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ELECTRONIC RESOURCES FOR VICTORIAN RESEARCHERS – 2005 AND BEYOND

By Glenn Everett

IF SCHOLARS have a role model, he might be Umberto Eco's Brother William of Baskerville. Certainly our notion of the activity of scholarship – an investigator reading in a great library, alive to the treasures collected there – altered little from the Middle Ages through the twentieth century and still persists at the beginning of the twenty-first; but by the end of this century, the practice of scholarship will have changed utterly, and the scholar will require quite different skills from those that graduate students are being equipped with today.

Whereas for centuries the challenge of scholarship has been discovering materials closely held, sometimes jealously guarded, the problem for the twenty-first-century scholar will be finding a way to limit inquiry to a manageable subset of data; because all scholars will have immediate access to all archives in the world. The model of the researcher traveling to the depository library in order to use its closely held archives will be replaced by that of the reader able to gain electronic access to any archive in the world from any point in the world.

We are also in the midst of a change in the kind of materials that will be permanently stored, and even in the notion of "permanence" – a word that means something entirely different to an information technologist than it does to an archivist. Already, writers no longer produce manuscripts: early drafts of current work are electronically overwritten by later revisions. Photo archivists are being pressured to convert their cabinets full of film negatives into digitized copies. Paper checks are being replaced by electronic ones, which will be eventually replaced by electronic originals, the paper originals being "truncated."[1]

We are seeing the primary medium of transmission and storage change from paper to pixels. As materials are digitized, they are usually put into controlled formats – compact discs, for example, or password-protected electronic archives. But this may be a not unmixed blessing. Although high-quality digital images of the materials will be readily available to scholars anywhere in the world, at the same time access to paper originals may be even more restricted than it is now, either because archivists might begin to require stronger justification from researchers before they grant access to the originals, or because universities and granting agencies may begin to ask researchers to show why they must travel to the archive rather than making do with online access to the digitized copy. The most extreme threat is that the paper originals may be destroyed or made inaccessible to all but a handful of scholars, so that access to them will be as difficult as it was for Eco's Master William and Adso. Still, in most cases, the electronic copy of the archived material is satisfactory, and the creation

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of a computer-searchable index that should be part of the conversion process will indeed represent an advance over traditional paper- (or microfilm-) based archives.

At the present moment, we are still a long way from the ideal of immediate world-wide access, and although it is clear enough that that is the direction in which we are headed, it is not at all certain how long it will take to get there, nor how many tacks we will have to take along the way. Given the conservative nature of scholarship, that voyage may be longer than digital visionaries suspect; but ultimately we will reach a point at which a critical mass of research materials is more readily available electronically than in print.[2]

The nineteenth century is the first for which a wealth of mass-produced data and media exists. Print and publishing technologies only then became capable of mass production and distribution. With the adoption of a regular census and the parliamentary Blue Books, new data was collected and stored. The development of photography around the middle of the Victorian era, and moving pictures and audio recordings by the end of it, made possible new kinds of (non-textual) archives. The existing photographs of Victorian people, of Victorian London, and of the Crimean War help to define our visual idea of the Victorian period more directly than is possible with the drawings and illustrations from earlier periods. In studying Victorian art, we may compare the surviving photographs of Christina Rossetti, Jane Morris, and Fanny Cornforth with Pre-Raphaelite paintings to see the nature of the idealization of the feminine form that Rossetti and Morris were practicing. As for audio, we have no recordings of Wordsworth, Byron, or Coleridge, but we do know what Browning and Tennyson sounded like, because some few of their wax cylinder recordings survive. Although we can only imagine from Hazlitt's and Carlyle's descriptions what Coleridge's voice sounded like, W. B. Yeats's many recordings of his works clearly demonstrate his preference for a more musical oral performance of his poetry, not the kind of prosaic reading that underscores sentence syntax.[3] There is much yet to be done in digitizing all of these nineteenth-century materials and making them available electronically, in suitable formats; nevertheless, these archives will soon make possible a kind of multi-media scholarly production not easily done before. Previously, text-based analyses of texts have been almost the only kind of scholarship conceivable, because it was the only kind publishable. But now, with a little training, scholars can support analyses of texts, photographs, and audio recordings with the necessary demonstration and "quotation" and publish their works on CD or DVD. That such a project might be considered daring merely demonstrates the conservative nature of our disciplines.

This preliminary discussion brings us to the most pertinent question: what kinds of materials and archives are presently available to the Victorian scholar, how reliable are they, and where do we find the most trustworthy? I have discussed below electronic databases available through library subscription (online and CD), materials on the web in archives or collections, and finally materials on the web best found by means of some kind of search engine.

Your Library's On-Line Databases

SHRINKING ACQUISITION BUDGETS at most colleges and universities are driving library directors frantic. Electronic resources are replacing encyclopedias and dictionaries. Libraries are dropping subscriptions to print journals in favor of on-line journals and services that provide individual articles upon request; they will be less and less likely to carry the full run

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of *Victorian Studies*, *Nineteenth-Century Literature*, or similar journals, or resources like the National Union Catalog and the DNB. These trends are now well established and seem unlikely to be reversed in the next few decades. David Leon Higdon is correct in saying that even for graduate students, "Pencils, note cards, rubber bands, and hours with the printed forms of the *MLA International Bibliography* are a thing of the past" (142): graduate students who once might have picked up the *VS* annual bibliography and browsed for likely looking articles among the periodicals in the stacks will be able to do so at fewer and fewer colleges. At some schools, they will be charged for each article they request, and even where the service is free to students (and/or faculty), the library will be charged. There will be at least implicit pressure to request only those articles which appear most useful, possibly leading to less complete bibliographic searches. Copyright considerations may restrict an instructor from permanently downloading a favorite article and making it available to students on a course-related Web site.

Information quickly available on the Web is already the coin of the realm, driving anything that takes more time to acquire out of circulation: instructors must be prepared to explain why the entry on Emily Bronte in the CD-based *Dictionary of Literary Biography* is a better source than materials found in "Wikipedia" (<http://en.wikipedia.org/wiki/Main_Page>) or elsewhere on the Web. Even the most stable and most scholarly electronic resources (those available on CD-ROM and through library subscription) have seen the effect of market forces, as Wilsondisc, which originally housed the MLA bibliography, was superseded by Silverplatter. The importance for the researcher and for the instructor assigning research is that each publisher structures the information differently, and their interfaces differ considerably. It is also reasonable to surmise that the compact disk format itself may eventually be superseded by DVD[4] data storage, as the cost of DVD disks continues to fall.

Victorian Web Sites

ALTHOUGH IT IS THE MATERIALS freely available on the Web which capture the imagination, one reason for not focusing this article exclusively on Victorian Web sites is that the report could be quite brief: Are there more Web sites now having to do with things Victorian than there used to be? Yes. Do any of them carry the same scholarly weight as peer-reviewed scholarly books and articles? Very, very few; and so far, the resources of that quality that have come online are simply the electronic versions of those same print resources. Nevertheless, some comment is due. In the last few years[5] the Internet has reshaped the way information is retrieved: bibliography searches which used to take days or weeks can now be done in a few hours. But scholarly publishing is still using the print distribution model, and the most likely change in the near future is to CD or electronic distribution, through academic libraries or through subscription, of monographs and quarterly journals very much like their print versions.

Currently, even the very best Web-based materials, like Mitsuharu Matsuoka's concordances to Victorian novels (<http://victorian.lang.nagoya-u.ac.jp/concordance/>), must be used with this caveat: however useful they may appear to be, they have not been subjected to peer review, either by computer scientists who can speak to the efficacy of the algorithms used in the C++ program which Matsuoka wrote to produce the concordance, or by researchers who have compared the product of Matsuoka's program with the results of a traditional search. So if the question is, "may a Victorian scholar rely on such web resources," the

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answer would still be "not yet": the scholar should still rely on the electronic databases available through the university library and on traditional print materials.

One more cautionary word before the obligatory list of Web sites: inevitably, some of the resources mentioned in this article will not be available as indicated when you read it. (The quaint name for this problem is "link rot.")[6] Furthermore, one certainty about current electronic technologies is that they will become outmoded; the only question is, how soon. That is due to one of the characteristic weaknesses of Web-based materials: their ephemerality. Even those Web materials that do not simply vanish sometimes change addresses: Alan Liu's "Voice of the Shuttle" (now at <http://vos.ucsb.edu/>) has moved at least a couple of times, as has "The Victorian Web" (now at <http://victorianweb.org/>). The "VICTORIA" materials have moved from their longtime home at <http://www.indiana.edu/~victoria> to <http://victorianresearch.org/>. Not only is link rot a problem for published lists of resources, it also limits the usefulness of the resources themselves. Even in lists generated by search engines, many of the links are outdated, because the effort required to keep links current is enormous, and the larger the project, the more impossible the effort. Librarians have explained that this problem is inherent in the way the URL (Uniform Resource Locator) works: it points the Web browser to an address rather than to the title or author of the resource. It is as if your librarian told you that a certain book was located on a certain floor, a certain aisle, a certain shelf, five books in from the end. Armed with only that information, if the book were not precisely in that place, you could not recognize it, even if it were the one *four* books in from the end. The URL contains no descriptive information. Attempts to standardize things by content, such as the URN (Universal Resource Name) or PURL (Persistent Uniform Resource Locator) and the Dublin Core Metadata Initiative (<http://dublincore.org/>), now ongoing, may produce cataloging standards that will allow more accurate indexing; but inevitably, many of those posting materials to the Web will not bother to use the standards.

Here is a brief compilation of the major and most stable lists of Victorian archives. One reason for keeping such lists short is that all good online lists of lists (meta-indexes) tend to be redundant: each resource contains links to the other e-archives:

- Patrick Leary's "Scholarly Resources for Victorian Research on the VICTORIA Research Web" (<http://victorianresearch.org/>). Exists there a Victorianist not already familiar with the VICTORIA list or its associated Research Web? The section on archival sources is an excellent starting point, listing works of reference both print and electronic.
- Alan Liu's "Voice of the Shuttle: Victorian Period" (<http://vos.ucsb.edu/browse.asp?id=2751>)
- Jack Lynch's list of "Literary Resources for the British Victorian Period" (<http://andromeda.rutgers.edu/~jlynch/Lit/victoria.html>)
- Mitsuharu Matsuoka's "Victorian Web Sites" (<http://lang.nagoya-u.ac.jp/~matsuoka/Victorian.html>)
- Bethany Paige Nowviskie's "Victorian Resources Online: An Annotated List of Scholarly Websites" (<http://www.iath.virginia.edu/~bpn2f/victorian/bibliog.html>). The key word here is "annotated"; Nowviskie's resource, unlike most others, contains brief notes about what you will find at each e-archive.

A few hours browsing these Web sites will turn up most all of the nineteenth-century resources on the Web.

As the ultimate form of popular publishing, the Web is completely open to exploitation by energetic controversialists: those wishing to promote one side or the other of a controversy

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can simply overwhelm any scholarly seekers after truth. For proof, search the Web for information on evolution, creationism, or Darwinian theory.[7] It is blindingly easy to find support for one's preconceived ideas, but much more difficult to sort out the more scholarly approaches. The most obvious literary controversy is that between the "Stratfordians" and "Oxfordians" regarding Shakespeare's identity. But even in the case of less controversial topics, there is no reward for accuracy. Errors and legends, urban and otherwise, are duplicated at the speed of light, and persist for years as the Web pages are indexed in search engines.

The problem, of course, is that the Web has truly fulfilled its promise of open access: anyone can publish anything. In a sense, the new ideal of scholarship – or is it anti-scholarship? – is presented by "Wikipedia" (<http://en.wikipedia.org/wiki/Main_Page>). As the ultimate in interactivity, any entry in this online encyclopedia can be rewritten by any reader. The assumption that revision after revision (by different contributors) will result in ever-increasing accuracy seems naïve. And Victorianists may find discouraging the notion that this readily available twenty-first-century source will most likely supplant such Victorian achievements as the *Dictionary of National Biography* and the *Oxford English Dictionary*.

There appears to be a need for guides to Web sites which measure their reliability. The most obvious approach is to review sites, and attempts have been made to do this, both in print and on the Web. One of the most ambitious of such projects is the Thomas Hardy Association's "Hardy on the Web: 1999–2004" (<http://www.yale.edu/hardysoc/Links/linksone/Links.htm>), with descriptions and evaluations for most Web sites relating to Hardy. Robert Schweik and Rosemarie Morgan are to be commended for their efforts; but inevitably, their project suffers the same problems of upkeep that are common to all Web sites.

A different approach might be to take into account some basic corollary information about each site comparable to that which allows us quickly to gauge the credibility of a printed book or article: was it published by a university press or other scholarly publisher, was it peer-reviewed, and so forth? Similar questions about a Web site might be: is it affiliated with an institution (a college, university, or research library); was it initially grant-funded, and does that support continue; was it intended as an on-going scholarly project, a course-related site, or does it depend upon a single individual's spare-time effort? A preliminary attempt to construct such a resource is now under way through the Northeast Victorian Studies Association (<http://www.nvsa.org>).

The brand new NINES project is aimed at aggregating online, peer-reviewed scholarship, not indexing or annotating Web sites or primary sources: "The chief function of NINES is to protect, sustain, and enhance digital scholarship and criticism in nineteenth-century English-language studies" (<http://nines.org/about/index.html>). The intent is made explicit on the "Tools" page, which speaks of "six basic scholarly tasks: . . . *arranging*, *comparing*, *transforming*, *discussing*, *commenting* on, and *collecting* texts and images."

Primary Materials on the Web

ONE AREA in which the Web has realized its promise is in making out-of-copyright materials freely available. Copyright has expired for all Victorian publications, of course, and there are so many projects underway involving the digitization of Victorian texts that it will not be long before all standard texts are available online. Establishing the equivalent of copy

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texts will take a little longer. "Project Gutenberg" (<http://www.gutenberg.net/> – begun 1971) was the grandfather of this sort of initiative, but the consolidators there placed few limitations on what could be used as originals (it would be inaccurate to call them copy texts) and opted instead for readily available editions (see <http://www.gutenberg.net/about/history>).[8] "Bartleby.com: Great Books Online" (http://www.bartleby.com/ – begun 1993) was based on anthologies no longer covered by copyright, while Toronto's "Representative Poetry Online" (<http://eir.library.utoronto.ca/rpo/display/index.cfm> – begun 1994) was based on an anthology on which Toronto holds the copyright. Now, in addition to the very numerous collections of people's favorite poems, there are a few resources intending to establish scholarly editions. A short list of examples is: "British Poetry 1780–1910: a Hypertext Archive of Scholarly Editions," at the University of Virginia Library's Electronic Text Center (<http://etext.lib.virginia.edu/britpo.html.); the "Internet Library of Early Journals: A digital library of eighteenth- and nineteenth-century journals" (http://www.bodley.ox.ac.uk/ilej/ – no longer being updated); and, if we include nineteenth-century works rather than just Victorian, we would have to cite the "Romantic Circles Electronic Editions" site (<http://www.rc. umd.edu/editions/>).

Note should also be made of the "Eurodocs" site (<http://library.byu.edu/~rdh/eurodocs/>), which lists primary historical documents from Western Europe. However, this very useful project collects information about other sites which make "primary" texts available; it does not engage in creating its own archives. Consequently, there is no attempt to speak to the scholarly accuracy of the works it references. The caveat on the home page indicates as much: "These links connect to Western European (mainly primary) historical documents that are transcribed, reproduced in facsimile, or translated. . . . No guarantee of accuracy is implied or assumed, particularly for remote links over which the webmaster has no control."

Discussion Lists

USEFUL SCHOLARLY CONVERSATION takes place on various discussion lists, and most lists are archived. But rarely do those who post to even the most academically oriented lists (like VICTORIA) include references in their comments, and unsupported theories sometimes cause a flurry of messages. The members on these lists are often generous with their time when a researcher is stumped but are quick to sniff out the adventurous undergrad who would like to have someone else put his bibliography together for him. An instructor thinking of using a discussion list as an element in a course should first be thoroughly familiar with the tenor of discourse on the list. Subscribe to the list for a year or so and check the archives to see if the topics you are interested in have already been discussed in detail.

Some alternatives to e-mail lists have already been mentioned. These currently include electronic bulletin boards allowing for threaded discussion, "blogs" (Web-logs), "wikis," and "RSS."[9] (MUDS and MOOS have come and gone, and Friendster is not much more than a gleam in the eye of the technologically adventurous.)[10] All of these new technologies permit ongoing participatory discussion, and any one of them may come to replace the e-mail list as the favored method of electronic discussion. Each of these slightly varying technologies creates a slightly different medium of discourse; but the nature of the exchange in each

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medium is likely to be governed as much by the customs that arise with its usage as by any strictly technological limitations.

Search Engines and Online Searching

THE GROWING SOPHISTICATION of search engine algorithms is far more significant than recent developments in electronic resources and in the growth and greater accessibility of archives, which I have discussed so far. As the number of Web sites increases exponentially, we all become more dependent upon search engines, like Google or Dogpile, to filter the information for us.[11] In most cases, the search engine scans not the Web itself, but a database of information collected from the Web: most searches turn up some outdated links. Google, of course, has become so ubiquitously used that it has achieved verb status: one "googles" a topic now instead of "searching" it. Students should be expected to acquire some familiarity with Boolean searching, but should consult the help menus of the search sites which they are using to learn how best to tailor their searches.[12] Whatever search engine winds up at the top of the heap, it will be the one most popularly useful. Academically oriented search engines, like Google Scholar, are likely to be aimed at a niche market even within academia. Most academics will find adapting a powerful, commercially successful search engine more useful than the successor to Northern Light – in just the same way that MS Word has supplanted Nota Bene as the word processor most commonly used by MLA members.[13] Terry Winograd makes this same point:

> What surprised me . . . is that superficial search techniques over large bodies of stuff could get you what you wanted. I grew up in . . . the information retrieval tradition, where you have complex vectors of key terms and Boolean queries. The idea that you can index billions of pages and look for a word and get what you want is quite a trick. To put it in more abstract terms, it's the power of using simple techniques over very large numbers versus doing carefully constructed systematic analysis.

Winograd's discovery suggests that the most basic process of scholarly research – the search for relevant materials – may change profoundly in the next few decades, as search engines become more sophisticated. Currently, the most suggestive development – the use of filtering techniques based on Bayesian probability – can be seen by those using spam filters. One takes a sample batch of e-mail – perhaps 200 each legitimate and "spam" messages – and tells the anti-spam software which is which. The software, then "trained," filters all incoming messages, allowing the user quickly (or automatically) to delete all unwanted messages and read only those desired. As high as the accuracy is, the very cautious can examine the "junk" before deleting it, just in case a wanted message has been incorrectly designated spam. False positives – spam that makes it through the filter – are quickly dealt with, and increase the accuracy of the filter with each use.

The potential of this sort of filtering for literary scholarship should be clear. Scholars merely have to define what they are looking for, and then tell the search robot to filter all available resources or to roam the Web looking for relevant materials. And newer, more sophisticated search techniques are just over the horizon. Microsoft sees dollar signs here and is hard at work trying to put Google, Alltheweb, Dogpile, Altavista, and Yahoo out of business. Google is striking back with the development of Google Scholar and its recent

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agreement with Michigan, Stanford, Harvard, Oxford, and the New York Public Library to digitize the contents of their libraries and to put the results online through Google (Levine).

Caveats are necessary, of course. On the subject of "Google scholarship" (and Google Scholar), Ken Friedman has this to say:

> It seems to me that we must use several approaches. Google affords us a rich overview. It has been my experience that using Google as a research tool requires care and time. I've never done a serious Google search that yields truly rich results without about 2 hours of searching to allow for probes, comparison, and inquiry. Scholarship requires critical thinking based on analysis, logic, and rhetoric. Authoritative sources remain necessary for scholarship – along with the sampling and sifting that help us to generate ideas and form research strategies.

Still, if bibliographic searches can be accomplished at lightning speed, and if they produce accurate, complete, and highly relevant results, then the most important scholars may become those whose knowledge of search engine algorithms allows them to dash across the boundaries of sub-specialties and even entire disciplines. More and more, the scholarly specialist may begin to seem a figure whose knowledge is isolated and irrelevant. The influential thinkers may be those whose command of search techniques allows them to become instant experts in any area.

This change in the nature of research and scholarship is already being recognized: Robert Caro, who read through all of Lyndon Baines Johnson's papers in preparing his monumental biography of the thirty-fifth president, recognizes that the historian who tackles Bill Clinton's presidency will not be able to read through all 40 million e-mails sent (and recorded) by the inhabitants of the Clinton White House.[14] In the past, the usual procedure of the biographer has tended toward Caro-like obsession: to examine every scrap of written material about a subject, in the hopes or unearthing clues to the whole picture. But if the scholar finds records of e-mail or Instant Message exchanges for a subject, the sheer volume of materials escalates beyond the manageable. It seems to me that the task of the scholar will necessarily have to become, to some degree, automated. It will shift toward designing a search tool which can troll through the electronic archive in search of relevant materials. Once again, the better scholar will be the one who is more skilled in programming.

Twenty-First-Century Scholarship

WE CAN ALREADY SEE projects which give us tantalizing glimpses of the digital archives of the future: Jerome McGann's "Rossetti Project" (<http://jefferson.village.virginia.edu/rossetti/>) has certainly broken new ground and has been important in the evolution of scholarly resources on the Web, not just in the field of Victorian studies, as have Ed Ayers' "Valley of the Shadow" project (<http://valley.vcdh.virginia.edu/>) and the "Blake Archive" of Eaves, Viscomi, et al., (<http://www.blakearchive.org/>), also at Virginia. The "NINES" project (<http://www.NINES.org>) shows promise of addressing the most vexing questions having to do with the transition from paper archives to digital.[15] And the most sophisticated digital archive (entirely non-Victorian) is the "American Memory" project at the Library of Congress (<http://memory.loc.gov/ammem/index.html).

Regrettably, the more elaborate the resource, the more prone it is to obsolescence. As I have mentioned above, most Web resources have had to move at least once, as their supporting

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institutions changed technologies; "The Victorian Web," originally created in 1987 as part of the Intermedia project under George P. Landow at Brown, had to be ported in 1992 to StorySpace, and again in 1993 to the Web.[16] Jerome McGann's "Rossetti Project" had the distinction and the burden of being one of the earliest hypermedia projects in the humanities, and one that naturally ran into more difficulties in choosing technologies than later projects. It is about to undergo another restructuring. The history of electronic technologies is not encouraging in this regard. One might expect the CD-ROM disk to go the way of the 8-track audio tape, the Sony Betamax format, and the 5 1/4″ computer floppy disk as prices on DVD disks drop and there is less incentive for computer manufacturers to provide backwards compatibility to the old, outdated CD technology somewhere in the indefinite future – 5 to 10 years, in information technology terms.

Training for Twenty-First-Century Scholars

AN INFORMAL SURVEY conducted in December 2003 over the VICTORIA list disclosed that formal introduction to electronic research for graduate students is still the exception rather than the rule. Indeed, many graduate programs have discontinued the mandatory Introduction to Research course, opting instead for an introduction to criticism and theory. At the same time, English departments are expecting expertise in electronic resources and Web page construction in most of their new hires.

Instruction in the use of computers is indeed available for most graduate students, but this can be very much a hit-or-miss affair. They are likely to find themselves being instructed in the use of digital imaging, Excel spreadsheets, or other software packages (Hoyle). CUNY offers a nine-credit certificate program (Interactive Technology and Pedagogy) for Ph.D. students from all disciplines (Macaluso). Sally Mitchell of Temple, Patrick Scott of South Carolina, and Charles Robinson of Delaware have detailed rigorous research methods courses which they have taught (Robinson's being exceptionally rigorous), and the University of Virginia is of course a leader in the creation of digital resources, but the trend in graduate programs seems to be away from traditional methods courses and towards all-purpose instruction in the use of computers – which, to be sure, is likely to include some discussion of the library's databases and of Boolean searching. It is very much less likely to include extensive introduction to those collections of special interest to students in history or literature, and the opportunity to learn about such period-specific resources as Poole plus or the Wellesley Index is remote indeed. And, as Scott says, "who will ever discuss with them the rival print indexes to literary manuscripts – or Panzer, Goff, STC, Wing, Foxon, Sadleir, etc?" Let me take this opportunity to argue in favor of an introduction to traditional resources. The next generation of graduate students will have to figure out how to make use of the archives of the future, using methods of access that I have only been able to speculate about here. The only way of adapting those access services – which, I believe, are much more likely to be commercial rather than academic – is through a solid understanding of the use of traditional archives.

In an article for the *Chronicle of Higher Education*, Jerome McGann has already made a very similar point: "*In the next 50 years*, *the entirety of our inherited archive of cultural works will have to be re-edited within a network of digital storage*, *access*, *and dissemination*." He goes on to note that this conversion is being carried out by "librarians and systems engineers. Many, perhaps most, of those people are smart, hardworking, and literate. Their digital skills

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and scholarship are often outstanding. Few, however, have a strong grasp of the theory of texts." He is also concerned about the lack of attention to textual scholarship in our graduate programs:

> Just when we will be needing young people well-trained in the histories of textual transmission and the theory and practice of scholarly method and editing, our universities are seriously unprepared to educate such persons. Electronic scholarship and editing necessarily draw their primary models from longstanding philological practices in language study, textual scholarship, and bibliography. As we know, those three core disciplines preserve but a ghostly presence in most of our Ph.D. programs. (McGann, "Literary Scholarship")

Given my belief that the next few decades will see a change in the kind of activities that scholars undertake, a call for renewed emphasis on traditional scholarly training in graduate schools may seem counterintuitive. But perhaps traditional training was dropped because it seemed unnecessary; perhaps at one time most graduate students came into their programs with an understanding of scholarly methods sufficient to render that training superfluous. Whether or not that was ever truly the case, the ubiquity of the Web has changed the picture, and we can no longer assume a common understanding of and commitment to traditional scholarship. Of course twenty-first-century scholars will also need training in the new tools; but as the kinds of activities they will engage in change – and that change may be sudden and dramatic – the next generations of humanities scholars will need that preparation in current technologies to be combined with a thorough grounding in the traditional ends of scholarship if they are to effectively adapt these new tools.

As much as it feels that they have always been with us, we are still early in the life of these electronic resources. Their great virtue, which is their timeliness, is also their curse: they require constant updating. Most Web resources are being maintained by a single individual. When that person tires of the constant maintenance involved, the resource will either change hands, disappear, or rot. By contrast, print archives, once completed, retain their value. If they are not updated, then the publication date tells us the temporal context in which we must place them: we do not look to materials published in the last century for works which were published in this one. But electronic archives which are not updated simply become more and more out of date. Even if the archives to which they are linked have been updated, they have not, and their context has changed. If they attempt to provide live links to electronic materials, the usefulness of the archive is in inverse proportion to the percentage of link rot. One may anticipate some future electronic archive on the scale of, say, the *Wellesley Periodical Index*, but no institution has so far stepped forward to undertake such a project.

Stonehill College

NOTES

1. I.e., either thrown away or stored digitally, at the bank's discretion.
2. Such a point is sometimes called the "tipping point" in the adoption of new technologies. After the tipping point has been reached, even those opposed to the technology can no longer avoid it. On college campuses, the most recent example of such a technology is e-mail. While there can be

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vigorous argument about when exactly we reached the e-mail tipping point, it is clear that we are past it; whereas in the case of electronic archives, it is just as clear that we have not yet reached it.

3. "When I have read you a poem I have tried to read it rhythmically; . . . there is no other method. . . . To read a poem like prose, that hearers unaccustomed to poetry may find it easy to understand, is to turn it into bad, florid prose. If anybody reads or recites poetry as if it were prose from some public platform, I ask you, speaking for poets, living, dead or unborn, to protest. . . . William Morris, coming out of a hall where somebody had read or recited his *Sigurd the Volsung* said: 'It cost me a lot of damned hard work to get that thing into verse"' (Yeats, "Modern Poetry: A Broadcast"). To hear Yeats reciting a few of his own poems, visit the "Audio" section of the Yeats Society's Links page: <http://www.yeatssociety.org/links.html>. See especially the "William Butler Yeats Audio Files" (<http://students.depaul.edu/~tstukel/atd12.htm>) and "*BBC interviews* Yeats on modern poetry" (<http://www.bbc.co.uk/bbcfour/audiointerviews/profilepages/yeatsw1.shtml>), which includes a quotation from the "Modern Poetry" essay mentioned above.
4. "DVD" was once meant to stand for digital video disk, then for digital versatile disk. In a triumph of the acronym, it now stands for DVD.
5. It is astonishing to recall that the World Wide Web is little more than a dozen years old: Marc Andreessen's Mosaic browser was first released in February 1993 ("A Little History of the World Wide Web: From 1945 to 1995").
6. This is also true, of course, of published books that have included lists of links, like Browner, Pulsford, and Sears's *Literature and the Internet*. All such lists must admit that they will be outdated before the book is printed.
7. See <http://www.creationism.org/>, <http://www.talkorigins.org/>, or <http://www.darwins-theory-of-evolution.com/>.
8. Michael Hart offers the following information about the way "Project Gutenberg" materials were distributed before the advent of the Web:

> Yes, 1971 was our start date. . . . Originally . . . we put an announcement in what later became "comp.gen" for general computer announcements. This instructed people to send us an email requesting that we mount the proper tape, and then we let them knew where it was on the tape. Today there are hundreds, probably thousands, of sites that carry the Project Gutenberg eBooks, all kinds, all places. In between was, as you surmised: FTP, Archie, Veronica, etc.

   Hart also indicates that an extensive history of "Project Gutenberg" will soon appear on the site. (Hart, e-mail to Glenn Everett, 29 Jan 2005).
9. *Blog*: a Web-log. Allows a user (sometimes a group of users) to easily post entries on a Web page. Blogs tend to read like journals. Some of the best-known blogs were set up by news correspondents in the latest Iraq war. *Wiki*: a collaborative Web space wherein any user can edit any page. The most obvious example is Wikipedia. *RSS*: a method of conveniently aggregating updated information ("RSS feeds") from sites (often electronic journals) that have set up RSS servers. See Downes and Lamb for discussions of these terms.
10. *MUD* and *MOO*: a "Multi-User Domain" and an "Object-Oriented MUD" were both virtual environments in which participants could not only send messages to each other, but also move from room to virtual room and encounter virtual objects. *Friendster* (see friendster.com) is a step beyond online chat environments like AOL Instant Messaging, intended to promote social networking via the Internet.
11. See Browner, Pulsford, and Sears, 17–22, for a basic (if dated) introduction to Web searches.
12. One of the delights of the Web is the material serendipitously gathered during a search. Without access to Web resources, one might miss entirely the existence of the *Wuthering Heights* role-playing game (<http://philippe.tromeur.free.fr/whrpg.htm>); the 2003 MTV movie set in modern-day California ("Toss your notes out the window because this ain't your English teacher's *Wuthering*

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Heights"), featuring Cate, Heath, Hendrix, and Raquelle, not to mention original tunes by Jim Steinman, "the tunesmith behind Meatloaf's rock opera *Bat out of Hell*" (<http://www.mtv.com/onair/wuthering_heights/>); the Kate Bush song ("Wuthering Heights" on *The Kick Inside* (EMI, 1978) (<http://gaffa.org/discog/albums/tki.html>); *Heathcliff*, "the major musical of the nineties," produced by and starring Sir Cliff Richard (<http://www.heathcliffmusical.com/index.html>); Bernard J. Taylor's *Wuthering Heights: The Musical* (1992); the 1958 opera by Carlisle Floyd; or the entry in *Wikipedia, The Free Encyclopedia* (<http://en.wikipedia.org/wiki/Wuthering_Heights>). But it must also be pointed out that a Boolean search which includes *both* "wuthering" *and* "bronte" will eliminate some of these unexpected delights.

13. In 1982, the MLA encouraged the development of Nota Bene, a word processor (eventually combined with the Orbis text-base manager and the IBID bibliography generator) specifically for the needs of academic humanists (Putnam). Nota Bene still exists, but even among academic humanists it has never come close to supplanting Microsoft Word, which has gradually included most of the tools needed by academic writers. (Nota Bene remains the tool of choice for scholars working in several languages.) Similarly, one must expect commercial search engines to have greater reach than specifically academic ones.
14. See "Clinton's gift." Caro, I think, makes an incorrect assumption, that all e-mail exchanges are the equivalent of notes and memos, whereas many of them seem to me much more casual, the equivalent of hallway greetings.
15. The disproportionate influence that the Mellon Foundation is having on this particular problem is worthy of note. It is hard to think of a project having to do with digital archives and the humanities that has not benefited from Mellon funding. (A short list: The National Institute for Technology and Liberal Education (NITLE), the Institute for Advanced Technology in the Humanities (IATH) at Virginia, the Rossetti Archive, the Blake Archive, and the NINES project.) While the Mellon Foundation's ongoing interest in this area is to be applauded, one could wish that other foundations and government agencies were more active in their support.
16. See Landow, "Credits: Who Created The Victorian Web?" (<http://victorianweb.org/misc/credits.html>)

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