

TABLE RONDE / ROUND TABLE

Riding the Horseless Carriage to the Computer Revolution: Teaching History in the Twenty-first Century

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AS HISTORIANS, we are better at predicting the past than the future. It ought not to surprise us, then, that, despite the excellent work in some quarters, we use and understand the new technologies — the technologies of the future if you like, the Internet and instructional technology more generally — using metaphors of the old technologies — the book, the library, the museum, and the archives.

We are kin to the first inventors who put a steam engine on a wagon chassis and felt excited about inventing a horseless carriage. A paradigm shift, a shift in the operating metaphor, was required before the horseless carriage became the “auto-mobile”; it was the paradigm shift, not the invention, that brought about a transportation “revolution”. Despite the popular and scholarly talk that we are living in the computer or Internet revolution,¹ as historians and humanists our carriage has barely started down the information highway and is nowhere near the promised land.

In a few exemplary Internet and instructional technology projects, the carriage is rolling, and I would like to talk about how these might, in spite of being based in old metaphors, be on the road to a fuller use of new technology and finally to suggest a new metaphor for moving down the road. First, however, I want to raise some issues regarding the relationship between his-

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¹ See, for example, David J. Stanley, “From Writing to Associative Assemblages: ‘History’ in an Electronic Culture”, and M. Daniel Price, “Will the Real Revolution Please Stand Up! Gutenberg, the Computer and the University”, both in Dennis A. Trinkle, ed., *Writing, Teaching and Researching History in the Electronic Age* (London and Armonk, N.Y.: M. E. Sharpe, 1998); Henry Jenkins, “From Home[r] to the Holodeck: New Media and the Humanities” [online article], http://media-in-transition.mit.edu/articles/index_australia.html, posted December 6, 1998.

tory and the humanities more generally and the new technology that help explain our current backwardness.²

In making the points that follow I do not want to diminish the work already done or in progress, much of which is excellent. Nor do I want to suggest that I have transcended the old metaphors in my own work: quite the contrary. I *know* I am right there — bolting the steam engine onto the wagon chassis and not doing as good a job of it as many of my colleagues.

We in history and the humanities have not yet figured out what the computer is really for. Of course we make use of the information technology. We put our diagrams and course outlines on the Internet when photocopying them would probably be more useful, and we set up online discussion groups which are poor substitutes for bringing people together. These are all conservative and sometimes misguided uses of the new technologies.³ We use our computers constantly, but as souped-up typewriters, faxes, and post offices, instead of asking, “where are the *critical and productive affinities* between our methods and epistemology on the one hand, and the inherent structure and capabilities of interactive technologies, on the other?”⁴ We have not asked the question, “If resources were not a limitation where could we push technology?” and then sought the resources.

It has been our mistake to think of the humanities, including history, as something opposed to or even separate from technology. We have posited a clash between humanist values and technological values and maintained an anti-technology bias, preferring to leave techno-enthusiasm to the engineers and social scientists and the Internet to auctioneers and pornographers. This is a mistake that has only served to reify the idea that technology has a momentum of its own and that it exists independently of value systems. Technology is instrumental. The computer was originally designed for the military and developed for business applications, so the impetus and context for the

2 In using “backwardness” here I am referring to the dominance of the older metaphors of presentation — book, library, museum, and archives — in guiding new media presentations. One could also argue that historians have been slower than other humanists to push the new technology, and humanists generally slower than social scientists, scientists, and professionals. The article by William Thomas, III in this issue develops this latter point. I focus on “instructional technology”, only one element of the application of information technology.

3 Some teachers have argued that online discussion groups have benefits over face-to-face meetings. They allow for more considered responses, and they allow those people who are shy in verbal exchange to participate more fully. I do not disagree with either of these observations, but they do not compensate for loss of communicative ability that comes from not being able to see body language or hear tone of voice, which one gets face to face. They do not compensate for the lost spontaneity, the lost teaching moments, the lost humour, the lost role-modelling that are sacrificed in an asynchronous, disembodied digital interchange. Moreover, seminars are an opportunity for students to practise verbal expression and defence of their positions; the protective cover offered by the Internet undermines this pedagogic goal. Having said this, I concur that online discussions are better than no discussion when it is impossible to bring people physically together.

4 Randy Bass, “The Garden in the Machine: The Impact of American Studies on New Technologies” [online article], <http://www.georgetown.edu/bassr/garden.html>, last modified May 23, 1997.

new computing technologies come to us as a modern Trojan horse for age-old sets of values now embodied in global capitalism. The struggle is definitely unbalanced, but there is no reason why new technologies cannot be redeployed by humanists to promote other values.⁵

Technology and the humanities are both cultural products, both expressions of values, and they exist in relationship with each other. That this is true can be demonstrated in a variety of ways, not the least of which is that humanist thinking, discussion, and analyses have developed in tandem with certain technologies, beginning with the stylus and papyrus, down through a succession of others, to the computer.

Humanists, despite the anti-technology rhetoric, are in love with and fetishize a particular system of technology — printing and its manifestations, the book and journal. We train our students to evaluate printed text critically. Historically this has been a very useful skill and will probably always be, but it is needed for a shrinking minority of their daily information interactions. We need to expand our definition of our critical intellectual responsibilities to embrace technologies beyond the book. No one should graduate with a degree in the humanities without the ability to analyse critically print, film, video, and other digital communication including the Internet. The alternative is to fail in our social responsibility and to lose our social support.

We have to develop a new relationship with the digital technologies and come up with new metaphors and thus new ways to harness the power of the information technologies. This is true in our scholarship and our research, and it is especially true where I will focus, in our teaching. In part, this follows from our students' need to be able to evaluate the new technologies critically. In part, it is because the new technologies have enormous potential to allow us to teach the humanities in ways that are more learner-centred, more active, more fun, and more useful.

Asking “how can we make the computer more useful?” is awkward because it immediately requires us to articulate what history is good for. We first have to identify clearly what we do as historians and what historical skills we want students to acquire. There are many skills that historians have in common with other humanists: research skills, critical thinking skills, writing and rhetorical skills. If the technology is to be useful it has to add something to the way we already teach these things and there must be a net gain: that is, it must add more skills than it takes away.

If technology is to be particularly useful to historians, however, it must improve how people think historically. Thinking historically is a complex skill that requires a base of knowledge about a time before the present. Thinking historically involves being able to take an idea or an event at a given point in the past and follow it forward in time, and it involves being able to trace the

⁵ I develop a series of propositions about the humanities-technology relationship at <http://www.uvic.ca/~jltz/humantech>.

historic roots of people, ideas, and culture from the present into the past. It involves being able to create a time-line from documents or artifacts that are not organized chronologically; evaluating conflicting evidence, assigning weight to evidence, and from it constructing a narrative. Perhaps the most difficult aspect of thinking historically comes from the recognition that time transforms everything. Teaching students that people in the past understood the world differently, had completely different ideas of cause and effect and about the relationship of an individual to the community or to a spiritual world, is one thing. Teaching the skills of “getting inside the head” of someone born in a different century, a different millennium, is another.

So far, the pedagogy of the Internet offers us more resources, especially primary resources, but little that takes us beyond the pedagogy of print in terms of teaching historical skills. This should not be surprising because in the creation and use of information technology today we generally organize our work according to old technological metaphors. The most prevalent use of the Internet today is as an open-ended book. The Internet can be thought of as a disorganized encyclopaedia — where a search yields a chaotic selection of resources of varying reliability. The tendency towards critical portals with web site reviews and evaluations will enhance the reliability of information in the encyclopaedia, but only clings closer to the reference book metaphor.

The second version, more interesting for teaching, is the digital self-contained book, where a large or small web site or compact disk is under the control of one or more joint authors. In these cases, reliability is often more transparent. These sites expand the book’s capabilities by including more numerous visuals — including three-dimensional images, audio, and video. These multimedia texts often have other nifty features, such as making footnotes more useful and active by taking the reader directly to the book or passage that is being cited. These can be excellent resources for teaching the knowledge students need to begin to think historically. Students can navigate through a three-dimensional pyramid or an Anasazi kiva and get a much better understanding of, and feel for, certain historical artifacts.

Just a few examples of excellent sites in this category include *The Lost Museum* (<http://www.ashp.cuny.edu/LM/>), a virtual reconstruction of P. T. Barnum’s American Museum which burnt down in 1865, and *Magic, Illusion and Detection* (<http://chnm.gmu.edu/courses/magic/syl.html>), looking at the use of magic in the culture at the turn of the nineteenth-twentieth century. *Sipapu: The Anasazi Emergence into the Digital World* (<http://sipapu.gsu.edu/>) allows students to explore the Anasazi world, including moving through a 3-D simulation of a kiva.

It is not intended as a slight to these sites or, for that matter, to “the book” by saying that, for all their creative and artistic merit, they do not push beyond the book metaphor, where the student is the consumer of a history packaged, often creatively, with a choice of routes in the material, by an author or team of authors. The principal use of this material, like the book, is to give students information.

The other principal organizing metaphor for instructional technology is the digital archives or full-text library, where not only are the finding aids and catalogues online but the whole of the contents is accessible. There are some major steps in this direction, probably the most ambitious of which is the *American National Digital Library* (http://lcweb2.loc.gov/ammem/ammem_home.html), an outgrowth of the American Memory Project, that has undertaken the digitization of one million special collection items a year for five years.⁶ In Canada the *Early Canadiana Online* web site of the Canadian Institute for Historical Microreproductions (<http://www.canadiana.org>) has 3,100 books and pamphlets representing 550,000 pages published before the century online, and is adding another 250,000 pages a year.

Clearly, this is still a conservative use of technology — using the metaphor of an archive or library instead of a book. What is innovative about the online archives, as far as teaching goes, is that they give students a chance to become historians.⁷ Instead of consumers of preformed histories, students are active creators of histories using primary documents that, up to now, have not been generally available to them. For the first time students can do the work we love to do — the exciting work of being an historian. This is revolutionary in one sense. By making histories, they learn to think historically. The selective nature of historical presentation becomes very clear. They develop the critical and discriminating skills in deciding which evidence has more credibility. As teachers, we have been very limited in the past by a lack of archival resources available to undergraduate or grade-school students. The Internet can remove that limitation as, over time, some archives become completely digital. In the meantime there are some specialized archives designed as teaching tools that simulate the archival experience.

The best of these sites is *The Valley of the Shadow* project (<http://jefferson.village.virginia.edu/vshadow2>). Based at the University of Virginia's Center for Digital History, this complex online archive looks at two communities, only a short distance apart but on opposite sides of the North-South divide in the American Civil War. In three sections it examines the communities on the eve of the Civil War, in the midst of the war, and through the Reconstruction era. Included is an enormous array of primary sources, including full-text newspapers, manuscript diaries, letters, maps, images, and reports for each of these sections.

6 The American Memory Project, a multimedia archive of primary materials, includes a range of items such as 1,100 Civil War photographs from the Matthew Brady collection, 272 Constitutional Broad-sides, 1,600 colour photographs of American life in the 1930s taken from the collections of the Office of War Information and Farm Security Administration, 2,900 life histories (22,500 pages) from the folklore project of the WPA Federal Writers Project, 25,000 photographs of American life and culture from the Detroit Publishing Company, 45 paper print films of New York City at the turn of the century, 59 sound recordings of American leaders (1918–1920), and 11,000 pages of books and pamphlets from the Daniel P. Murray African American collection (summary from Bass, “The Garden in the Machine”).

7 Chad Gaffield, “Primary Sources, Historical Thinking, and the Emerging Redefinition of the B.A. as a Research Degree”, *Facsimile*, no. 23–25 (2000–2001), pp. 12–17.

Another site that does this on a much smaller scale is the online archive that relates to the 1868 murder of William Robinson on Salt Spring Island, British Columbia, that Ruth Sandwell and I have developed. The site *Who Killed William Robinson: Race, Justice and Settling the Land* (<http://web.uvic.ca/history-robinson/>) is a virtual archive containing all the documents, images, and maps relating to this murder and the settlement that have been located at a range of real archives. Robinson was a Black man, an Aboriginal man was hung for the murder, and an evaluation of the evidence suggests an innocent man was hanged by an all-White jury. Students construct a historical narrative and learn about settlement, justice, and racism in colonial Canada by sifting through the archives to solve an historical murder mystery.

A project with a similar specialized archives and much more visual interactivity is the CD ROM, *Making History: Louis Riel and the North-West Rebellion of 1885* produced by Monro Multimedia with the National Film Board. In this CD the student enters an animated archive/museum with a vast range of sources and interpretations about the Northwest Rebellion and can even, in a simulated way, question the historical actors themselves.

Another example of a specialized archive that focuses on teaching students to work with primary documents is the *Do History* site which uses the diary of eighteenth-century midwife Martha Ballard as the focus (<http://www.dohistory.org/home.html>). The whole diary, as well as complementary primary sources for the region and on midwifery, is available and an online workshop on resolving contradictions in historical evidence is included. It can be used in conjunction with the PBS film based on it. A site that combines a library of Shakespeare's plays with an extended book about his life and times is Michel Best's *The Life and Times of Shakespeare* (<http://web.uvic.ca/shakespeare/Library/SLT/>).

In addition, there are many other sites which use small archival collections to develop more specific critical skills like the reading of historical photographs. One of the better examples is the *History Matters* site (<http://chnm.gmu.edu/fsa/2.html>), which leads students through a series of critical thinking exercises using Dorothy Lange's famous Depression-era photographs.

These are, I think, major advances that allow us to teach students to gain some of the skills required to think historically, but they are still making new technology fit old metaphors. They do not scratch the surface of what the computer is capable of doing for us even now, and certainly not in five or ten years. Moreover, none of these projects tackles what has always been the most difficult of the historical skills to teach: the recognition that "the past is a different country" and the skills necessary to understand that country.

Is there any relevant work going on that pushes the computer to its limit? Where is the most creative and even revolutionary work being done? What other metaphors can we use? Suspend your scepticism for a few minutes as I give you one answer to this question: computer games.

Before I lose every shred of credibility, let me tell you that I do not play computer games. I have never played computer games, not even the poker programme that comes with every computer sold. But I have started to study computer games.

I should also say that “computer games” as a name does a disservice to what these software programmes really are. They are simulations. You have probably heard of, or even played, flight simulator programmes in which pilots, astronauts, and others are trained and tested by the problems thrown at them visually on a computer screen. When the operator or player acts, the computer adjusts, and the player must respond to the new situation. These simulations, which can be bought for \$20 to \$50 (CDN), are much more interactive than any of our existing instructional technology projects.

There are plenty of historical computer games out there. There are dozens of historical battle recreations — many of them deeply researched and accurate historically. On a more analytical and global level, the *Age of Empires*, for example, has the player/operator guide an historic civilization from the fall of Rome to the Middle Ages; additions to the programme allow the player to guide the encounter with the new world. *Sim City* allows the player to build a nineteenth-century city (as well as more modern cities) from the ground up.⁸

To give you just one example of the current generation, consider a simulation called *Deus Ex*, a 3-D simulation that adjusts itself to the decisions the player makes. For my purposes here the plot is beside the point, but, to give a context, the character you play is initially sent to stop terrorists who are stealing an antidote to a plague that is devastating the world. As you proceed you find out that they are stealing the antidote to give it to the poor, that there may not even be a shortage of the antidote, that you cannot trust your superiors. One reviewer describes the game as follows: “In *Deus Ex*, you become a character in the world.” You can attempt to solve the mystery or, if you prefer, stroll around a city, enjoying the sights and sounds.

Use the coke machine, read the newspaper, grab that lamp and throw it! Although I have yet to see a game that allows you to interact with everything as you could in real life, this game shines in this regard. Versatility in completing your objectives shines too. Wanna be a peace lover and sneak up on everyone and knock them out? Wanna be Rambo? Wanna be a sniper? Would you rather try and avoid the opponent altogether? You can do it all!”⁹

If you, on a whim, decide to step into the opposite sex’s washroom, other characters note it and may use that information later. Choices you make affect

8 To get an idea of the games that are available, go to <http://www.pcgr.com:80/> for descriptions and reviews.

9 Reviews quoted from online site <http://www.pcgr.com:80/reviews/roleplaying/product1051.asp?RVFirst=6&RVNum=5>, accessed May 23, 2001.

all the subsequent situations you encounter. Do you want to spend hours in a bar talking to people? Order a drink? If you have the money, go right ahead. One gamer I talked to described it as if you were stepping into a novel. Another said, "You are allowed freedom. Sweet, luscious freedom."¹⁰

I am not saying that in their present forms these games are great teachers of history. What I am saying is that the technology developed for computer gaming is available for projects deliberately aimed at teaching. The simulation metaphor breaks out of the old ways of thinking of the Internet and instructional technology and addresses the hardest of the historical skills to teach. We now have the ability to put students into other places, other times, and give them the opportunity to interact with historical people. They can walk the streets of ancient Rome or nineteenth-century Paris, have conversations with Jean-Jacques Rousseau, Cleopatra, or Adolph Hitler. We can ask them virtually to live in the past, to respond to historical situations and then to events and scenarios that ensue. Through the Internet we can have them interact with hundreds and thousands of other students, all living (temporarily) in the past, collectively shaping the simulation by their decisions.¹¹

The computer simulation is just one metaphor of many that might provide a better fit for the new technology, allow us to exploit it more fully and teach in ways that have never before been possible. Other metaphors, suggested by Janet Murray in her provocative book, *Hamlet on the Holodeck*, include the theatre, town hall, sports arena, and even life form.¹² We have been held back by our imagination. Most of us are of the generation of the book and the television and grew up without computers or sophisticated computer games in our homes. The older technologies provide the metaphors with which we think about the computer. As a result we have not asked "the sky is the limit" type of questions.

Of course, we are also limited by budget. The computer simulations used by NASA and the military are developed with practically unlimited budgets. The artificial intelligence that goes into gaming is also backed by large sums of money because the large market ensures there is revenue to be made. Some progress, as far as history teaching goes, is being made in the United States thanks to a vast pool of foundations and corporate donors and the National Endowment for the Humanities, which funds teaching projects. In Canada, the philanthropic and corporate pool is small, and the money available to humanists through the Social Sciences and Humanities Research Council (SSHRC) goes to research, not teaching.

A thoroughly researched historical simulation would be an expensive project, but it is not that the sums needed are unimaginable or unattainable.

10 Interview with Devin Corner, employee at Compusmart in Victoria, May 19, 2001.

11 MUDs (Multiple User Dimensions) are already a well-used aspect of the Internet. For more on MUDs, see online site <http://www.cs.okstate.edu/~jds/mudfaq-p1.html#q1>.

12 F. Janet Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Cambridge, Mass.: MIT Press, 1997).

In Canada alone, the Canadian Foundation for Innovation (CFI) pumps over \$100 million annually into research in Canada from a \$3.7 billion budget. The problem is that, like SSHRC, the CFI does not fund projects for teaching. If the Internet and instructional technology are to be increasingly useful to humanists as teaching tools, we are going to have to work with granting agencies and pressure them to change the funding criteria.

The best uses of the new technology for teaching are those features that allow us to achieve our goals as history teachers more effectively than we could before, and so far there are not many. Today, the most useful are those sites that put primary resources at our fingertips and at those of our students. We can now, in ways that were more difficult before, teach our students to be historians. If the idea actually takes hold that students ought to be active makers of history rather than passive retainers of it, then it may be a revolution in teaching, but hardly a computer revolution: it is an elaboration of Jackdaws, the Orilla Kit, and published collections of documents that some teachers have been using for decades. If we are ever going to make it to the computer revolution we are going to have to get ourselves off the horseless carriage and break the reins on our imagination. The opportunity is there to teach history and historical skills which we have not been able to teach effectively before in ways that are challenging, exciting, even fun. Revolutions, as Emma Goldman reminded us, do not have to be dreary things.¹³ Without suspending our own critical judgement, we have to think bigger, and differently, than we ever have before.

13 "If I can't dance, I don't want to be part of your revolution."