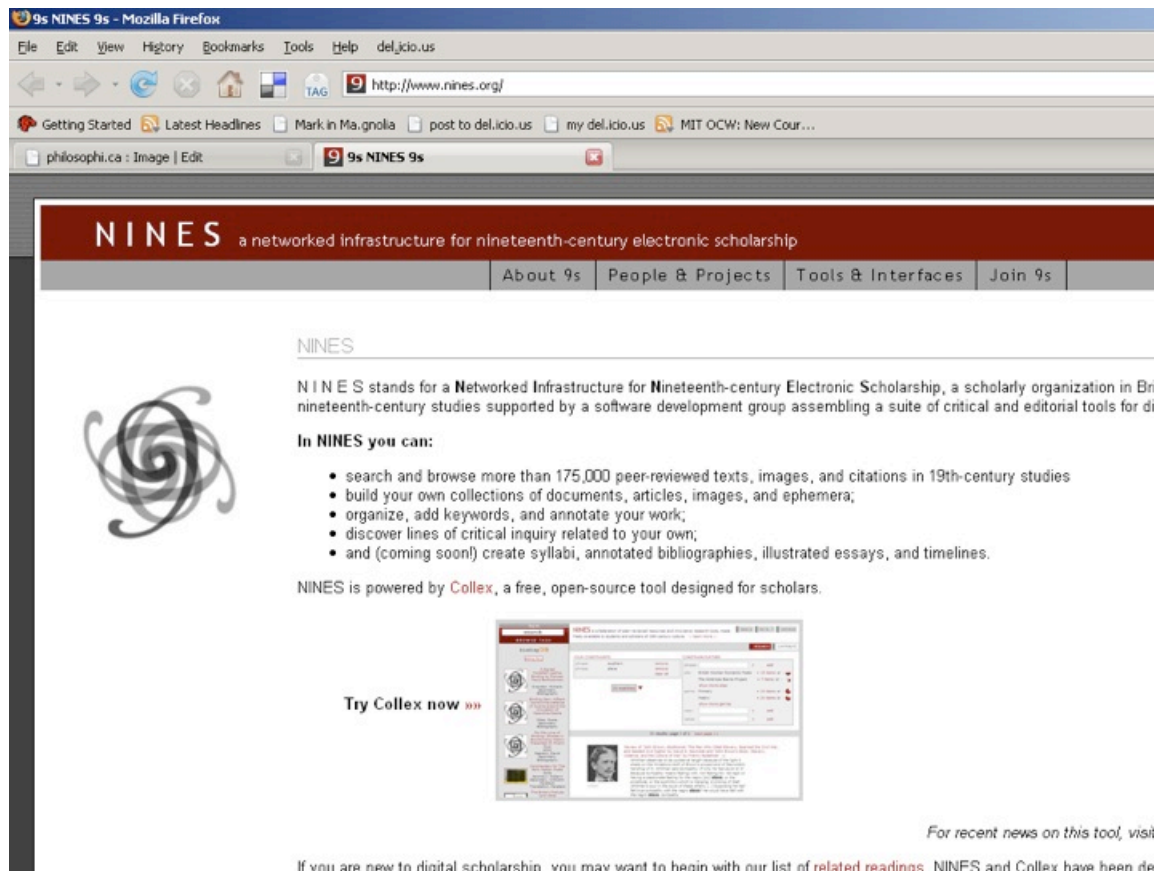


Laura Mandell
Associate Director, NINES
Miami Univ., English
A talk delivered at Dartmouth College,
August 1, 2008

The Future of Humanities Scholarship in the Digital World

I offer in this talk today one example of what's happening in the field of digital humanities: NINES.



The screenshot shows a Mozilla Firefox browser window displaying the NINES website. The browser's address bar shows the URL <http://www.nines.org/>. The website's header features the NINES logo and the tagline "a networked infrastructure for nineteenth-century electronic scholarship". Below the header, there is a navigation menu with links for "About 9s", "People & Projects", "Tools & Interfaces", and "Join 9s". The main content area includes a large, stylized logo of a spiral, followed by the text "NINES stands for a Networked Infrastructure for Nineteenth-century Electronic Scholarship, a scholarly organization in British nineteenth-century studies supported by a software development group assembling a suite of critical and editorial tools for digital humanities." Below this, a section titled "In NINES you can:" lists several capabilities: searching and browsing more than 175,000 peer-reviewed texts, images, and citations; building personal collections; organizing and annotating work; discovering critical inquiry lines; and creating syllabi, bibliographies, and timelines. A note mentions that NINES is powered by Collex, a free, open-source tool. A "Try Collex now" link is provided, accompanied by a small thumbnail image of the Collex interface. At the bottom, there are two lines of text: "For recent news on this tool, visit" and "If you are new to digital scholarship, you may want to begin with our list of related readings. NINES and Collex have been de".

One of the key reasons for founding the Networked Infrastructure for Nineteenth-century Electronic Scholarship – NINES, for short – was to meet the crisis in scholarly publishing that has been so well outlined by Robert Darnton, Robert Scholes, and Stephen Greenblatt, spokespersons for the fields of history, literature, and the modern languages. By peer-reviewing digital texts and archives, NINES could insure that decision-making

about the publication of monographs, articles, and editions would be based on scholarly merit rather than economic necessity. NINES arose in response to what was then a clear prejudice harbored by promotion and tenure committees: that any electronic scholarship was no more than a web page slapped up and shoddy, that web publication was a way of flouting scholarly requirements upheld by presses and journals, and finally that the production of digital materials should be valued as nothing more than teaching and service. Of course, many web publications are indeed teaching and service.

AMERICANIST BOARD

Peer review of **Americanist** work in NINES is overseen by John Bryant of the **Melville Electronic Library** and by Kenneth Price of Nebraska's **Center Digital Research in the Humanities**. Contact them at: american@nines.org. The following scholars serve on the editorial board for this NINES content

- Stephanie Browner, Berea College
- John Bryant, Hofstra University
- Amy Earhart, Texas A&M University
- Sharon Harris, University of Connecticut
- Andrew Jewell, University of Nebraska-Lincoln
- Mark Kamrath, University of Central Florida
- Joel Myerson, University of South Carolina
- Venetria Patton, Purdue University
- Timothy Powell, University of Pennsylvania
- Kenneth Price, University of Nebraska-Lincoln
- Martha Nell Smith, University of Maryland
- Haskell Springer, University of Kansas
- Eric Sundquist, University of California
- Perry Willett, University of Michigan

ROMANTIC BOARD

The NINES editorial board for **Romantic** scholarship is headed by Neil Fraistat and Steve Jones of **Romantic Circles**. Contact them at: romantic@ni. The following scholars serve on this board:

- James Chandler, University of Chicago
- Adriana Craciun, Birkbeck, University of London
- Stuart Curran, University of Pennsylvania
- Morris Eaves, University of Rochester
- Michael Eberle-Sinatra, Université de Montréal
- Elizabeth Fay, University of Massachusetts
- Neil Fraistat, University of Maryland
- Jerrold Hogle, University of Arizona
- Anne Janowitz, Queen Mary University of London
- Steve Jones, Loyola University, Chicago
- Debbie Lee, Washington State University
- Marjorie Levinson, University of Michigan
- Alan Liu, University of California, Santa Barbara

But the purpose of the NINES editorial boards – an illustrious group of Romanticists, Victorianists, and Americanists – was not only to separate high-quality scholarship from other kinds of digital materials, but to do so in an economically-sustainable manner, by performing the reviewing functions of a press and leaving other publication matters (proofing, coding, delivery) to the authors themselves, aided by emerging institutional

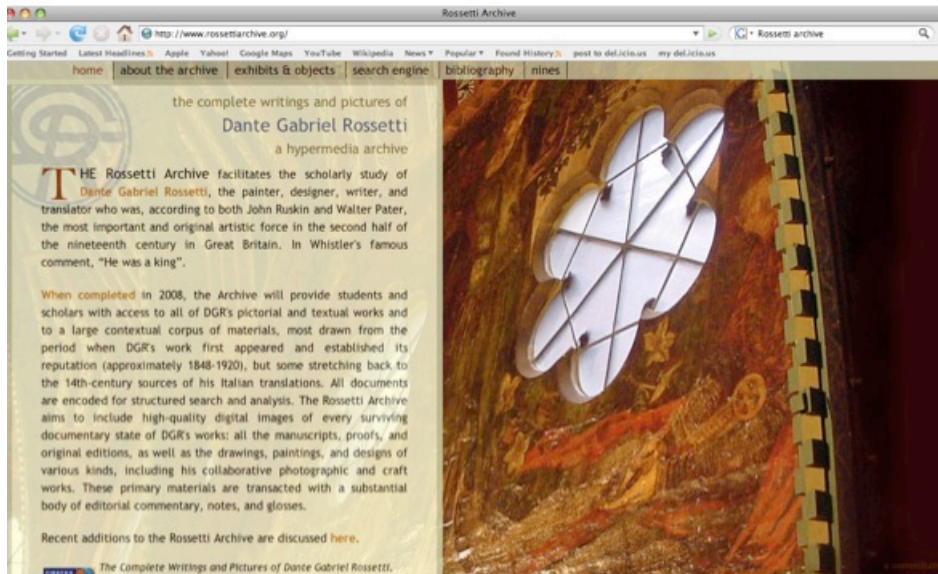
support systems of various kinds. The twenty-two sites that have been peer-reviewed and federated by NINES so far comprise fully one-fourth of the first freely-available digital resources to be catalogued in the MLA bibliography. In short, it worked.

For those new to the field of digital humanities – you know you’re a field when there is a Blackwell Companion! – let me just say that a digital resource is an online archive of texts that have been carefully edited and encoded in order to be library quality, that is, like microfilm, something a library can keep.

But what *is* NINES? NINES began in 2004 at the University of Virginia, when Jerome McGann applied the proceeds of a Mellon Distinguished Lifetime Achievement award to the crisis in scholarly publishing. Could a sustained, scholar-driven experiment in digital publishing produce new models and modes of work? Originally, the idea was to review digital scholarship and take the best of it in both technological and scholarly senses into a single server and some kind of uniformly coded web space. Our initial imagination about digital publishing, constrained in some senses by the strictures of print, held that the web sites would be published by some single entity – a library or a press – and the NINES Steering Committee, constituted in 2005, went back and forth over which it would be, meeting with the University of Virginia Libraries, London University Libraries, University of Virginia Press, and Johns Hopkins Press. Luckily for us, the Blake Archive proved to be the insuperable hurdle, and of course the impossibility had to do with copyright.

Clearly, the Blake and Rossetti Archives,

The Rossetti Archive



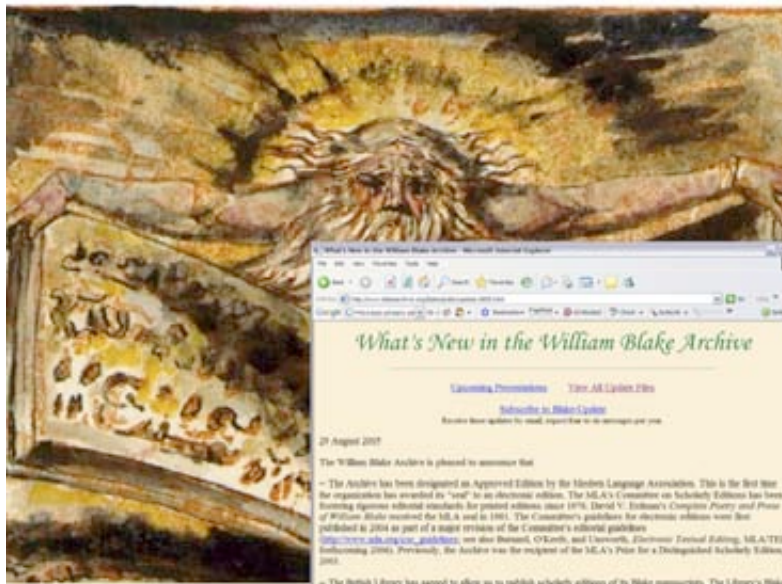
two of the most important digital scholarly editions in the field of nineteenth-century studies, and Romantic Circles, publisher of scholarly editions but also much, much more, had to be part of NINES for it to claim status as the clearinghouse for nineteenth-century electronic scholarship. We originally assumed that sites like Blake, Romantic Circles, and Rossetti, once they had reached a certain level of conceptual and procedural development, would pass into this digital publishing house for maintenance and storage.

The Blake Archive:
Songs of Innocence and of Experience—
Contributors

ence and of Experience

[and of Experience, copy B, 1789, 1794 \(British Museum\): electronic edition](#)
[and of Experience, copy C, 1789, 1794 \(Library of Congress\): electronic edition](#)
[and of Experience, copy F, 1789, 1794 \(Yale Center for British Art\): electronic edition](#)
[and of Experience, copy A, 1795 \(British Museum\): electronic edition](#)
[and of Experience, copy L, 1795 \(Yale Center for British Art\): electronic edition](#)
[and of Experience, copy R, c. 1795, c. 1808 \(The Fitzwilliam Museum\): electronic edition](#)
[and of Experience, copy T, 1789, 1794, 1818 \(British Museum\): electronic edition](#)
[and of Experience, copy V, 1821 \(The Pierpont Morgan Library\): electronic edition](#)
[and of Experience, copy Y, 1825 \(Metropolitan Museum of Art\): electronic edition](#)
[and of Experience, copy Z, 1826 \(Library of Congress\): electronic edition](#)
[and of Experience, copy AA, 1826 \(The Fitzwilliam Museum\): electronic edition](#)

However, the Blake Archive had negotiated contracts with libraries and museums around the world, for reproducing Blake's illuminated manuscripts,



and these contracts all stipulated that the materials not be sold, that they be made freely available. University presses would have to charge subscription fees for NINES in order to maintain the resources. Libraries were at first more promising, but again, it seemed that site maintenance and updating would require some kind of fee structure unless we

could work out cost-sharing among institutions. And what institutions would want to share costs? Why?


I say “luckily” in referring to the insuperability of transferring Blake to any sort of fee structure because of the obvious reduction to be imposed upon these sites in separating them from their creators, their current driving forces. A digital archive is unlike any other so far known to us. Sheer maintenance, like the appropriate place and proper room temperatures required for the preservation of a physical artifact, is out of the question. While it is rather easier to see formally-designed digital editions like Blake and Rossetti transferring their texts and images to a publisher that could accept and encode new acquisitions according to established practices, what would it mean to publish Romantic Circles via some structure other than a digital humanities center?



The diagram features the words "ROMANTIC CIRCLES" in a large, blue, serif font, arranged in a circular pattern. Inside this circle are several smaller blue circles, each containing a label for a website feature: "RC BLOG", "PRAXIS", "ELECTRONIC EDITIONS", "SCHOLARLY RESOURCES", "ABOUT RC", "PEDAGOGIES", "RC MOD", and "REVIEWS". In the center of these circles is the text: "a Weblog for posting news, announcements, and notes of interest to Romanticists". Surrounding the central circle are four larger yellow circles with blue borders, each containing an icon and a label: "NEW @ RC" with a portrait of a man and the label "Text-Only Index"; "SEARCH RC" with a search bar and the label "Advanced Search"; "FORTHCOMING" with a building illustration and the label "RC Audio"; and "Associate Editors: Ron Broglio, Melissa Sites, Kate Singer" and "Site Managers: Joseph Byrne, Dave Rettenmaier, Mike Quilligan".

General Editors: Neil Fraistat, Steven E. Jones, and Carl Stahmer

Romantic Circles is a refereed scholarly Website devoted to the study of Romantic-period literature and culture. It is published by the University of Maryland and supported, in part, by the Maryland Institute for Technology in the Humanities (MITH), and the English Departments of Loyola University of Chicago and the University of Maryland. [Find out more.](#)



Romantic Circles is currently a project produced by MITH, the Maryland Institute for Technology in the Humanities. On this site one finds daily activity,

The screenshot shows a web browser window displaying the 'New at Romantic Circles' page. The browser's address bar shows the URL: <http://www.rc.umd.edu>. The page content includes:

- LOG** & announcements from the RC community
- TRICK PHILLIPS, ROSS GAY, A**
- to announce the latest edition of its Po...
ext files of readings by three contemp...
and from *The Prelude* XII; Ross Gay...
ling Shelley's "Ozymandias" and from...
s free MP3 downloads from the Websi...
- [ditions/poets/toc.html](#)
- RSS feed or via iTunes. (See instructi...
- OLARS AWARD**
- olars represents the promise and long-term future of interdisciplinary scholarship in 19th-...
ion of the excellent publications of this constituency of emerging scholars, the Nineteenth...
1 (NCSA) announces the creation of the Emerging Scholars Award.
- standing article or essay published within five years of the author's doctorate. Entries can...
ing on any aspect of the long 19th century (the French Revolution to World War I), must be

The browser window also displays a calendar for October 2007 and a list of archive dates from July 2006 to October 2007.

the constant lineup of submissions waiting in the queue for production, each with their own new set of requirements, each modifying the site as they are incorporated into it. Scholars submit things more or less coded – even beyond that, they really only more or less submit things (we had literally to rip at least one edition from the screen and completely re-design it in house). How would blogs and podcasts, syllabi and CFPs for special issues work? Sure, they could be funneled through one editor for each section of the site, and then funneled down even further to a tech person at a library or a press – but the energy, discussions about projects, the help with design and coding, the give and take between the scholars and staff involved, all that would die. In order to be published by a

press, there would be superimposed upon Romantic Circles a false dichotomy between content and form.¹

Critical Inquiry / Autumn 2004 53

Transcendental Data: Toward a Cultural History
and Aesthetics of the New Encoded Discourse

Alan Liu

The SICK ROSE

O Rose thou art sick.
The invisible worm,
That flies in the night
In the howling storm:

Has found out thy bed
Of crimson joy:
And his dark secret love
Does thy life destroy.⁹

What is the best way for the author to send not just the content of the poem but also the exact instructions for processing that content? The general goal is to enable the greatest number of machinic idiot savants at the other end—by turns dumb and brilliant in ways the author cannot predict—not just to receive the poem but also to do something intelligent with it, whether reproducing the original or something else.

A poor solution, it turns out, is to transmit procedures. A procedural instruction for the display of the poem, for example, might say in essence: “display the first line beginning at screen position 400 pixels on the x-axis, 500 pixels on the y-axis.” Such instructions tell the machine exactly what to do, but for that reason are not readily adaptable when circumstances vary. (What would a small cell phone screen, for example, do with a line of text offset 400 pixels to the right?). Procedural instructions also allow for little use of intelligence by the receiving machine to adapt the content to local needs—for

And even the more established uniform encoding of digital archives such as Rossetti belies a great deal of back-and-forth consultation and development. How would a cost-recovery model permit a healthy level of scholarly revision at the larger scale required for digital work?

Libraries have of course expanded to accommodate research and development: they are now staffed by software developers and actively engage in planning and developing infrastructures adequate to new media.



They are not in any sense of the word dead places, and the more progressive among them are redefining themselves as sites for discourse rather than warehouses for its products. But the mission of libraries, bound up as it is in commodity structures of preservation and access, cannot and should not be the creation of interpretive, topic-specific online communities. In a forthcoming article, Ken Price, editor of the Whitman Archive,



calls these thematic research collections “arsenals” – a play on the bellicose origin of the term “magazine.” Libraries do create and share online editions of things, but, in contrast to digital archives such as Rossetti and Whitman, those editions are usually based on their own holdings or acquisitions. Acquiring, holding, and sharing for scholarly use are the primary – and valuable – stewardship activities of research libraries. Interpretation and communication, however, fall squarely to the scholarly community. Libraries can foster online scholarly communities and develop or adopt new mechanisms to enable social research. But the position of libraries vis-à-vis material culture means that giving Blake’s illuminated books, even digitized, to a library would be tantamount to transferring them from one owner to another.

The difficulty for libraries is the same difficulty that NINES had to overcome. McGann recognized and insisted from the outset that NINES had to be able to incorporate the Blake Archive and Romantic Circles because it needed to be the kind of entity that could do so, whether in fact the editors of each site chose to participate in NINES or not. What he had to grapple with in developing NINES is that fact that neither Blake nor Romantic Circles – models, for us, of complex entanglements characteristic of “free culture” digital editions and of living scholarly communities – could be treated like commodities.

Commodities by their very structure cannot be free – Slavoj Žižek has written that, whenever he sees a bottle of something that says in bold letters “30% more ABSOLUTELY FREE!” he wants to ask for just that 30%, just the free portion. But it’s more than that: commodities also, by their very structure, per Karl Marx, conceal the conditions of production.

**Outline of Marx's
"The fetishism of commodities"**

[This passage is part of the introduction to volume I of *Das Kapital*, which Marx subtitled "a critique of political economy". It is, among other things, a critique of the ways "bourgeois" economists misunderstand the capitalist economy, and why they misunderstand it in the way they do. "Fetishism" refers to the practice of attributing human powers to material objects. Page references are to *Karl Marx, Selected Writings* edited by David McLellan.]

I. Commodities—[the key distinguishing feature of the capitalist economy]—are strange things.

- A. Their nature as commodities does not arise from the fact that people produce them. People in all societies produce useful goods—but goods are commodities. [435]
- B. Commodities gain their peculiar nature through market exchange.
 - 1. When people produce goods for the market, the value of those goods is set not by their usefulness, but by their ability to be exchanged. [436]
 - 2. The labor embodied in these goods thus likewise becomes valued not for its usefulness, but for its ability to generate exchange. [437]
 - 3. People's labor—an aspect of their humanity—thus itself becomes a commodity, to be bought and sold. Different kinds of labor are equated, because they can be exchanged for the same amount of goods. The social character of this labor thus comes to be seen as a relationship between things. [437-8]
- C. Thus when we look at the economy, instead of seeing a set of relationships between people, we see a set of relationships between things. Iron and two ounces of gold appear to be "naturally" equal in value, just as one ton of each substance is equal in weight. The social relationship that creates their equal value [the amount of labor which they embody] disappears from our consciousness. [438]

II. Economists forget the source of the value of commodities—human labor—and describe the world as if coats or boots trade independently of human agency. They fail to see that only capitalist production treats goods in this way, and thus mystifies real relations. [439]

- A. Other economies do not hide the fact that the economy is based on the social relations of labor.
 - 1. Robinson Crusoe's 'economy' is not based on commodities, but on labor to create useful things. This economy is not mystified, and its value in it—labor—is clear. [439-440]
 - 2. The medieval economy was built on dependence; goods were given and goods were received on the basis of social relationships and submission. But these relationships were apparent to all. The economy was seen as a result of these social relationships, not separate from human beings. [440]
 - 4. Peasant labor is likewise dominated by production-for-use. Here, too, the origin of the economy in human labor is open for all to see.
- B. One can imagine a community of free individuals, in which production arises out of free cooperation, and in which goods are shared as each contributes toward their production. Here, too, the primacy of human labor in the production of goods for use is obvious. [441]

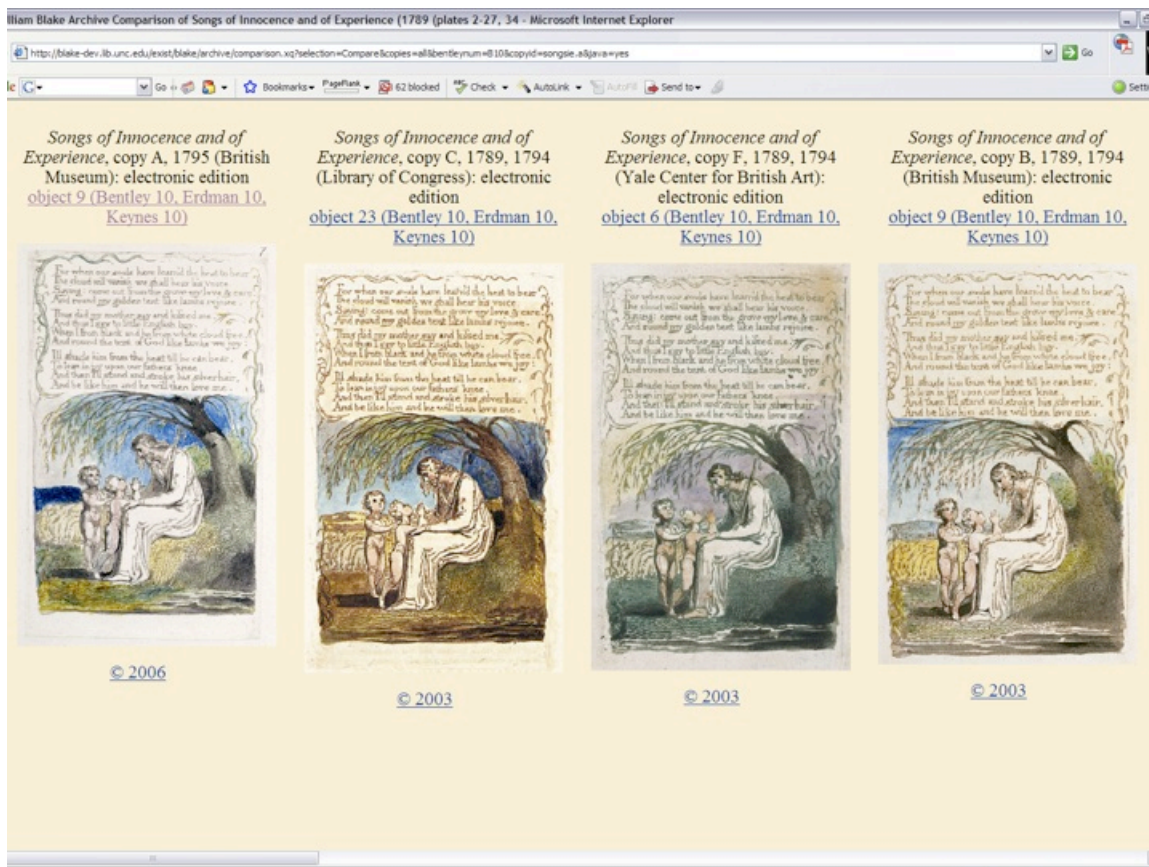
III. Religion merely reflects the real world.

[Figure Source: Prof. Jim Spickard,

http://www.socialtheory.info/commodity_fetishism.htm]

I refer to the fact that these digital resources do not, and cannot, disguise the human agency that creates them because the continuous activity of creation is intrinsic to what they are. Clearly, scholarly activity is the primary feature of Romantic Circles; it's still alive and kicking with incoming materials continuously reshaping it. It has no thingness or imagined essence: if it is any thing, it most resembles a living cell, its structure altering with the incorporation of surrounding materials.

But surely a creation like the Blake Archive is a commodity.

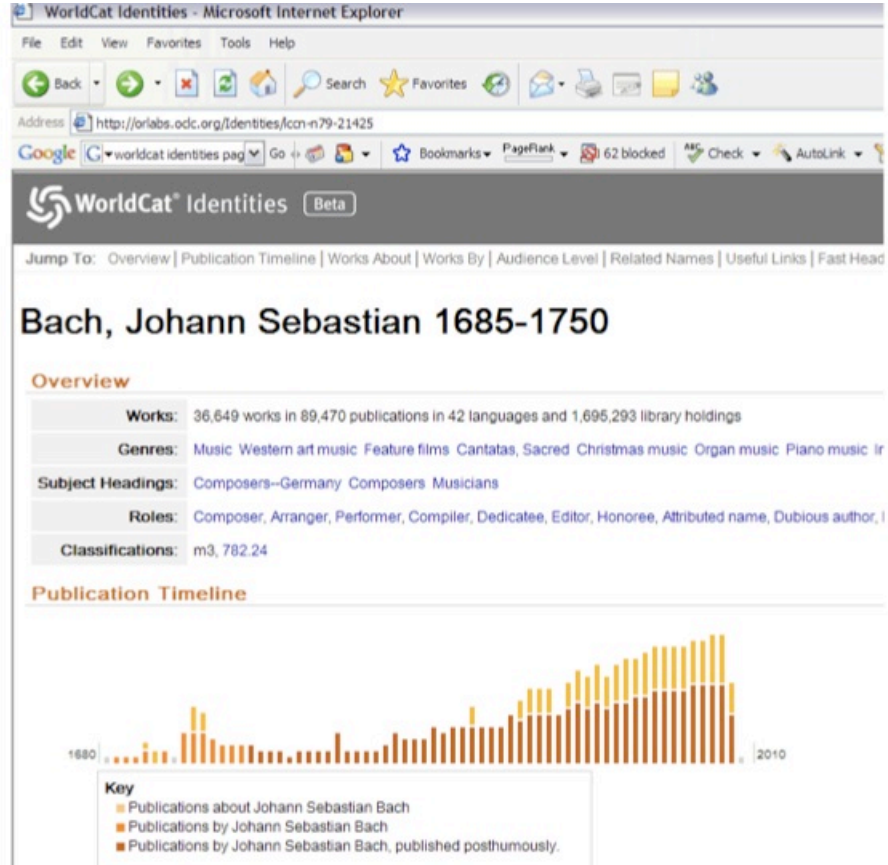


MLA just gave it an award for best scholarly edition: it is an edition of Blake's works, like any print edition one might purchase and place on a shelf. Several years ago, a copy

of *Songs of Innocence and of Experience* sold for \$1.5 million at Christy's, as was reported in *Blake: An Illustrated Quarterly* to which one might subscribe. But the Blake Archive collects holdings from everywhere. In contrast to any print edition describing relationships among Blake's prints, in the Blake Archive, the comparisons between different "editions" of each illuminated manuscript have only just begun. Blake's interface desperately needs updating – the XML coding for fuller participation in the semantic web is currently underway. Its image delivery and annotation system has to evolve based on what people want to do with it; search terms need to change based on usage; search modes need to and will change, as Morris Eaves recently explained, with changes in imaging technology. That said, to the extent that the Blake Archive imitates a printed edition of Blake's illuminated manuscripts, albeit a huge one, to that very extent it is still a commodity and still unusable by scholars as a social research environment. To the extent that it incorporates scholarly work in the site itself – for instance, allowing users to generate search terms for prints – to that extent, it would become a living digital archive.

Libraries struggle insofar as the library mission is stewardship (an outward-looking notion that encompasses care for objects but also for the evolving uses to which we put them) while the object this stewardship oversees is a commodity, a fixed thing. But libraries are working to develop scholarly environments -- D-space, Fedora, digital repositories like Aquifer that span several institutions -- and to explore Web 2.0

interfaces,



using customizable AJAX interaction, syndicated (RSS) feeds to facilitate specialized research, tag clouds for exposing shared terminology,

Useful Links

- Library of Congress Authority File (English)
- Deutsche Nationalbibliothek Authority File (German)

Associated Subjects

Bach, Johann Sebastian,--1685-1750 Biography Canons, fugues, etc. (Harpsichord) Canons, fugues, etc. (Organ) Canons, fugues, etc. (Piano) Cantatas, Sacred Cantatas, Sacred--Excerpts Cantatas, Sacred--Vocal scores with piano Cantatas, Secular Chorale preludes Chorales Choruses, Sacred (Mixed voices) with orchestra Christmas music Composers Concerti grossi Concertos (Harpsichord with string orchestra) Concertos (Violin with string orchestra) Concertos (Violins (2) with string orchestra) Criticism, interpretation, etc. Facsimiles Germany Guitar music, Arranged Harpsichord music Instrumental music Magnificat (Music) Manuscripts Masses Masses--Excerpts Motets Music Oratorios Oratorios--Excerpts Orchestral music Orchestral music, Arranged Organ music Passion music Piano music Piano music, Arranged Sonatas (Organ) Sonatas (Piano) Sonatas (Violin) Suites (Harpsichord) Suites (Orchestra) Suites (Piano) Suites (Violin) Suites (Violoncello) Toccatas Variations (Harpsichord) Variations (Piano) Wedding music

Internet Explorer

and faceted browsers such as Blacklight (itself a promising NINES spin-off) for enhanced discovery. But questions arise here. Of course, libraries lead the way in figuring out how

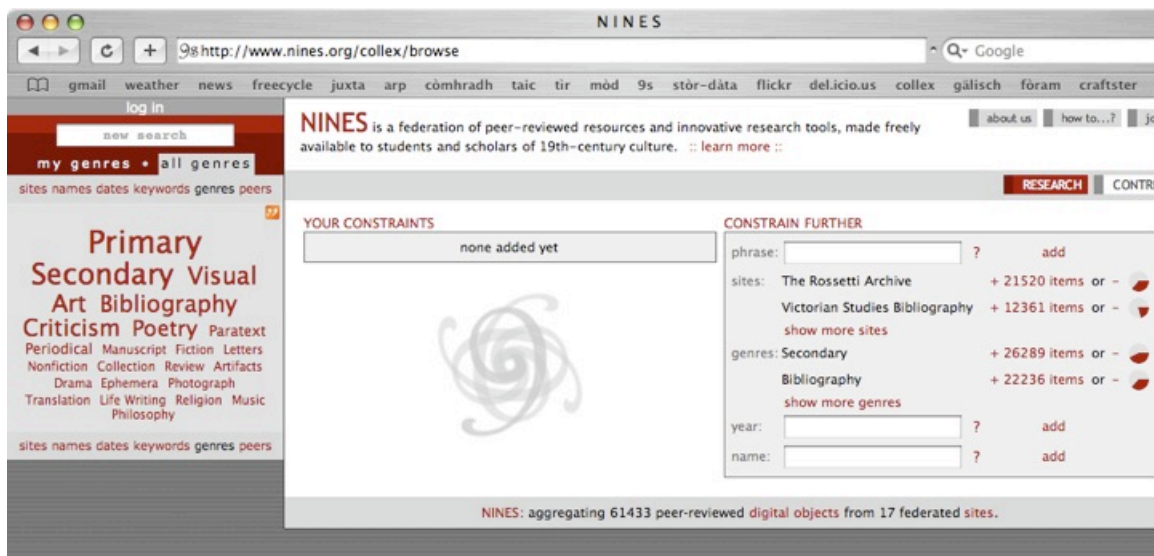
to manipulate digital archives, but will they incorporate open, living, evolving scholarly communities in what they do?

To the extent that they present commodities to the world, libraries operate under the sign of eternity: objects have to be divested of current cultural context, granulated out of immediate application in scholars' hands, in order to be findable for the future. Commodities pretend to be eternal, to offer immortality to their possessors. Marx thought that aspect of them delusional and deluding – their alleged immortality is dismantled in his critique of commodity fetishism. But looking at libraries, one can say that the commodity form entails a pretty spectacular information architecture: our modern library system of MARC records is Alexandria 2.0, well-fortified against crash or burn. What the history of NINES suggests to libraries is that that system has to budge, has to allow for the ephemeral as well as the eternal, if libraries can host living scholarly communities, organized by the interests of our time.

To continue with my history of how NINES evolved, it was precisely such an insight about the Rossetti Archive, that it needed to incorporate as a fundamental part of the archive itself ideas about how scholars currently use it, which drove NINES to become so much more than a peer-reviewing agency. In 2004, Bethany Nowviskie, then a post-doctoral researcher charged with redesigning the Rossetti Archive interface, developed the idea of inviting scholars to come to UVA for a summer workshop in order to build tours or exhibits of Rossetti materials, much as they would travel around to libraries gathering materials for an article or edition. These exhibits would become part of the archive; they would show people how to use it – how to become itinerant scholars in this virtual space – as well as offering instances of great scholarship, again, like any

journal article or scholarly edition. More important would be the contribution of particular interpretations or scholarly perspectives to what had become, because of its sheer size and difficult SGML navigational structures, an impossibly deep and obscure archive. Conversion to XML, which allowed for more flexible delivery and display, would only go so far. Nowviskie perceived that the Rossetti Archive lacked an evident interpretive dimension despite the fact that it had been assembled as an engine for infinite interpretation. Curated exhibits would make these possibilities clear at last.

However, in gathering resources and developing a kind of training curriculum for digital editing in the Rossetti environment, Nowviskie realized that one needn't bring scholars to UVA at all, so long as it were possible to create an adequate searching and browsing interface for information discovery and collection, and to develop for scholarly use a fairly simple exhibit-building tool. To design such a thing for the Rossetti Archive would be to design it for all peer-reviewed resources in NINES and, by extension, for work by other research communities. This would become the Collex tool that forms the backbone of NINES:



a COLLections and EXhibits mechanism for the semantic web.

It is the latter insight that drove restructuring NINES in a way that has made it a successful gatherer of digital resources. I firmly believe that it would have failed otherwise. Moreover, development of the Collex tool by NINES provides a key instance of the structuring power of software, its fundamental impact upon cyberinfrastructure as it evolves. At first, NINES imagined rather literally taking in each digital object approved by the editorial boards. The archive that was accepted would be coded according to the guidelines of the Text Encoding Initiative— there were debates about whether this encoding would be TEI proper, TEI Lite, or a specialized NINES flavor of TEI. A component of any document’s “Revision Description” would be information about its having passed through NINES peer review, so that each digital object would be a free-standing NINES document, complete with a reception and production history, as well as being part of its native archive. That idea is lovely for anyone working toward tenure, but rather more than the editorial board could imagine: I still remember Neil Fraistat asking, “would we have to exhaustively read over and edit every object in an archive? What if one of them is *Moby Dick*, for instance?” Presses could and routinely do peer review editions of *Moby Dick*, but the peer-reviewing and editing process costs money, from the administrative staff who divide up jobs to the copy-editors who finish off the product; a single scholarly reviewer, if unpaid, isn’t asked to review all of Melville’s works, nor to check the final copyediting as well as the scholarly apparatus -- as would be required by this model of NINES. And there were other worries: would archives and research clusters such as Romantic Circles have to submit every new

addition to their site to NINES for peer review after it had passed through Romantic Circles' own editorial board? The problem was not so much that becoming a NINES-approved digital archive would require a massive (if automatable) recoding effort; actually Romantic Circles is itself currently involved in such an effort simply in order to participate in the semantic web and Web 2.0. The problem was an overlay of control over site development that could merely slow things down, but also might entirely gum up the works: adding NINES oversight to the process of creating and vetting digital materials already set up by Romantic Circles could change its very nature.

In building a collection and exhibit tool that would enable scholars to repurpose NINES-approved digital resources,

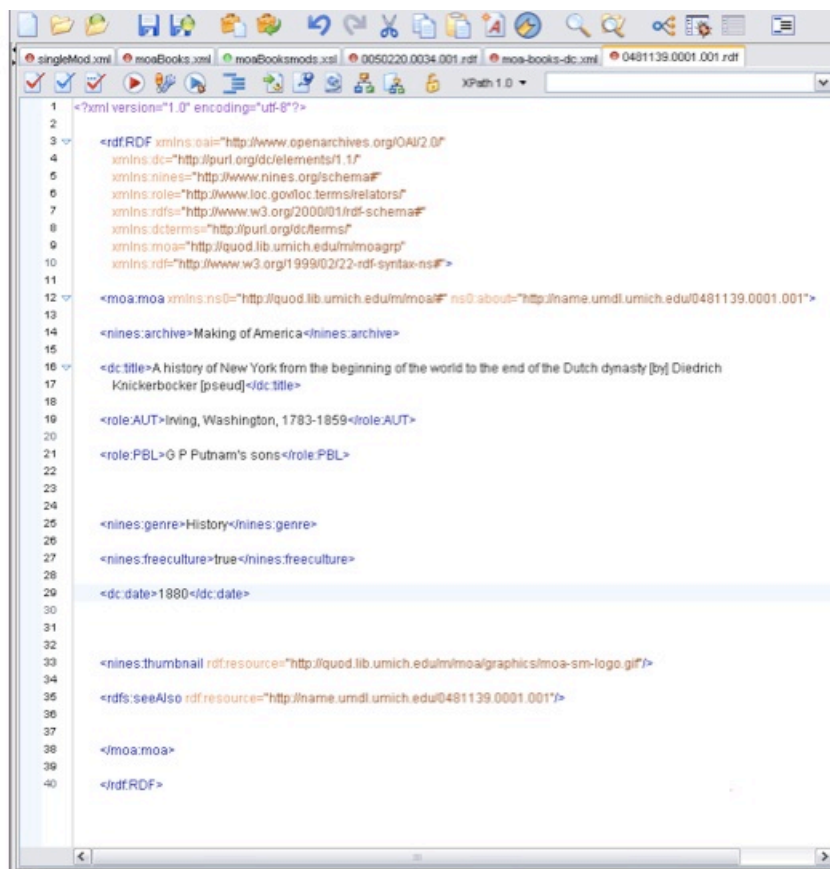
COLLEX exhibit tool

The screenshot shows a web browser window with the NINES logo in the top left. The main header contains the text: "NINES is a federation of peer-reviewed resources, citation records, and innovative research tools, made freely available to students and scholars of 19th-century culture. :: learn more ::". To the right of this text are links for "about us", "how to...?", and "join us". Below the header is a navigation bar with "RESEARCH" and "CREATE" buttons. The main content area is titled "Exhibits" and includes a welcome message: "Welcome! You are exploring a special, pre-released version of the NINES Exhibit Builder. In an effort to further refine Collex, we invite you to send all comments, questions and feedback to technologies@nines.org." Below this is a table of exhibits:

Pre-Raphaelite Caricature	Annotated Bibliography	Bethany Nowwiskie
Lorem Ipsum Dolor Sit Amet	Illustrated Essay	Bethany Nowwiskie
Poetess Poetry	Illustrated Essay	Laura Mandell
Lucrezia Borgia and Renaissance Historiography	Annotated Bibliography	Dana Wheelles
T.J. Wise's Rossetti Library	Annotated Bibliography	Andrew Stauffer
Rossetti's Exhumation Proofs	Illustrated Essay	Andrew Stauffer

In the top right corner of the exhibit list, there are two buttons: "All Exhibits" and "New Exhibit".

Nowviskie (as designer and project lead) worked with programmer Erik Hatcher and technical manager Duane Gran to envision the *minimal* contribution requirements that would need to be implemented by participating archives in order to allow full-text search, free annotation by end-users, and the grabbing of items from them to place in an exhibit. The tool was built in Ruby on Rails with an underlying SOLR database, encompassing a Lucene index of RDF files. Now all digital archives had to do in order to participate in NINES, after peer-review had permitted them to do so – peer review that appreciated them as living archives rather than commodifiable objects – was to submit the sparsest of metadata formatted as RDF.



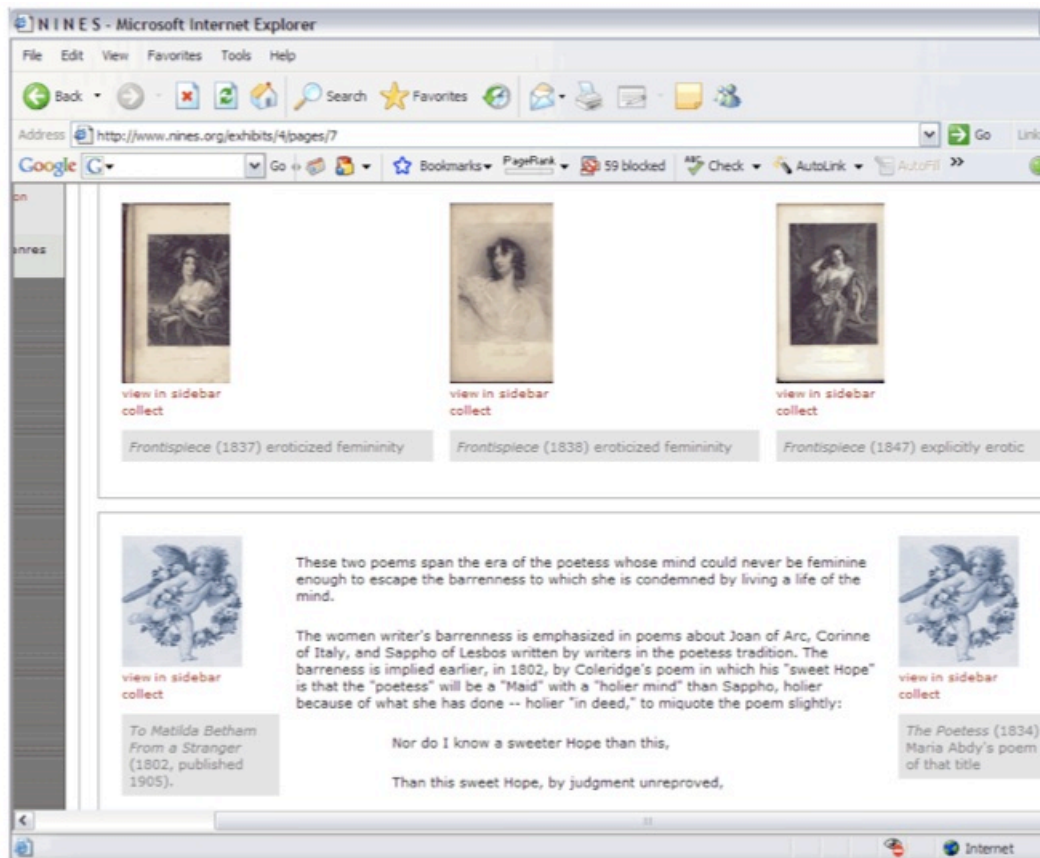
```
1 <?xml version="1.0" encoding="utf-8"?>
2
3 <rdf:RDF xmlns:oi="http://www.openarchives.org/OAI/2.0/"
4   xmlns:dc="http://purl.org/dc/elements/1.1/"
5   xmlns:nines="http://www.nines.org/schema#"
6   xmlns:role="http://www.loc.gov/loc/terms/relators#"
7   xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
8   xmlns:dcterms="http://purl.org/dc/terms/"
9   xmlns:moa="http://quod.lib.umich.edu/m/moagrp#"
10  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
11
12 <moa:moa xmlns:ns0="http://quod.lib.umich.edu/m/moa#" ns0:about="http://name.umdl.umich.edu/0481139.0001.001">
13
14 <nines:archive>Making of America</nines:archive>
15
16 <dc:title>A history of New York from the beginning of the world to the end of the Dutch dynasty [by] Diedrich
17   Knickerbocker [pseud]</dc:title>
18
19 <role:AUT>Irving, Washington, 1783-1859</role:AUT>
20
21 <role:PBL>G P Putnam's sons</role:PBL>
22
23
24
25 <nines:genre>History</nines:genre>
26
27 <nines:freeculture>true</nines:freeculture>
28
29 <dc:date>1880</dc:date>
30
31
32
33 <nines:thumbnail rdf:resource="http://quod.lib.umich.edu/m/moa/graphics/moa-sm-logo.gif"/>
34
35 <rdfs:seeAlso rdf:resource="http://name.umdl.umich.edu/0481139.0001.001"/>
36
37
38 </moa:moa>
39
40 </rdf:RDF>
```

Any properly encoded archive, whether built in TEI or XHTML with detailed and regularized descriptive materials, could use XSL to generate this RDF: minimal effort would be required.

The consequences of these technical decisions were great. The NINES infrastructure, through the use of metadata standards rather than a single markup language, was completely transformed into a federated model: sites participated by being peer-reviewed as cohesive sites, once, and then submitting metadata and resubmitting revised metadata as they grew. Each site remains fundamentally embedded in its own institutional environment, employing and continuously developing markup structures and interfaces suited to its own evolving needs. Furthermore, in this system one has the granularity of digital materials required for metadata of any kind, itself always a stab at establishing a Thing once and for all. NINES does not reproduce archives in their entirety – and yet the granularity of digital objects is presided over by usage and demand, the ephemeral concerns of the living scholarly community, and that structuring scholarly eye, a work process which transforms data into knowledge, appearing in the tag cloud and exhibits.

To conclude: NINES thus arose out of the conjunction of two factors: the impossibility of using libraries or presses to actually *hold* in some server space the digital archives that had been peer-reviewed by NINES, and the need in the case of these all-encompassing, repository-spanning archives to organize and present materials through a spatial metaphor making visible scholarly labor as it occurs. NINES became an aggregator of resources rather than a publisher or possessor, a scholarly field of activity rather than a commodity, metadata stripped of the myriad bulwarks against all the

incomprehensibilities generated by cultural change and rendered a simple part that can be wielded by virtual but nonetheless human hands. NINES became three things: an organization for peer-reviewing digital scholarship, an online finding aid and collection tool for searching among those peer-reviewed sites, and an exhibit tool for creating ways of moving through those archives. It became, in other words, a set of editorial boards and Collex, the COLLection and EXhibit tool. Here you can see an exhibit created in COLLEX.



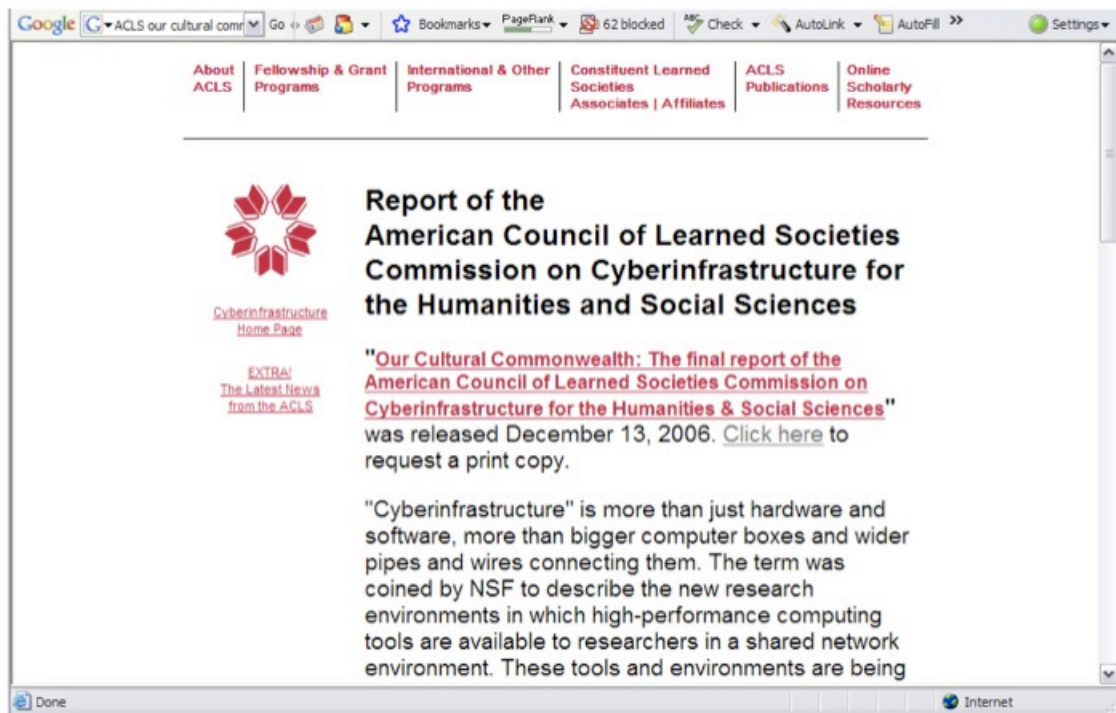
When I first described Collex exhibits – modestly enough – as the future of scholarship in the digital age, Katherine Hayles frowned slightly and said, very kindly, “an exhibit sounds just like a traditional scholarly article with pictures.” But as I am

discovering now in the process of composing an essay on the term “poetess,” the Collex medium shifts the experience of writing an article ever so slightly insofar as one cannot footnote in traditional ways and also insofar as the visual becomes the article’s primary focus: as the term implies, it is more like gathering pictures together, writing scholarly commentary about them in the form of accompanying notes, and then writing a sustained essay about the collection, the text of an exhibit catalogue that makes an argument.

While those are consequential shifts, they are still small compared to what *will* happen as the exhibits component of Collex moves out of beta development. In keeping with the notion of moving through exhibits that have been arranged by the work of scholarly hands, the exhibit tool will become, I believe, much more flashy – even in the trademark sense of the word. But far more important than an exhibit’s actual form at any given stage of tool development, any exhibit built here will exist in the NINES environment, so it will always be an article sutured to the materials with which it was made.

If a library were to take in NINES as an object for cataloguing, it might granulate all the objects, so that every digital item, every picture and poem in the Blake and other archives as well as exhibits built in NINES, would be catalogued separately. It might also download the NINES interface, its Ruby templates, SOLR database, and Lucene search engine, and it might even purchase machines or emulators specifically designed to run them no matter how our media ecology evolves. What that library would have, though, would be a snapshot of NINES, an historical artifact of a specific moment. NINES itself will evolve, so that the scholarly interface to the wealth of participating materials will always superimpose synchrony onto diachrony, obsolescence onto history, fiber-optic speed onto the slow pace of scholarly research, thinking and coding.

Recent events bode well for the future of NINES: the University of Virginia and has made a five-year commitment to its continued development, while Miami University and the University of Illinois are expanding it into the 18th century in a venture called “18thConnect.” Three programmer-developers devoted to NINES will partner with UVA Library’s Digital Scholarship unit and will work closely with a nineteenth-century scholar in the English department hired specifically as the director of NINES; the 18thConnect office, associate director and full-time programmer, are situated in Miami’s King Library. OCLC, a powerful library consortium with its RLG and WorldCat research groups, has taken an interest in NINES as a way of exploring how libraries might form (and inform) online scholarly environments.



As part of the new cyberinfrastructure called for in the humanities, NINES may be able to loosen the grip of commodity-information-architecture.

But the commodity's clutch is not to be underestimated. NINES, the Blake Archive, and Romantic Circles do not really elude its grasp, not yet at least. We all still rely upon the ontologies generated by print capitalism: text, author, literary-historical period, nation. In my view, people in the field of digital humanities need to take very seriously John Maeda's argument that the computer is not a tool but a medium, and to incorporate the deepest understanding possible of medium and interface. Because the computer is a medium, electronic resources are precisely unusable to the extent that they think of themselves as a set of commodities generously made available, once and for all, by national funding for the humanities. These are living environments, not things to be dissected by tools. Thinking about that difference is necessary for understanding how digital humanities centers and libraries need to work in unison, each vital components of the cyberinfrastructure of an open, living cultural commons.

¹ Alan Liu, "Transcendental Data: Toward a Cultural History and Aesthetics of the New Encoded Discourse," *Critical Inquiry* 31.1 (2004): 49-84.