiest influence in history thus far has been the deepening and broadening of professional conversation. Early in the internet's development, in the days before the Web, historians used discussion lists on the internet to post questions, offer interpretations, and solicit advice. That impulse has grown into H Net--a large, active, differentiated, participatory, and convenient network of historians of all levels talking to one another about our common passion. H-Net in many ways resembles a perpetual annual conference, with everything from plenary speeches to intense private conversations. The technology, self-consciously simple and straightforward, works very well.

Publishing, too, is beginning to change. Back issues of many of our leading journals are now available on-line and editors are making plans to incorporate the web into the journals of the near future. Robert Darnton, the president of the American Historical Association and a leading historian of print technologies, has recently issued a call for using digital media to revive the monograph. He, along with important allies in the world of publishing, learned societies, and foundations, has launched a coordinated effort to make that happen. Darnton envisions an electronic book in layers: "The top layer could be a concise account of the subject, available perhaps in paperback. The next layer could contain expanded versions of different aspects of the argument, not arranged sequentially as in a narrative, but as self-contained units that feed into the topmost story. The third layer could be composed of documentation . . . . A fourth layer might be historiographical . . . . A fifth layer could be pedagogic. . . . And a sixth layer could contain readers' reports, exchanges between author and editor, and letters from readers. . . . ." The project Darnton describes offers an exciting test of how old and new techniques can be combined.

Other historians have been experimenting with a more seamless integration of new media into their work. They wish not so much to augment traditional scholarship as to change it in fundamental ways. The earliest manifestations of digital history began in hypermedia in the 1980s, in amplified books and Hypercard stacks. The most elegant manifestation if this genre is Who Built America?, a textbook on CD-ROM with documents, film, audio clips, and searching capacities. Such combinations of media offer tantalizing possibilities, possibilities that will proliferate as the Web becomes ever more

hospitable to complex uses of images and sounds.

Digital archives stand as yet another manifestation of new thinking. Teams of historians and allies are building a wide array of projects in the histories of Africa, Asia, Australia, 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. These archives seem certain to proliferate in the near future.

Enhanced teaching, professional community building, experiments in hypermedia, and impressive digital archives, then, have already emerged from the first decade of historians' exposure to the new media. What has not yet been demonstrated is that historians can create forms of narrative and analysis that adequately exploit the possibilities offered by these developments. The digital archives, which bear the clearest connection to scholarly writing, create apparent problems as well as opportunities. 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 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. The richly layered textures of William Faulkner's Absalom, Absalom!, for example, evoke the way we make history out of memory, document, and supposition. Quentin works with Shreve to follow trails of association in that cold New England dormitory room, tracing back over the stories to see where they might branch into another story, where they might connect, what the lack of connection might mean. We get the same satisfaction from Laurence Sterne, James Joyce, or Toni Morrison, the same sense of participating in the making of a story.

Relatively few historians have adopted these narrative means, but the exceptions have been prominent and often successful. Simon Schama, John Demos, Robert Rosenstone, and James Goodman, among others, have attracted considerable attention with innovative narratives. Could it be that digital archives might move us toward more complex, more literary, forms of narrative? 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. As Robert Coover, novelist and theorist of the new media, has pointed out, "there is a tension in narrative, as in life, between the sensation of time as a linear experience, one thing following sequentially (causally or not) upon another, and time as a patterning of interrelated experiences reflected upon as though it had a geography and could be mapped." 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 hypertextual narrative, dynamically interlinked text on an electronic screen. 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 HTML is already being replaced by a more

fluent language--XML, or extensible markup language--that will provide a richer environment 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.

But what might a hypertextual history look like? At its simplest level, possible even in HTML, it could weave text and source together more tightly. It could use images or maps as organizing structures, as portals into the narrative, rather than merely as illustrations. It could connect readers to relevant parts of the analysis from different directions with different purposes. It would suggest how a single event ramified into multiple realms, or how various strands of causation culminated in a particular event. A recent collection of experiments in hypertext sponsored by the American Quarterly has shown that such things can be built right now. The website displays the tantalizing possibilities of the new media even in this era of crude tools; the essays written in response represent the anxieties such experiments present to our notions of closure, argument, and evaluation. Hypertextual history is both a culmination of a long-held desire to present a more multidimensional history and a threat to standard practice.

A major goal of mature hypertextual history will be to embody complexity as well as to describe it. 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.

Digital archives, hypermedia, and robust hypertext by no means exhaust the possibilities for digital history. We might, in fact, follow an apparently 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, replicability, 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.

Ironically, social science history faded just as computers became widely available, just as new kinds of social science history became feasible. No longer is there any need for white-coated attendants at huge mainframes and expensive proprietary software. Rather than reducing people to rows and columns, searchable databases now permit researchers to maintain the identities of individuals in those databases and to represent entire populations rather than samples. Moreover, the record can now include things social science history could only imagine before the Web: completely indexed newspapers, with the original readable on the screen; completely searchable letters and diaries by the thousands; interactive maps with all property holders identified and linked to other records. Visualization of patterns in the data, moreover, far outstrip the possibilities of numerical calculation alone. Manipulable histograms, maps, and time lines promise a social history that is simultaneously sophisticated and accessible. We have 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.

Hypertext, hypermedia, and a renewed social science history might converge. In literary studies and art history, practitioners are devising ever more

sophisticated tools to explore texts and images. They are finding patterns and connections invisible in traditional techniques, establishing standards that permit them to build large-scale and cumulative projects. They are collaborating with programmers and librarians to develop powerful new tools. Intellectual and cultural historians could easily find common cause with such colleagues.

Even these visions of advanced literary hypertext or social science history do not exhaust the truly revolutionary characteristics of the new media. 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. Murray argues that "as digital narrative develops into maturity, the associational wildernesses will acquire more coherence and the combat games will give way to the portrayal of more complex processes. Participating viewers will assume clearer roles; they will learn how to become orienteers in the complex labyrinths and to see the interpretive shaping in simulated worlds."

Murray and Aarseth show how digital narratives are 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." Aarseth goes even farther: "To achieve interesting and worthwhile computer-generated literature, it is necessary to dispose of the poetics of narrative literature and to use the computer’s potential for combination and world simulation in order to develop new genres that can be valued and used on their own terms." For this endeavor to come about, we need to create simulated worlds "interesting enough to make real people want to spend time and creative energy there."

It is easy to imagine such "worlds" set in past time, even as many simulations and games of today are set in historical situations. But would such simulations be "history"? 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.

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.

Only historians can decide whether history 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.