



Journal of Digital Humanities

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Audience, Substance, and Style

Welcome to the second issue of the *Journal of Digital Humanities*. In [the introduction to our first issue](#), we explained how the journal's content came directly from the writing, coding, and projects of our field's community of practitioners, without a traditional academic publication's process of submission. We think it is also useful to share how *JDH* has been received and used—the demand side as well as the supply side, so to speak. In their open online work, scholars clearly provided a rich supply of high-quality material to choose from; we wondered if the community would in turn provide a large audience for the publication itself.

We were gratified to discover that significant demand indeed existed. Over 10,000 people have read at least one article from the inaugural issue of *JDH* thus far, and overall more than 45,000 articles have been read since it was released three months ago. Given our experimental new model of compilation, we appreciate how so many of our

colleagues in digital humanities have taken to *JDH*, and hope to build upon this energy and commitment in the coming years. In particular, we are dedicated to the further sharing of editorial decisions. Recently this has begun with the addition of [weekly community editors](#) of our feeder publication, [Digital Humanities Now](#). Many of these peer-nominated selections will appear in the next issue of *JDH*.

With this second issue, the *Journal of Digital Humanities* continues to explore and challenge the composition of the academic journal and our field itself. We will of course keep highlighting groundbreaking work in areas long prominent in digital humanities, such as the text mining of literary corpora. But because *DHNow* pays close attention to the daily work of an expanding circle of scholars, we are able to find and more quickly highlight nascent work that broadens the definition of digital humanities and shows its application in novel ways. This issue, for instance, contains an investigation of the impact of digital humanities on art history and a special section on gaming and historiography. In addition, we have been able to take advantage of our rapid production cycle to review museum exhibits while it is still possible for readers to visit them.

We also remain committed to being honest about the disadvantages of our experimental model as well as its advantages. In [a six month review](#) of *Digital Humanities Now*, for instance, we lamented a gender skew in blogging, noting that there was only one post by a woman for every two by a man. Although digital humanities is better than in some other fields with a large number of bloggers, such as economics, this ratio remains a problematic aspect for any publishing model that relies on open online writing. Such hurdles will have to be overcome, and we welcome suggestions from our scholarly community.

We have also struggled with the necessity of spending significant effort enforcing a “house style,” or the preferences for spelling, grammar,

citation, and other formatting details that nearly all journals have. Should we make contributors from UK lose their humour, or Americans their color? Complicating this decision is the fact that [the PressForward project](#), the home of *JDH*, is trying to reduce the production costs associated with journals, in addition to streamlining acquisition of high-quality content through the open web. When it is expensive—in direct costs, in-kind labor, or both—to run a journal, scholarly communities are inclined either to drop the endeavor or gate their scholarship in exchange for payment.

Some may say that's a fair trade, but we disagree. We believe that good scholarship can thrive in a journal even with stylistic variation—and yes, even the occasional spelling error, although we do try to rid the journal of those. Audiences on the global network are now used to encountering such variety, and scholars are trained to assess value separate from style. Moreover, leaving in such variation retains authorial voice, something that can be leached out of writing in the process of conforming with a house style. For this second issue, we have once again put together formal and less formal articles, and pieces that show the range of approaches to research and analysis in digital humanities. We hope you'll agree that what matters most is the ideas themselves.

Daniel J. Cohen and Joan Fragaszy Troyano, Editors

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ANDREW PRESCOTT

An Electric Current of the Imagination: What the Digital Humanities Are and What They Might Become

It is a great honour for me to become head of this academic department devoted to the study of the digital humanities. When I first saw experiments in the digital imaging of books and manuscripts in the British Library twenty years ago, it was impossible to imagine that they would develop into an intellectual activity on a scale warranting an academic department. The fact that King's College London has led the way in this process is due to the work of many pioneers, and I cannot start this lecture without acknowledging their achievements and saying what a pleasure it is to join them now as a colleague. Above all, it is essential to honour the contribution of Professor Harold Short who is without doubt the father of the Department of Digital Humanities at King's College London. Harold has been an outstanding international pioneer of the digital humanities, and I feel honoured and humbled to follow in his footsteps.

The work you see displayed here is a digital poem called *Birdsong Compliance* by the British poet John Sparrow. The words are taken from interviews with the composer John Cage and the critic Joan Retallack. This poem illustrates how some artists have become fascinated by the way digital processes can be used to transform texts

into new pieces of art. In *Birdsong Compliance*, two overlapping texts interact with each other. One text is static while the other moves around this background to create random juxtapositions suggesting new and unexpected meanings.



Birdsong Compliance by John Sparrow

Another poet very interested in processes by which texts can be transformed or, as he prefers it, deformed in order to discover new meanings is my former colleague at the University of Glasgow, Jeffrey Robinson. Jeffrey is not only an interesting poet but also a distinguished scholar of the Romantic period.

In his recent volume of poems called [*Untam'd Wing*](#), Jeffrey takes the great monuments of Romantic poetry on which he has worked for many years, and subjects them to processes of poetic transformation. He reduces Wordsworth's sonnet *Composed upon Westminster*

Bridge to five key words conveying the ecstasy of a scene witnessed by early morning light. Jeffrey splices lines and phrases from the poetry of Keats, Wordsworth and Coleridge with lines from Ezra Pound, Robert Lowell and Gertrude Stein. Jeffrey finds new poems in marginal notes by Keats. He takes lines from famous sonnets of the Romantic period and mixes them up to create new sonnets which reveal surprising interrelationships between the words, rhythm and imagery of the originals. Jeffrey riffs on phrases and words in individual poems, setting out like a jazz musician to renew a body of standard work (in the way that, say, Miles Davies might revisit George Gershwin).

The effect of Jeffrey's deformations and transformations of romantic poetry is at first disconcerting, then magical. Jeffrey's reworkings compel us to look afresh at individual words and lines. Samuel Taylor Coleridge's poem *The Eolian Harp*, originally published in 1795, has often been taken as the beginning of the Romantic movement in poetry. I have given the text of the first section of *The Eolian Harp* on your handout. Over the page, you can read one of Jeffrey's deformations of *The Eolian Harp*, which picks out words from Coleridge's poem. I have known *The Eolian Harp* since I was a teenager, but it wasn't until I read Jeffrey's version of it that I really noticed Coleridge's use in this poem of the startling word 'sequacious'. This word, rarely used in English poetry, meant in the seventeenth century 'following a leader slavishly'. By the eighteenth century, 'sequacious' came to be used with reference to objects, and mean pliability or flexibility. Applying the word to the ethereal sound of the Aeolian harp, Coleridge here gives 'sequacious' a further musical inflection.

Jeffrey Robinson's poems encourage us to focus on the evanescence of individual words like 'sequacious', which we might otherwise skip over. Jeffrey reminds us that new insights can be found in single words just

as much as in huge quantities of data. Robinson's juxtapositions of the old and the new seek, in his words, to generate 'an electric current of the imagination (as the Romantics might put it) [which] causes transformations that constitute a real thing in the world.'



[The OPTE Project](#)

This is an image from the OPTE project which was started by Barrett Lyon in 2003 and seeks to create a visual representation of the internet. This image represents the internet connections of a single computer in November 2003. The purpose of the OPTE project is to map the growth of the internet, to identify gaps in the internet's structure, and to analyse the effect on the internet of major events such as wars and natural disasters. But the images are also aesthetically pleasing, and they have been displayed at the Museum of Modern Art in New York. This image conveys something of the scale of the internet, but gives little sense of its growth over the past fifteen years. In 2000,

there were about 361 million internet users. Since then, the number of users has grown four fold, so that there are currently just over two billion internet users, about one third of the world's population. There are currently estimated to be about 12 billion indexed pages on the indexed World Wide Web (and how odd that our unit of measurement for the web continues to be the page).

In 1997, Michael Lesk calculated that the entire holdings of the Library of Congress amounted to about 20 petabytes of data, and guessed that the total information in the world amounted to a few thousand petabytes. By 2003, Lesk reported that the total of new information created every year amounted to 1.5 exabytes, which is over 1500 petabytes or 1.5 billion gigabytes. As of May 2009, the size of the world's total digital content was estimated at 500 exabytes or over a trillion gigabytes – about 160 gigabytes for every man, woman or child on earth, or about 480 gigabytes for each internet user. Most of this information has been created since 1997. It is also estimated that during the single year 2013 internet traffic will be equivalent to all the information currently in existence.

These figures are dizzying and perhaps rather terrifying. Michael Lesk also calculates that the works of a single author such as Samuel Taylor Coleridge or Wordsworth occupy about one hundred megabytes of data, not so much a drop in the ocean of information, as an atom in a universe of data. How in this context are we to hang on to the resonances and evanescence of a single word in a single poem like 'sequacious'? In this huge and inhuman world of information, poems start to look as fragile as butterfly wings.

Scientists frequently deal with vast and intimidating problems of information. When the Square Kilometre Array, a sophisticated radio telescope, is built, it will produce four petabytes of data an hour. Each day, the Square Kilometre Array will process more information than is

found in all the printed books in the world's national libraries. Although film and video can for example generate large quantities of data, humanities scholars in general do not at present confront the same problems of scale of information that astronomers have to deal with. Humanities scholars are often much more preoccupied with the complexities of the smaller scale – with the problem of a word like 'sequacious'. Nevertheless, in their approach to information, humanities scholars have tended to use approaches more appropriate to the large quantities of data dealt with by scientists. The main concerns of humanities computing have been with such issues as the modeling of data, its interoperability and sustainability, and the control and management of its growth. Yet many of the books, manuscripts, pictures, films sound recordings and artifacts with which humanities scholars are concerned resist such managerial approaches – they are messy, damaged, ambiguous in their meaning and complex in their structure. They refuse to be sequacious.



Square Kilometre Array

Among the many commercial online packages on which humanities scholars and students have become increasingly reliant is *Literature Online*, which is produced by Proquest and contains a fully searchable

library of more than 350,000 works of English and American poetry, drama and prose. Below is how *The Eolian Harp* appears in *Literature Online*, and this is nowadays likely to be the way in which many students first encounter the poem. We are presented with the text from the 1912 edition of Coleridge's Poems, and everything looks reassuringly simple and straightforward. Admittedly this isn't the most recent and authoritative edition of the poem, which was published by J. C. C. Mays in 2001, but there are problems running deeper than this. A study by Jack Stillinger has emphasized how Coleridge constantly revised and altered his poems, so that there are something like sixteen different versions of *The Eolian Harp* in manuscript and printed form, all dating from Coleridge's lifetime. These range from 51 to 64 lines in length. Sometimes Coleridge presented the poem as a single section, and at other times he divided it into three, four or five paragraphs, so that the poem's development could be more clearly followed. The various versions of the poem have different titles, reflecting Coleridge's uncertainty as to the best way to convey the poem's abstract and reflective character. Among the titles with which Coleridge experimented were 'Effusion XXXV' and 'Composed at Clevedon, Somersetshire', and he only settled on the title 'Eolian Harp' in 1817. Stillinger comments: 'There are too many differences [between these versions] to enumerate... they change the tone, the philosophical and religious ideas, and the basic structure rather drastically. The first recoverable version, 'Effusion XXXV', recounts an amusing incident of early married life, while the latest version is a much more serious affair'. Many of Coleridge's poems are characterized by this textual instability – Stillinger calculates that there were at least eighteen different versions of *The Ancient Mariner*. In this context, we might wonder how far there was ever a single settled version of a poem like *The Eolian Harp* or *The Ancient Mariner*. Jeffrey Robinson's process of 'deforming' *The Eolian Harp* can be seen as the continuation

of a process in which Coleridge himself engaged for more than twenty years.



Literature Online

Users of Mays's monumental edition of Coleridge's poetry immediately realize how important this textual instability is in understanding both Coleridge and his poetry. The wealth of evidence for the changes in particular texts led Mays to divide his edition between, on the one hand, reading texts and, on the other, a bewildering variorum edition. In the case of *The Eolian Harp* it was even necessary for Mays to include in the Variorum edition photographs of annotated copies of Coleridge's 1817 collection, *Sibylline Leaves*, illustrating Coleridge's continued reshaping and development of his poem, and I have included one of these in your handout. None of this is even hinted at in *Literature Online* or other online presentations of the poem. *Literature Online* irons out the complexities and uncertainties of *The Eolian Harp* and reduces it to a piece of information which could be transmitted by telegraph. There is an irony here in that cultural commentators frequently emphasise the (often false) perception of online information as inherently ephemeral, volatile and unstable. Yet here the online version presents a very fixed image of a

text that is, in its manuscript and printed version, very volatile and unstable. This instability reflects Coleridge's attempts to replicate the fluidity and interconnectedness of conversation, and so is important in understanding the poem. These are precisely the issues we need to confront in considering the humanities in an information world: how to represent flux and fluidity, how to explore instability and uncertainty, how to represent the complexity of the minute. Scientists want to map the universe; humanities scholars want to investigate the universe contained in a single poem. And, as Coleridge's work demonstrates, that poem may turn out to be more complex in its structure and interconnections than an entire galaxy.



"Coalbrookdale by Night" by Philipp Jakob Loutherbourg

We have been here before. This is a celebrated scene of the early industrial revolution at Coalbrookdale in Shropshire. A sense of being overwhelmed by technology, of anxiety about the way in which new technologies are transforming society, while at the same time feeling excited at the material improvements which these changes might bring is a familiar – perhaps even a necessary – condition of modernity. A standard point of historical reference in thinking about the modern information revolution is the arrival of print in the fifteenth century,

but perhaps a closer parallel is the way in which the growth of empire and the resulting changes in industry and agriculture transformed Britain in the late eighteenth and nineteenth century. David Simpson has pointed out how Wordsworth's reference to 'bright volumes of vapour' in his poem 'Poor Susan' in the *Lyrical Ballads* may refer to the over-production of cheap and worthless literature – a data deluge whose effects preoccupied Wordsworth. The prostitute Susan in Simpson's interpretation is one of an army of alienated and rootless people who pervade Wordsworth's verse: beggars whose anxious movements reflect the pointless and repetitive movements associated with the introduction of machines; vagrant farmworkers who have been disconnected from the land by enclosure; discharged soldiers who move through the landscape like ghosts. Concerns about the nature of the society emerging at that time united such disparate figures as Burke and Cobbett. Burke fretted that the state was becoming 'nothing better than a partnership agreement in trade of pepper or coffee, calico or tobacco, or some other such low concern, to be taken up for a little temporary interest, and to be dissolved at the fancy of the parties'. From a completely different stance, Cobbett expressed his horror at the way in which the cash nexus was becoming all pervasive: 'We are daily advancing to the state in which there are but two classes of men, masters and abject dependents'.

Part of our role as scholars of the digital humanities should undoubtedly be to challenge those glib historical claims frequently made about modern developments in information technology. A longer historical perspective suggests that today's developments are but another step in a long revolution in the structuring of knowledge and its representation. The invention of the codex at the beginning of the Christian era was just as remarkable as the appearance of the iPad. The creation of the biblical concordance in the twelfth century was equally revolutionary – the idea that sacred text could be broken up

according to an external and abstract pattern of alphabetization verged on the sacrilegious. Without the Western adoption of Arabic conceptions of zero at about the same time, digitization would have been still born. And of all the mechanical inventions which transformed human life, few have had greater impact than the appearance of the mechanical clock in the thirteenth century. In the nineteenth century, factories and railways transformed the very structure of time. Each age has had its information revolution, but nevertheless it seems that what happened at the end of the eighteenth century dwarfed them all. We can see this by the way in which reactions to those changes which so alarmed Wordsworth, Coleridge, Burke and Cobbett are still evident in our everyday language.

In his seminal work *Culture and Society*, Raymond Williams described how the great social and economic changes in Britain between 1760 and 1830 resulted in the development of new meanings for such key words as class, industry and artist. For example, the idea that the terms art and artist refer to the imaginative or creative arts first appears in this period, and was an attempt to affirm essential spiritual values in the face of the dehumanizing effects of the industrial and agricultural revolutions. Of these major ideological and conceptual shifts at the time of the Industrial Revolution, Williams singled out as particularly significant that term which has become a modern intellectual catch-all: *culture*. The modern concept of culture as meaning a general body of artistic achievement and activity and, eventually, a whole way of life was, again, a reaction to the appearance of modernity. Williams traces a tradition running from Burke and Cobbett through Romantic artists such as Coleridge and Wordsworth through to John Stuart Mill and Matthew Arnold, and still evident in twentieth century commentators such as Eliot and Leavis, which articulates the idea of culture as a mechanism for preserving essential human values in the face of a society increasingly dominated by trade, manufacture and the earning

of a living. Coleridge is a pivotal figure in this development, declaring to Wordsworth that there was a need for 'a general revolution in the modes of developing and disciplining the human mind by the substitution of life and intelligence for the philosophy of mechanism which, in everything that is most worthy of the human intellect, strikes *Death*'. In his *Essay on the Constitution of the Church and State* Coleridge called for the creation of an endowed class known as the Clerisy or National Church whose business would be 'general cultivation'. The Clerisy would consist of 'the learned of all denominations: the sages and professors of all the so-called liberal arts and sciences'. Coleridge had a profound influence on the early development of King's College London and may in many ways be seen as its presiding genius.

The idea of the humanities was at the heart of this early nineteenth century debate about resisting that mechanistic Utilitarian society which so entranced figures like Jeremy Bentham. Coleridge declared that his Clerisy would counter this mechanistic death of the spirit. The Clerisy would 'remain at the fountainhead of the humanities, in cultivating the knowledge already possessed, and in watching over the interests of physical and moral science'. The humanities are thus another of those keywords which reflect the ideological shifts associated with the rise of modern society. Just as the definition of art shifted, so the older form of the word humanities, associated with the study of the *litterae humaniores* was discarded and replaced by a focus on that knowledge which would encourage, in Coleridge's words, 'the harmonious development of those qualities and faculties that characterize our humanity.' Coleridge declared that his intention was to undo the entire philosophical and scientific superstructure associated with the measurement and geometry of the Newtonian world. In his view, this mechanistic concern with numbers and measurement threatened to destroy the life of the mind and crush the

human spirit. The humanities were a reaction against modernity, and an affirmation of the human spirit against the cash nexus.

In this context, the idea of the digital humanities is problematic. At one level, the computer is simply a sophisticated spinning jenny. Indeed, the great-grandfather of the computer, Babbage's difference engine, with its programmes developed by Ada Lovelace from the mechanisms used to control looms, was the most sophisticated and forward-looking product of the first phase of the Industrial Revolution. The present information revolution could be seen as an attack by the heirs of Babbage on the very cultural arena established as a refuge against the mechanistic impulse. If we see the digital humanities as merely extending mechanistic arithmetical procedures into the realm of cultural endeavour then they indeed mark that death of the spirit which Coleridge so much feared. Alan Liu has brilliantly described in his *Laws of Cool* how modern computing is an instrument of that managerial impulse which seeks to make knowledge work as mechanical and controlled as work on a production line. Liu reminds us how the aesthetics and language of computing, with its excitement about the latest 'cool' medium, are a refuge from the grim reality of a cubicle in an open plan office on an industrial estate. In the end, Liu sees the digital humanities as an escape from the tyranny of the cool, but there is a sense of despair in his conclusion that the only reaction to art in such a situation is to deform and deface it, in a way which anticipates some of Jeffrey Robinson's procedures in *Untam'd Wing*. The work of Liu and other commentators reminds us that the modern information revolution is not simply about machines and the capabilities of new technology. It is about how knowledge is being turned into a commodity, a data stream disconnected from those who produce it and turned to commercial advantage by monopolistic corporations. This is surely something which must be resisted, but it will not be achieved by using open source software or even by engaging

in a strategy of resistance. We need precisely what Coleridge called for in his letter to Wordsworth: 'a general revolution in the modes of developing and disciplining the human mind by the substitution of life and intelligence for the philosophy of mechanism which, in everything that is most worthy of the human intellect, strikes *Death*'. This cannot be achieved by escaping the digital; there is no escape from the digital, any more than there was from the industrial revolution. What is necessary is to reshape the digital world in Coleridge's model. The creation of such a world is the mission of the digital humanities.

It would be easy to see Samuel Taylor Coleridge as opposed to science. However, as Nicholas Roe and others have recently emphasized, Coleridge was deeply preoccupied with science. He sought to 'warm his mind with universal science' and declared 'I would be a tolerable Mathematician, I would thoroughly know Mechanics, Hydrostatics, Optics and Astronomy, Botany, Metallurgy, Fossilism, Chemistry, Geology, Anatomy, Medicine'. *The Eolian Harp* was partly prompted by Coleridge's reading of materialist scientists such as Thomas Beddoes and Erasmus Darwin, and for Nicholas Roe the poem demonstrates that 'for Coleridge at this moment there was no separation between imaginative writing and advanced science or 'natural philosophy'. Coleridge's preoccupation with science reflected his concern that physicians such as John Hunter only offered 'mechanical solutions' to the understanding of life. In 1824, Coleridge supplied notes on the 'Idea of LIFE' for Joseph Henry Green, who afterwards became the first Professor of Surgery here in King's College London. For Coleridge, then, the first step in resisting the mechanistic spirit of the industrial revolution was a profound engagement with science. Likewise, if humanities scholars wish to ensure that their understanding and engagement with human knowledge does not become another Californian commodity, it is essential to engage with the digital world, and not as consumers but as creators.

This then is the challenge for the digital humanities: to create a new type of humanities which will transform science and technology and achieve a revolution comparable to that revolution of understanding sought by Coleridge. How have the digital humanities risen to this challenge? There can be no doubt that the practice of humanities scholarship has been transformed by the increasing availability of digital tools and resources over the past ten to fifteen years. A recent study by Mark Greengrass and Stephen Brown found that 89% of a sample of 149 humanities researchers used the Web on a daily basis and 77% had been using the Web for five years or more. Likewise, in the LAIRAH study, 81% of a sample of humanities researchers identified themselves as extensive users of digital resources, and 83% agreed that digital resources had changed the way in which they did their research. However, these studies also indicate a problem for the digital humanities. Overwhelmingly, the digital resources used by humanities scholars are commercial packages produced by libraries and digital publishers such as Eighteenth Century Collections Online, Early English Books Online, Literature Online, or JSTOR. Usage of the specialist packages produced by digital humanities centres based in universities is, by contrast, very low. For many humanities scholars, the most pressing need in developing digital infrastructures is not to increase engagement with the digital humanities but rather to secure access to commercial packages which their institutions cannot afford, such as the monstrously expensive Parker Library on the Web.

great deal of effort has gone into developing subject associations for the digital humanities such as the Association of Literary and Linguistic Computing and the Alliance of Digital Humanities Organisations, but these look increasingly irrelevant and marginal to wider digital scholarship. The international Digital Humanities conferences are, as Jerome McGann has recently emphasized, preoccupied with inward-looking discussion on metadata and standards, and seek to establish what McGann calls ‘tight little disciplinary islands; tight little techie islands’. Patrick Joula has recently produced a devastating analysis of academic journals for the digital humanities, showing that they are rarely cited by other scholars and fail to attract contributions from scholars in leading universities. The digital humanities consistently punch beneath their weight.



The purpose of the *Digital Humanities Manifesto* is to arouse debate about what the Humanities can and should be doing in the 21st century, particularly concerning the digital culture wars, which are, by and large, being fought and won by corporate interests. It is also a call to assert the relevance and necessity of the Humanities in a time of downsizing and persistent rejections of their death. The Humanities, I believe, are more necessary than ever as our cultural heritage as a species migrates to digital formats. This is a watershed moment in the history of human civilization, in which our material culture is being transformed into digital formats, and the information that we create is being stored in digital formats. Digital Humanities studies the cultural and social impact of new technologies as well as takes an active role in the design, implementation, interrogation, and subversion of these technologies.

There are signs of change on the horizon. The enthusiasm for the digital recently evident at major subject conferences such as MLA and the American Historical Association has received a great deal of publicity, but perhaps this is just another example of the digital humanities being proclaimed yet again as the next big thing, as has happened many times in the past. More exciting is the work of new groups such as HASTAC, which has been very successful in attracting to the digital humanities large new communities of young scholars who are not only culturally and critically engaged but also emphatically wired. It is striking how many of these younger scholars reject the older institutional structures of the digital humanities and seek, as a recent twitter and blog discussion urges, to transform DH. The case for a new digital humanities is also proclaimed in the 'Digital Humanities Manifesto 2.0' drafted by Todd Presner, Jeff Schnapp and others, which declares that 'The first wave of digital humanities work was quantitative ... the second wave is qualitative, interpretive, experiential, emotive, generative in character'.

Despite these recent bursts of optimism, however, the record of the digital humanities remains unimpressive compared to the great success of media and culture studies. Part of the reason for this failure of the digital humanities is structural. The digital humanities has struggled to escape from what McGann describes as 'a haphazard, inefficient, and often jerry-built arrangement of intramural instruments, free-standing centers, labs, enterprises, and institutes, or special digital groups set up outside the traditional departmental structure of the university'. Such structures, McGann observes, 'are expensive to run and the vast majority of the faculty have no use for them'. The only answer is to move these various labs and centres into the main academic structure, and this is why the decision by King's to establish its long-standing Centre for Computing in the Humanities as an academic department and to merge its Centre for e-Research into

the Department is very important. A second problem is that the digital humanities has not generated an intellectual programme and, more particularly, a teaching agenda comparable to the work of (say) Thomas Tout in pioneering history programmes at the University of Manchester at the beginning of the twentieth century or Leavis and Richards in creating the study of English literature in Cambridge in the 1930s or more recently Richard Hoggart at Birmingham in developing cultural studies. Pioneers like Leavis or Hoggart did not lack ambition for their new subjects. Both Leavis and Hoggart felt that their new academic disciplines would generate major social and cultural reforms. In the digital humanities, we need to emulate the ambition of a Leavis or a Hoggart and create new teaching programmes articulating new intellectual and social aspirations. I hope that a priority for King's over the next few years will be to develop a single honours undergraduate programme in the digital humanities which will enable us clearly to set out our overall intellectual agenda.

In America, the growth of digital humanities has often been linked to English Departments, and Matthew Kirschenbaum has given a fascinating account of ['What Is Digital humanities and What's It Doing in English Departments?'](#) In Britain, digital humanities has struggled to find a similar relationship with an academic discipline. It has often developed from libraries and information services and it is frequently seen as a support service. One of the things that I am proudest of in my career is the way in which I have moved between being a curator, an academic, and a librarian. Museums, galleries, libraries, and archives are just as important to cultural health as universities. Indeed, I have found my time as a curator and librarian consistently far more intellectually exciting and challenging than being an academic. Institutions such as the British Library, the British Museum, the National Archives, the Victoria and Albert Museum, and the House of Lords Library contain communities of scholars who possess the skills

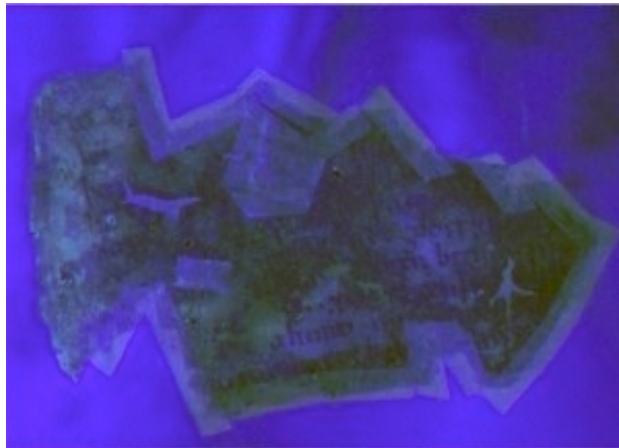
and understanding that will be essential to our society in negotiating a new digital order. I am particularly delighted tonight that my audience includes scholars from all these institutions. Digital innovation is more likely to come from libraries and information services than university departments. One of the great tragedies of university life in recent years has been the way that a distinction has grown up between ‘academic’ and ‘non-academic’ staff, so that for example research active staff in university libraries are no longer eligible for return to the REF, effectively excluding from the academy precisely those people who are most needed by it at the moment. With the collapse of American academic job structures in recent years, there has been a great deal of talk about ‘alternate academic careers for scholars’ or alt-ac as the twitter tag puts it. But I worry that this suggests that libraries or museums are a kind of second best to universities. Far from it – libraries, museums, galleries should be at the heart of the academy. An important current experiment in this area is at the National Library of Wales, where the Chair of Digital Collections of the University of Wales is based within the Library. I am delighted that the holder of this first digital humanities chair based in a cultural institution is Lorna Hughes, previously from King’s, and we look forward to working closely with Lorna.

The Digital Humanities Manifesto declares that ‘Whereas the modern university segregated scholarship from curation, demoting the latter to a secondary, supportive role, and sending curators into exile within museums, archives, and libraries, the Digital Humanities revolution promotes a fundamental reshaping of the research and teaching landscape. It recasts the scholar as curator and the curator as scholar’. I think that hits the nail on the head as to what the digital humanities could become. The process whereby the curator became disconnected from the academy is a mysterious one, and deserves more study. When Frederic Madden, the great Victorian manuscript scholar, was

prevented by family circumstances from pursuing his academic studies at Oxford, an appointment as an Assistant Librarian at the British Museum placed him at the heart of Victorian literary and historical scholarship. Likewise, Antonio Panizzi’s appointment to the British Museum in 1831 was a definite step up from his uncertain position as a Professor of Italian at University College London. It is a paradox that, in the late nineteenth century when modern scholarship was stressing the importance of rigorous documentary and textual analysis, the relationship between academic scholars and curators became fatally weakened. By the 1920s Sir Walter Greg and others were lamenting the failure of universities to undertake systematic work in descriptive bibliography. A similar story can be told of palaeography. Although Maitland declared at the beginning of the twentieth century how all history has been rewritten because of the study of manuscripts in libraries, and notwithstanding the initiative of King’s College in appointing Hubert Hall of the Public Record Office to a Chair of Palaeography in 1919, provision for teaching in palaeography has always been patchy. Palaeography has found it difficult to escape the stigma of being an ancillary discipline – something to be got out of the way before one got on with the real research. I look forward to working with our newly appointed Professor of Palaeography and Manuscript Studies, Professor Julia Crick, in trying to address these issues.

Yet, despite the semi-detached relationship of disciplines like bibliography and palaeography with the academy, they should be recognized, as Matthew Kirschenbaum has reminded us, ‘as among the most sophisticated branches of media studies we have evolved’. Digital humanities offers a means by which disciplines such as bibliography, palaeography, diplomatic and museum studies can be brought back to the heart of the academy. Moreover, at the heart of these disciplines is the perception that our understanding of knowledge is inextricably bound up with the nature of the medium by which it is transmitted to

us. The cultural threat of the digital lies in its commodification of knowledge – the way in which (as Robert Darnton has eloquently described in the case of the Google Book Settlement) knowledge is being turned into a monopoly generated and owned by private corporations. Yet this is only a risk if we see knowledge as data and forget its complex material base. The digital humanities should constantly engage with the materiality of knowledge. Kirschenbaum has forcefully reminded us how data is material, and in his grammatology of the hard drive reminds us how data is recorded on a funny whirring object which functions in a way very similar to a gramophone record. The study of such materialities of knowledge requires a much larger and more expansive engagement with science than if we simply see science as data crunching. By forming closer links with such curatorial disciplines as bibliography and palaeography, and connecting these with the theoretical insights of media and cultural studies, the digital humanities can reshape the academy and address those cultural imperatives which confront it.



British Library, Cotton MS. Otho B.X, f. 54v

This digital image is now more than twenty years old, but for me it is an emblem of what the digital humanities can be. In 1731, the great manuscript library of Sir Robert Cotton was severely damaged in a fire. The library was afterwards one of the foundation collections of the British Museum and the unconserved fragments rescued from the fire were preserved in an attic room in the Museum. Sir Humphrey Davy was consulted as to means by which the fragments could be opened up for public use, and a large number of manuscripts were restored, but Frederic Madden was nevertheless horrified to discover in 1837 that thousands of burnt fragments like this one were still preserved in the attic. Madden began a conservation programme for this material which took over twenty years. Yet badly burnt fragments like this one, from an eleventh-century collection of Old English saints' lives, remained illegible. By 1913, the American forensic scientist Elbridge Stein had demonstrated that ultra-violet light could be used to read damaged writing. In 1934, an ultra-violet cabinet, manufactured by a firm in which the Glasgow scientist Lord Kelvin was a partner, was installed in the British Museum and allowed documents such as this to be read. It was difficult however to get a stable image of the ultra-violet readings.

In the 1980s, my friend Professor Kevin Kiernan was working on these damaged Cotton manuscripts and wondered if there were other scientific methods available which could assist in this study. He was given advice on specialist imaging technologies by the Jet Propulsion Laboratory, and found the medical imaging equipment could be used to create digital images. He longed to try this new equipment on the burnt Cotton manuscripts. Finally, in 1993, I was able to assist him in getting the necessary access and the medical imaging firm Roche Kontron provided a camera and operator. The result was this image of a phrase in the burnt fragment. Nervous about transporting this image back to the United States only on a hard disc, a second copy was sent by phone modem and as far as I am aware this was the first digital

image of a medieval manuscript transmitted across the Atlantic. The initial image was flooded with the blue of the ultra-violet light and required extensive image processing by Kevin to reveal the remnants of Old English script.



Hyperspectral Imaging of the Declaration of Independence

This was an experiment which was dependent on collaboration between the scholar, curator, conservator, scientist and imaging technician. We didn't know whether the imaging equipment would work. The methods we adopted were dependent on scientific advice and guidance. We didn't know whether the resulting image would ever reach the United States. But we definitely produced important research results.

The history of the Cotton collection has been one of engagement with cutting edge science, ever since Humphrey Davy was consulted about

the conservation of the fragments. Since our 1993 experiment, digital imaging of manuscripts has become routine and images under special lighting conditions have been produced of manuscripts ranging from early papyri to the early biblical manuscript, the Codex Sinaiticus, and the eighth-century Chad Gospels. It might be objected that such very specialist imaging techniques are only relevant to very early materials. This slide, however, shows hyperspectral imaging of a detail in one of the most celebrated modern documents, Thomas Jefferson's draft of the Declaration of Independence. This imaging under a variety of light wavelengths by the Library of Congress has recently revealed how, in drafting the Declaration of Independence, Thomas Jefferson first used the words 'fellow subjects' and gradually altered them to 'fellow citizens'. A similar project at the National Library of Scotland has recovered the illegible text of David Livingstone's diaries. There are countless further research projects in this field which require close collaboration between scientist, humanities scholar, curator, and conservator. Thousands of manuscripts were damaged in the nineteenth century by the application of chemical solutions in an attempt to read faint text. The residue of these solutions means that we cannot use the fluorescent effects of ink at different light wavelengths to recover the text. To address this problem requires further research into the chemistry of the ink and manuscripts, which in turn requires closer collaboration with scientists. This is the kind of project which should be at the heart of the digital humanities. The Diamond Light Source, Britain's national synchrotron science facility, has recently been used successfully to investigate objects ranging from 18th century Spanish manuscripts to Catalan altarpieces. This engagement with 'big science' will eventually give birth to a 'big humanities' but in order to achieve this we need new forms of dialogue with our scientific colleagues. Such methods are of course familiar in archaeology and art history. The digital humanities must strive to make this creative engagement with cutting-edge science more widespread.

Again, it might be felt that this stress on the materiality of our cultural heritage ignores sound or vision, both of which have become much more readily accessible as a result of digital resources. However, a digital version of the music on a cylinder or record only tells part of the story. We cannot understand the cultural significance of an album like *Sergeant Pepper* by accessing it on iTunes. The cover of *Sergeant Pepper* was a celebrated artwork in its own right and even the inner sleeve containing the record added to the overall impact of the album. It is impossible to understand the order and structuring of the music of an album like *Sergeant Pepper* without knowing that an LP record had two sides, or that there was a lock groove at the end of each side.



Mitchell and Kenyon Collection

Likewise, our understanding of film is inextricably bound up with its material basis. I was very lucky while I was at the University of Sheffield to be a member of a group of scholars who worked on the

Mitchell and Kenyon collection, a remarkable archive of films of Edwardian life found in the basement of a shop in Blackburn. The restoration of these fragile nitrate films by the British Film Institute was itself a remarkable feat of scientific conservation. The sense we gain from the Mitchell and Kenyon films of proximity to everyday life was in part due to the fact that only the master negatives of the films survived. Most Edwardian films usually survive only in scratched and damaged copies which increase our sense of distance from the scenes depicted. The clarity of the Mitchell and Kenyon films change our relationship as viewers to these depictions of the past, in a fashion that raises questions about the relationship between viewer, cameraman, participant, and medium.



Data_Sea by Michael Takeo Magruder

Coleridge's *The Eolian Harp* demonstrates how an engagement with the latest scientist discussion can directly contribute to great art. Jeffrey Robinson has also shown us how scholarship can inspire poetry. Both Coleridge and Robinson remind us that, in this dialogue between humanities scholar, scientist, and curator, the creative artist also has a vital role. Digital art is increasingly breaking down many familiar disciplinary barriers and it has a key role to play in developing the next wave of the digital humanities. I was fascinated on my arrival

The work in reconstructing the lost villa at Oplontis has itself become the basis for an artwork by Michael Magruder and Hugh Denard called *Vanishing Point(s)* which was commissioned for the 2010 Digital Humanities conference and was displayed in the Great Hall here in King's.

In this and other examples I have shown you, science is used to explore the materiality of our engagement with the past and the nature of our achievements as human beings, thereby producing new art. This is surely the stuff of the 'universal science' which Coleridge sought to recreate. Such a new conjunction of scientist, curator, humanist, and artist is what the digital humanities must strive to achieve. It is the only way of ensuring that we do not lose our souls in a world of data.

Originally posted by Andrew Prescott on [January 26, 2012](#).

The Emergence of Literary Diction

Literary criticism used to be, in great part, an attempt to define the distinctive character of "literary language." The project preoccupied Russian Formalists and American New Critics, and dates back to the nineteenth century. In recent years, critics have largely abandoned the attempt to define literary language, since it is now clear that the category of literature itself is historically unstable. But if we could trace the transformation of literary language in a detailed way, this instability might become interesting: we could use the changing characteristics that have marked language as literary to illuminate the transformation of literature as a social category.

What does it mean to say that literature is not a stable category? Up to the middle of the eighteenth century, the word referred generally to writing or learning. The modern definition, restricted to imaginative writing or *belles lettres*, emerged only gradually between 1750 and 1850. This shift was not merely semantic: it tracked the emergence of new social distinctions between different kinds of status associated with literacy. The new, specifically aesthetic concept of literature supported a newly autonomous model of cultural distinction.^[1] Literary cultivation was not to be confused, on the one hand, with

ordinary literacy (correct spelling, refined diction) or, on the other hand, with specialized learning. Literature was a special kind of writing founded on elementary human feelings, or on perception itself. Literary cultivation was therefore independent from other forms of refinement — so independent that it could find distinction even in the plain language of "low and rustic life."^[2]

William Wordsworth filed this concept under the name "poetry." But the new model of literary cultivation he helped define was not restricted to poetry, or to the Romantic era. Novelists similarly idealized fiction by claiming that it captured human experience at its most elemental; the novel was more universal than other forms of writing, according to D. H. Lawrence, because it alone grasped the immediacy of "man alive."^[3]

As a history of critical concepts, this is a familiar story. But critics haven't yet realized how concretely these new definitions of literature shaped writerly practice. From the middle of the eighteenth century through the end of the nineteenth, poetry, fiction, and drama acquired a new diction that dramatized the difference between literary cultivation and mere specialized learning. This claim is too broad to rest on any single piece of evidence. But we can start by sketching a big picture.

Here, for instance, is one surprising way literary diction differentiated itself from nonfiction prose in the eighteenth and nineteenth centuries: it began to rely much more heavily on the older part of the lexicon. The graph below **[Figure 1]** is based on a collection of 4,275 (mostly book-length) documents; to make it readable, we're plotting yearly values rather than individual works. In each year, we have counted the number of words (tokens) that entered English before 1150, and divided it by the number of words that entered the language between

1150 and 1699. (We consider only [the most common ten thousand words in the collection](#), and exclude function words: determiners, prepositions, conjunctions, and pronouns.)

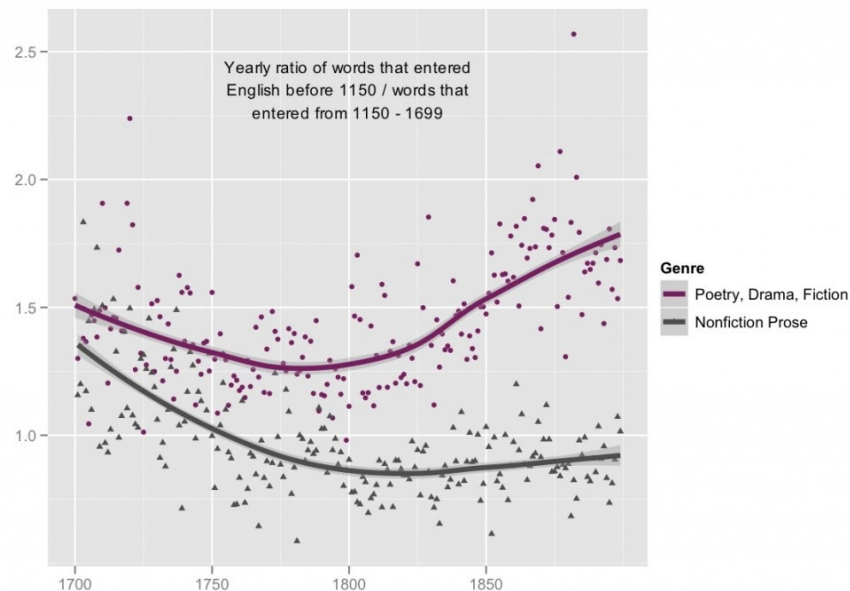


Figure 1

Why do this? and what can it tell us? In English, etymology often has social implications, because the English language was for 200 years (1066-1250) almost exclusively spoken, while French was used for writing. The learned part of the Old English lexicon didn't survive this period. Instead, when English began to be written again, literate vocabulary was borrowed from French and Latin. As a result, the boundary between words with pre- and post-12th-century origins also tends to be a social distinction between relatively informal and learned/literate language. This was true in the early modern period,

and linguists Laly Bar-Ilan and Ruth A. Berman have recently demonstrated that it remains true today.[4]

So the graph above shows that, while all genres of writing tended to adopt a more learned diction in the eighteenth century, poetry, drama, and fiction decisively reversed course in the nineteenth. As a result there was by the end of the nineteenth century a new, sharply marked distinction between literary and nonliterary diction: novels were using the older part of the lexicon at a rate almost double that of nonfiction prose.

The question we are tracing is more commonly described as a tension between "Germanic" and "Latinate" diction. Those terms are used sparingly here, because the underlying social issue has less to do with nationality than with the divergent histories of spoken and written English. Some Latin words, like "street" and "wall," entered spoken English before the Norman invasion, and it has been more than a millennium since those "Latinate" words seemed recondite to anyone. But it doesn't make much difference whether we divide the lexicon by chronology or source language: the results are in practice similar. What does make a difference is the exclusion of function words. It is important to exclude them in this context, as Bar-Ilan and Berman explain, because "register variation is essentially a matter of *choice*" between informal and formal vocabulary.[5] There is no obvious alternative to determiners and prepositions, so whatever they may tell us about authorship or style, they don't offer reliable clues about social register.

Now, one problem with the graph above is that it lumps together a number of different genres. Apparent changes in literary diction might easily be produced by changing proportions of (say) fiction and poetry

in the collection. So it becomes important to break out different genres. **[Figure 2]**

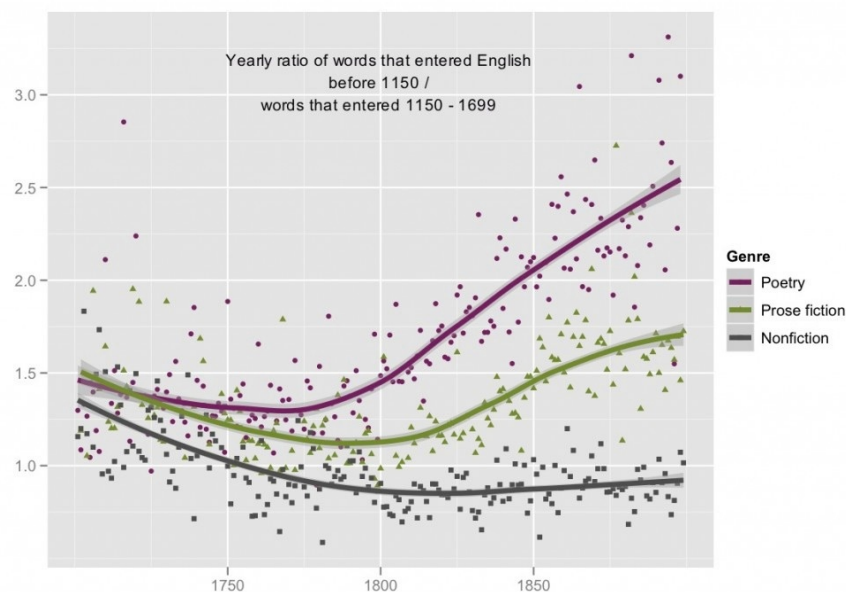


Figure 2

When we do this, the story actually becomes clearer, because poetry (the emblematically literary genre through most of the nineteenth century) diverges from nonfiction. Genres that are difficult to separate in the early eighteenth century break apart in the nineteenth, almost like rays of light passing through a prism.

This of course doesn't mean that there was no distinction between poetry and prose in the early eighteenth century; writers like Alexander Pope certainly did employ a distinctive poetic diction. But the dimension of diction we're graphing here (the contrast between older and more recent parts of the lexicon) wasn't an important

differentiating factor in the early eighteenth century. It became an important factor between 1750 and 1900.

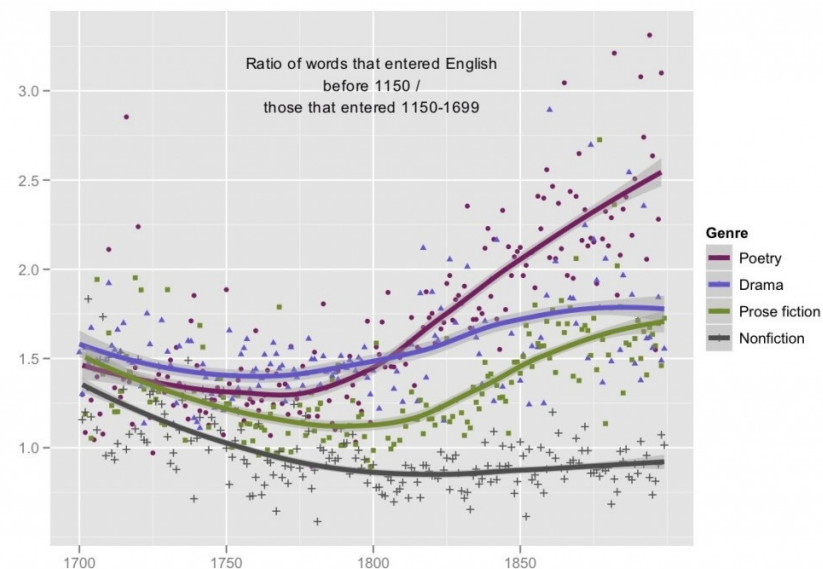


Figure 3

We haven't said anything about drama. **[Figure 3]** Loosely speaking, the diction of dramatic writing follows the same pattern as other literary genres, although the variation is less marked. This makes sense, because dramatic language, although never simply equivalent to conversation, remains loosely bound to a conversational register. The older part of the lexicon is more prominent in speech than in writing (as Bar-Ilan and Berman have shown), so it never declined in drama to the extent that it declined in prose.

[When we initially explored the divergence of genres](#) on *The Stone and the Shell*, we tried to show that the language of poetry and fiction became less like nonfiction prose, not just according to the particular

metric described above (the ratio of pre- and post-twelfth-century words), but generally and absolutely. Establishing this point seemed important at the time — mostly because it simplified the argument. But we have come to the conclusion that it is neither easy, nor all that important, to show that literary genres became less like nonfiction in a general and absolute sense.

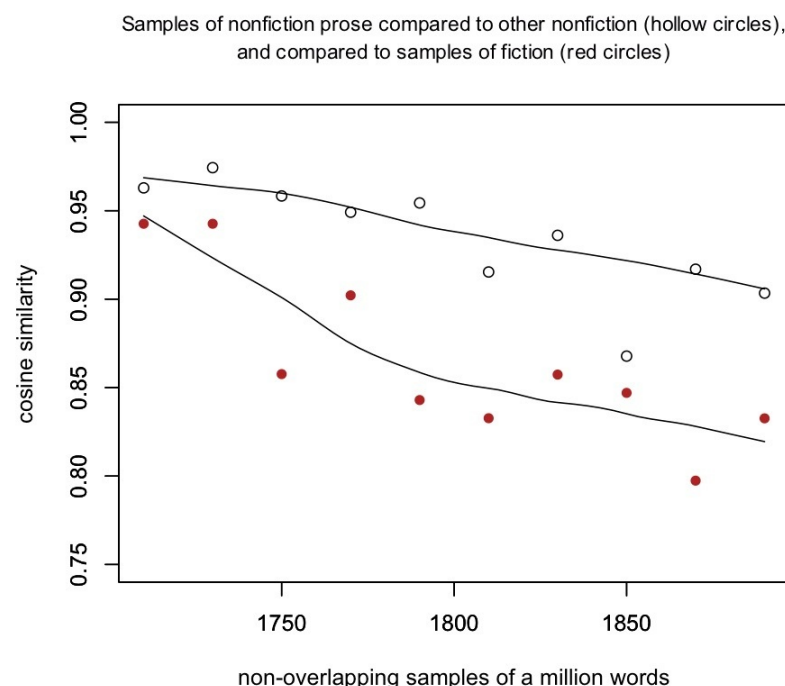


Figure 4

It isn't easy because genres are internally heterogenous. For instance, "nonfiction prose" is a category that becomes less similar to itself over the period studied. It is not difficult to show that fiction became less like nonfiction prose, but it would be fairly difficult to disentangle that change from the internal differentiation of nonfiction genres themselves.

The red circles **[Figure 4]** represent the similarity of randomly-selected million-word samples of fiction to million-word samples of nonfiction. Similarity is assessed as the cosine similarity of the most common 5,000 words in each pair of samples (my usual list of stopwords excluded).^[6] Clearly, fiction is becoming less like nonfiction. But the hollow black circles show that randomly-selected samples of nonfiction also became less similar to each other, probably because the term "nonfiction" covers a steadily broadening range of specialized subject categories. Are the red circles dropping slightly faster than the black ones? Perhaps — but this isn't exactly a robust result. It's subtle, and [not easily replicable, as Ben Schmidt has demonstrated.](#)

So claims about the absolute similarity of "literary" and "non-literary" diction are difficult to prove. But they're also a bit moot. Literature as we understand it — a category of writing self-consciously distinguished from nonfiction by fictive and imaginative aims — hardly existed in the early eighteenth century; in fact, authors did everything they could to obscure the boundary between fiction and nonfiction. It's thus beside the point to prove that the language of fiction was similar to nonfiction in 1720. It's all you can do to separate the two genres in the first place.

So the interesting task is not to prove that literature in the modern sense did differentiate from nonfiction across the period 1700-1900. We know that already. The interesting question is, What was concretely entailed in the formation of a specialized literary language?

It's not a full explanation, but it is a useful clue that literary and nonliterary genres acquired a radically different relationship to lexical history. By the end of the nineteenth century, poets had developed a specialized diction, inherited largely from the period before Middle English was a written language. Poems were using those words at

nearly three times the rate of nonfiction books — a differentiation that had not existed at all in 1700. To be sure, changes in nonfiction are responsible for part of this divergence: scientific discourse no doubt made nonfiction slightly more Latinate. But poetry changed even more than nonfiction did, and it did so in parallel with fiction and drama. (The trajectories of different genres are "parallel" not just in the sense that these changes happened at roughly the same time, but — as we explain below — in the sense that the changes tended to affect the same specific words in different genres.) Because the effect of these shifts was often to make writing more accessible, critics have not ordinarily perceived this as a process of specialization. But by revealing the magnitude of change and the strong parallel between literary genres, text mining makes clear that this shift amounted to the formation of a specialized literary language.

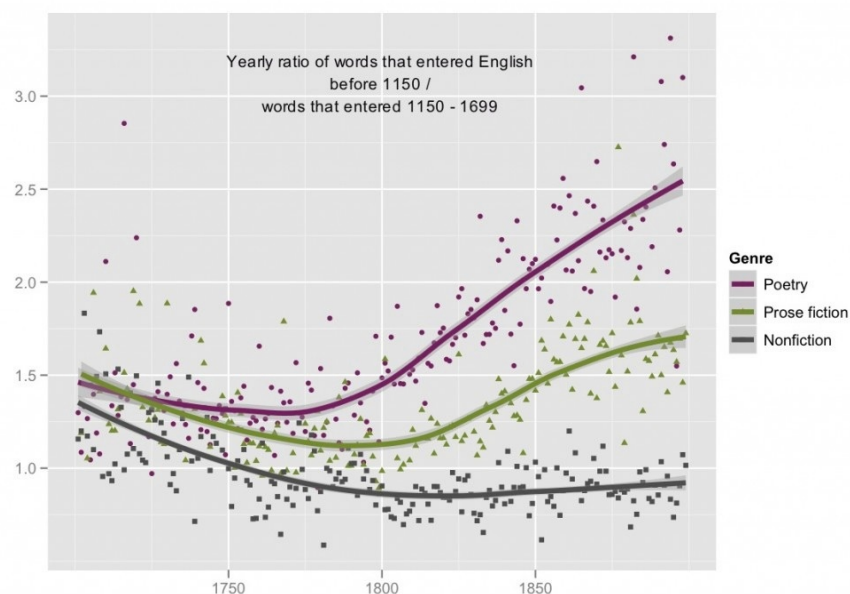


Figure 5

How should we understand the logic of this specialization? An important clue can be drawn from the way the curves bend. Prose fiction, poetry, and drama become more Latinate in parallel with nonfiction through most of the eighteenth century, reversing course slightly before or after the year 1800. The reversal coincides with a series of well-known debates about English diction. The best-known of these is no doubt the controversy stirred up by *Lyrical Ballads*, but Robin Valenza has shown that Wordsworth's questions about poetic diction were only the culmination of a longer debate about language. Eighteenth-century writers had become uneasy about specialized and learned diction. They could be persuaded to embrace it as a necessary correlate to refinement of thought: Samuel Johnson made that argument very effectively. But writers longed at the same time for a common, public language. Valenza argues that Romantic poets resolved this dilemma by offering poetry as a neatly paradoxical solution: "a practice whose specialized role was the creation of common language and universal experience."^[7] The trajectory of poetic diction in the nineteenth century tends to confirm Valenza's account of this paradox. In a sense, poetry became more specialized than it had been before: its diction became (at least in certain ways) more remote from prose. But it specialized in the *direction* of old words that would appear plain, common, and universal.

An alternate explanation for this phenomenon has recently been offered by Ryan Heuser and Long Le-Khac, writing in [the Stanford Literary Lab pamphlet series](#).^[8] Heuser and Le-Khac trace two strongly correlated changes in the diction of the nineteenth-century novel: a decline in the prominence of "abstract values" and an increase in the prominence of concrete words, including action verbs, body parts, colors, and numbers. They link these transformations both to the rise of narrative realism (showing rather than telling), and to a transformation of "social space" that "made it more and more difficult

to maintain the idea of a knowable community" organized by a single set of values.[9]

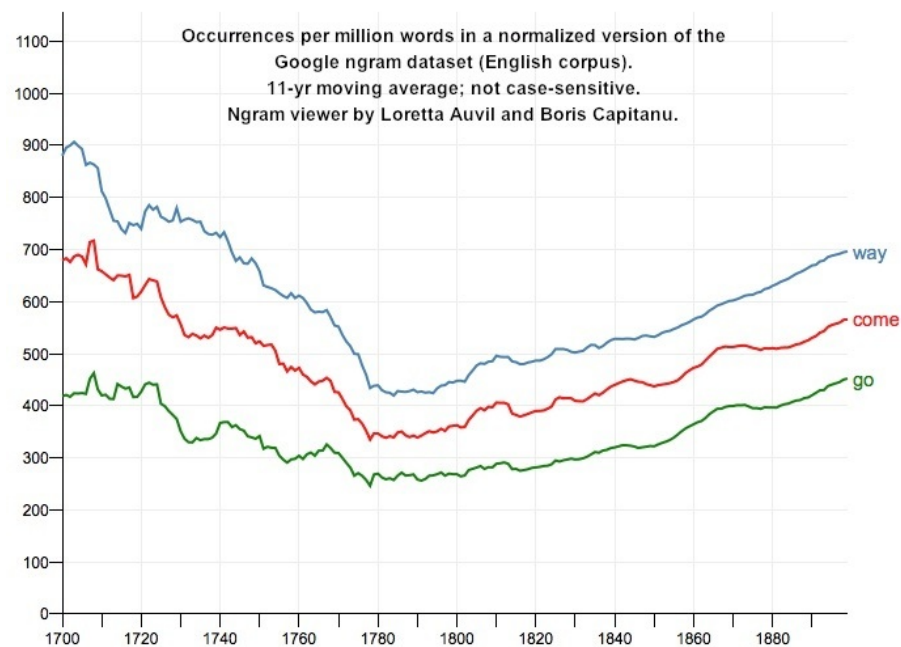


Figure 6

This is work of groundbreaking importance, both for the nineteenth-century novel, and for the development of quantitative methodology in literary studies. However, precisely because this is such an important result, critics need to have a vigorous debate about its significance. The phenomenon Heuser and Le-Khac are describing overlaps in great part with the one we are describing here. As they acknowledge, their "abstract values" are almost all French or Latinate words ("integrity, modesty, sensibility, reason"). Their concrete words or "hard seeds," by contrast, are very largely drawn from the pre-1150 part of the English lexicon ("come, go, finger, chin, red, white"). So the shift they describe in the 19th-century novel is (not identical to, but) largely

consubstantial with the second, rising half of the fiction curve in the graphs presented above. However, we are now in a position to see that this curve was rising in the nineteenth century only because it had recently reversed direction. The relative scarcity of simple action verbs in early-nineteenth-century writing, for instance, was a recent development.

In this context, the transformation of eighteenth- and nineteenth-century diction may not look like a story about a steady transition from traditional values to a modern, fragmented society. That is why we propose to interpret diction, not as direct evidence about a transformation of community, but as evidence about competing ideals of literary refinement, which reveals social history only indirectly, through the mediation of those ideals.

However, this isn't to deny the significance of the history Heuser and Le-Khac have traced. When we look at the history of the nineteenth-century novel, we don't have to decide whether we are observing the rise of realism or the rise of a new model of literary refinement. We are seeing both things at once, and Heuser and Le-Khac can help us understand how those two broad changes are related.

Moreover, they are absolutely right to emphasize that the mere correlation of word frequencies can be a powerful tool for mapping trends in literary history. As the graph of "way," "come," and "go" above suggests, the frequencies of conceptually-related words often track each other across long periods of time in an amazingly reliable way. So one way to flesh out the significance of a literary trend is just to ask what particular kinds of language tend to correlate with it.

For instance, it would be hasty to interpret changes in diction without asking which words in particular were affected. Although pre-twelfth-century words became (in the aggregate) more common in nineteenth-

century literature, the etymological dimension of this trend might only be a symptom of some other underlying issue. One way to tease out the underlying issue is to search for the individual words whose yearly frequencies correlate most closely with the yearly variation of the pre/post-1150 ratio. That could reveal thematic or social changes associated with the trend, even if they had no inherent connection to etymology.

| | |
|---|--|
| Subjectivity 13% mine, me, dreamed, memories, asleep | Domestic space 2.5% door, threshold, home |
| Emotion 3.5% love, kissed, crying | People 3% men, children, mother |
| Sound 4.5% sang, whisper, voices | Body parts 4.5% face, lips, hands |
| Language 2% sign, word, said | Life and death 3.5% life, grows, old |
| Natural phenomena 12% sea, wind, grass, stars, rain | Physical adjectives 4.5% heavy, bitter, bare |
| Natural divisions of time 6.5% sunrise, years, winter | Colors 3% white, red, golden |
| Time in general 3% until, suddenly, ago | Physical verbs and directional prepositions 21.5% come, go, across, out, break, stir, drift |
| Deliberate archaism 4% yea, wherein, saith | Miscellany 9% one, for, sake |

Figure 7

For the purpose of this brief essay, we focus on poetry, since poetry seems to present the differentiation of literary diction in its most extreme form. To give a snapshot picture of the changes in poetic diction, we have selected [the 200 words that correlate most](#)

[closely](#) with the rising pre/post-1150 ratio from 1760 to 1899. (We narrow the temporal window to the the rising half of the curve, because the decline that preceded it might have been governed by a different social logic.) This produces a list of words that is thematically very coherent, and to make the coherence visible we have organized the list into salient categories.

This list [Figure 7] overlaps in many ways with the "hard" or concrete diction traced by Heuser and Le-Khac (body parts, colors, physical verbs). But "dreamed," "love," and "word" are not exactly concrete. Admittedly, we're looking at poetry here, whereas Heuser and Le-Khac are looking at fiction. But there's a high degree of overlap between the two processes of change; if you measure words' correlation with the pre/post-1150 ratio in poetry, and also in fiction, and then compare the two lists of words, it turns out that they're sorted in much the same way. (Technically, there's a meta-correlation-coefficient of 0.54 between the two lists of correlation coefficients — which, for ten thousand data points (words), is a very significant degree of association.)

In short, this list, taken as a whole, confirms our conjecture that literary diction was specializing in elemental aspects of experience. But it also fleshes out just what counted as elemental in nineteenth-century Britain and America. Subjectivity, domestic space, the body, and physical perception lead the list — especially physical perception of large natural phenomena like sunrise and the sea.

To refresh our sense of what was being displaced by this model of literary refinement, we can simply look at [the 200 words that have the strongest inverse correlation](#) with the pre/post-1150 trend. These are words, in other words, that tended to decline as that ratio rose (although we find them not by looking for decline as such but by looking for inverse correlation with the yearly variation of the ratio).

The most striking difference is that this list **[Figure 8]** is far more social. About half of the negative correlates describe some kind of social relationship — a category of experience that was almost entirely missing in the list of positive correlates. It is particularly worth noting a strong emphasis on competition and display — "boast, ambition, grandeur, pomp, refined, taste." The strong presence of that theme in this list perhaps helps us recognize how strongly it was disavowed in later-nineteenth-century poetic diction. Nineteenth-century poetry still of course made a claim to cultural eminence, but it did so by presenting itself as a mode of experience so primitive, homely, and private that social competition became moot. Aesthetic distinction was so different from other forms of status as to constitute its own autonomous sphere.

| | |
|---|---|
| Competition and eminence 14.5% boast, power, humble, ambition honours, rival | Emotion 11.5% rage, pleasing, care |
| Other social relationship 22% aid, public, friendship, display | Mind 6% conscious, views, mind |
| Beauty and pomp 6.5% pursue, charms, adorn, train | Other abstractions 11.5% every, various, age |
| Arts and sciences 6.5% arts, science, muse | Misc 4.5% oft, by, thus |
| Virtue and vice 5.5% virtues, guilt, folly | Physical description 11.5% raise, bosom, active |

Figure 8

This is not an obviously Latinate list of words, and it is unlikely that poets who drew on words from either list were often conscious of the etymological dimension of their rhetoric. But it happens to be the case that only 34 of 200 words in the first list have a date of entry after 1149, whereas 171 of the words in the second list do. While it's certainly possible to point to writers who did use words with a conscious awareness of their origins, I suspect the etymological coloration of

these lists is on the whole accidental. It may be a by-product of the fact that English vocabulary for social organization and public distinction is largely borrowed from French and Latin (for obvious reasons associated with the Norman Conquest), whereas private, domestic, and bodily experiences are covered by an older set of words.

This is a blog post in the process of becoming an essay; it aims to offer provocation rather than conclusive proof. Much more could be said, especially because different genres changed in ways that were parallel, but not identical. But these questions are too large to be resolved by a single article anyway. What really matters is not the particular thesis advanced here (that literary diction specialized by disavowing learning and social competition), but an emergent question of fundamental significance for literary study — a question about the history of literary language and of literature itself. It appears that a number of different scholars have been converging on this question and illuminating different parts of it; in the process, we are beginning to understand how quantitative methods can make a contribution to central themes of literary scholarship. For one thing, quantitative analysis allows us to back up far enough to see how a series of existing debates (about realism, cultural distinction, and poetic diction, for instance) might fit together as interlocking pieces of a single picture.

So this is a collective enterprise, and even the small part of the project described above has been collective. The by-line of this essay acknowledges Jordan Sellers, who designed the nineteenth-century part of the collection that Ted Underwood is describing in this article. (The eighteenth-century part was mostly [contributed by ECCO-TCP](#).) But this argument has evolved in public, and we should almost give by-line credit to many other people as well. Harriett Green at the University of Illinois at Urbana-Champaign library helped us obtain many of the sources used here. Responses from [Natalie](#)

[Houston](#) and [Katherine Harris](#) convinced us to enlarge the collection, and the [Brown Women Writers Project](#) generously allowed us to borrow some of their texts. Critiques from [Ben Schmidt](#), [Scott Weingart](#), [John Theibault](#), [Ryan Cordell](#), and others at *The Stone and the Shell* — as well as [Mark Liberman and Nick Lamb at Language Log](#) — fundamentally transformed this project, and steered it away from dead ends. Conversation with Ryan Heuser and Matt Jockers shaped our thinking about the uses of correlation in literary study; Loretta Auvil and Boris Capitanu built [a correlation engine and ngram viewer](#) that we use constantly. Research on the project was supported by the Andrew W. Mellon Foundation, and we could not have undertaken it without the guidance of John Unsworth. Since the project has been so collective, it is worth underlining that the standard disclaimer does still apply: interpretive mistakes and controversial assertions in this article can be safely blamed on Underwood.

Supporting data and Code

Most of the visualizations presented in this article are based on a collection of 4,275 documents; you can download [a tabular summary of the metadata for the whole collection](#). We don't have the right to redistribute all of the documents, but the collection can be reconstructed from three sources — eighteenth-century documents from ECCO-TCP, documents in the period 1700-1850 from the Brown Women Writers Project, and [a collection of nineteenth-century books selected by Jordan Sellers, available as a .zip file \(350MB\)](#). The 19c files are based on optically scanned text, but we corrected the OCR with [a Python script that considered the probability of specific character substitutions and word sequences in a 19c context](#). Word-by-word recall is now better than 95%, and precision (which matters more for the analysis conducted here) is better than 98%. Error levels do vary across the time axis, since the eighteenth-century texts are mostly

transcribed by hand. But it is difficult to imagine how that variation would produce effects on the scale revealed here — let alone different effects in different genres.

When doing generic comparisons of poetry and prose, it is important to generate versions of the poetry files where prose introductions, notes, and lists of subscribers are stripped away, leaving only the verse. Otherwise, late-eighteenth- and early-nineteenth-century books of poetry are often in practice mostly prose. We've done this in a quick and dirty way, relying on the density of line-initial capitalization to identify verse, and other lexical cues to separate "lists of subscribers" from the verse. Obviously a capitalization-based strategy wouldn't work to identify verse by e.e. cummings, but it works acceptably in 18th- and 19th-century contexts. Ideally, dramatic texts would be cleaned in a similar way, but that might have to be a manual process, and we haven't yet undertaken it. You can convert the collection to a sparse table of word frequencies using any tokenizer, although ideally the tokenizer should be aware of historical changes in word segmentation (today / to-day / to day).

Underwood analysed the collection in R, using the RMySQL package to query word-frequency tables in an underlying MySQL database. [The R scripts are available on github](#); visualizations were produced with ggplot2.

Etymologies were extracted from dictionary.com using a web-scraper that crawled links where necessary to identify the date-of-entry of the underlying lemma. [The full list is available here](#); dates earlier than "900" mark proper nouns, abbreviations, or stopwords — all of these were excluded from the analysis.

Earlier versions of this work were posted at *The Stone and the Shell* on [February 26, 2012](#), [March 2, 2012](#), and [March 9, 2012](#). This version was substantially revised for the *Journal of Digital Humanities* to respond to comments and recently-published scholarship.

Notes:

[1] Trevor Ross, *The Making of the English Literary Canon* (Montreal: McGill-Queen's University Press, 1998). For the underlying social assumptions Ross is making, see Pierre Bourdieu, "The Field of Cultural Production, or: The Economic World Reversed," *The Field of Cultural Production: Essays on Art and Literature*, ed. Randal Johnson (New York: Columbia University Press, 1993), 29-73.

[2] [William Wordsworth, *Lyrical Ballads, with Pastoral and Other Poems*, 4th ed., vol. 1 \(London: Longman, Hurst, Rees, and Orme, 1805\), vii.](#)

[3] D. H. Lawrence, "Why the Novel Matters," *Study of Thomas Hardy and Other Essays*, ed. Bruce Steele (Cambridge: Cambridge University Press, 1985), 191-99.

[4] Laly Bar-Ilan and Ruth A. Berman, "Developing Register Differentiation: the Latinate-Germanic Divide in English," *Linguistics* 45 (2007): 1-35.

[5] Ibid., 15.

[6] There are valid reasons to choose different metrics of similarity between corpora. For a full discussion, see Adam Kilgarriff,

"Comparing Corpora," *International Journal of Corpus Linguistics* 6.1 (2001): 97-133.

[7] Robin Valenza, *Literature, Language, and the Rise of the Intellectual Disciplines in Britain, 1680-1820* (Cambridge: Cambridge University Press, 2009), 142.

[8] [Ryan Heuser and Long Le-Khac, *A Quantitative Literary History of 2,958 Nineteenth-Century British Novels: The Semantic Cohort Method*, Pamphlet 4, The Stanford Literary Lab, May 2012.](#) See also Ryan Heuser and Long Le-Khac, "Learning to Read Data: Bringing out the Humanistic in the Digital Humanities," *Victorian Studies* 54.1 (2011): 79-86.

[9] Heuser and Le-Khac, *Quantitative Literary History*, 36.

Transitioning to a Digital World: Art History, its Research Centers, and Digital Scholarship

The following is excerpted from a report written for The Samuel H. Kress Foundation and the Roy Rosenzweig Center for History and New Media, George Mason University. The full report can be found at: [the Kress Foundation Website \(PDF\)](#).

Introduction

The increasing use of digital technologies in research, publication and teaching has spurred change in many disciplines. In the field of art history, the transition from teaching with slides to teaching with digital images is often cited as the “tipping point” that moved the field into the digital world. Using digital images for research and teaching requires an understanding of digitization, online searching, and use of presentation software for displaying and manipulating digital images. These activities opened up new opportunities for the field. As art historians Hilary Ballon and Mariët Westermann note:

Digital teaching... has stimulated the development and application of tools to simulate and enhance the experience of viewing art and architecture in new ways....These tools make it possible to unfurl scrolls,

move through buildings, zoom-in on details, overlay different states of an etching, track the build-up of a painting, animate structural forces, navigate 3-D reconstruction of ruins, model an unbuilt design, and map archaeological sites....These tools are yielding new perspectives on the objects of study....[1]

A question that emerges from the new opportunities afforded by digital teaching and research is the role art history research centers play in this process. Are these centers broadening research traditions to include digitally-based research agendas? Are they serving as incubators of digital projects, tools, and scholarship? If not, where are the frontiers of digital scholarship in art history?

Another factor to be considered is the perspective of art historians. What do practitioners in the discipline feel is the way forward for both the field and for its research centers? How do they think digital engagement will affect methodologies and theoretical inquiries in the field? How will it alter classroom teaching and the training of future art historians? Who will develop the tools, services and infrastructure to support art history as its efforts and byproducts increasingly become digital?

The Art History Research Center in Context

The discipline of art history is supported by an infrastructure of universities, libraries, archives, museums, publishers, funding agencies, professional associations, and research centers. Among these entities, the art history research center plays a particularly important role. Despite differences in organizational structure, institutional affiliation, and core mission and programs, nearly all art history research centers:

- Create specialized library and manuscript collections serving art historical scholarship

- Develop specialized visual resource collections that document the objects of art historical study
- Offer fellowships that bring scholars in various stages of their careers to the center to use its resources in the pursuit of new and innovative research in the field
- Foster an international community of scholars and a scholarly communications network that draws art historians together to share research interests through conferences, symposia, and publication programs

This unique array of services creates an environment where scholars can pursue their research unencumbered by other professional obligations, yet supported by superb facilities, world class information resources, and well-respected colleagues. In providing this environment, art history research centers advance the field by supporting the research efforts of its practitioners.

Because of the unique role that art history research centers play in the life of the discipline, they seem likely sources of innovation in the emerging area of digital art history.^[2] However, preliminary inquiries suggest that this is not the case. In the spring of 2010, the Samuel H. Kress Foundation sponsored a Web-based survey of art history research centers in the United States and Europe. The survey revealed that digital projects and activities undertaken in art history research centers are impressive in their scope and execution, but are relatively uncommon. When they do occur, they tend to be the singular interest of an art historian based at the center, not the focus of a center's mission or research agenda. Instead it appears that an increasing amount of digital innovation in art history is taking place *outside* art history research centers, in university academic departments, in museums, or as independent efforts led by individual scholars.

If true, this situation parallels circumstances found throughout the humanities, where digital humanities research proliferates *outside* of traditional humanities centers. Why is digital scholarship concentrated in nontraditional centers? Is this a desirable state of affairs? What is gained by this separation? What is lost?

An Investigation

In 2011, the Samuel H. Kress Foundation, in conjunction with the Roy Rosenzweig Center for History and New Media at George Mason University, sponsored the first ever study of the art history community to clarify its perceptions on the role of digital scholarship and its future impact on the discipline. While art history's research centers are at the core of this study, their status mirrors perspectives on the role that digital art history plays in the discipline at large. Consequently the study crosses into the broader realm of art history as it moves toward more digitally-based pursuits, and explores the impact of this move on one of the discipline's most important institutions – its research centers.

The study incorporates findings derived from fifty-four interviews, eight research center site visits, and a scan of literature addressing digital art history and related topics. During the interviews and site visits, the following topics were explored:^[3]

- The role of art history research centers in supporting digital art history
- Challenges in art history teaching, research, and scholarship in the digital realm
- Access to digital tools, services, and resources needed by the discipline

- Digital pedagogy in art history
- The role of digital publishing in the discipline
- Current and potential partnerships, particularly digital humanities centers
- Sources of innovation in the field
- The role of funding agencies in supporting digital art history

Summary of Findings

The art history community is ambivalent about the value of digital research, teaching, and scholarship. Those who believe in the potential of digital art history feel it will open up new avenues of inquiry and scholarship, allow greater access to art historical information, provide broader dissemination of scholarly research, and enhance undergraduate and graduate teaching. Those who are skeptical doubt that new forms of art historical scholarship will emerge from the digital environment. They remain unconvinced that digital art history will offer new research opportunities or that it will allow them to conduct their research in new and different ways.

The community's ambivalence about digital art history also carries into its perception of art history research centers and their role in fostering digital scholarship. These research centers are highly valued, and many professionals feel they should use their respected position in the community to actively promote and support digital art history. However, no one believes these centers have the capacity or desire to transform into purely *digital* art history research centers, nor do they want them to do so. This raises a number of issues about who can provide the supportive environments needed to create and maintain

digital art history projects and what effect will this have on promoting digital scholarship within the discipline.

Many factors account for the current marginal status of digital art history. Among the most important are perceived threats to existing research paradigms and behaviors, outmoded reward structures for professional advancement and tenure, insufficient capacity and technology infrastructure, the absence of digital art history training and funding opportunities, copyright and access problems that interfere with digital publishing, and the need for multidisciplinary partnerships to develop and sustain digital art history projects. Also contributing to this marginalization is an absence of dialogue among the community's leadership – its professional organizations, funders, thought leaders, and research centers – about what art history will be in the 21st century, and the role digital art history plays in that scenario.

Moving Forward

Many individuals believe that the deleterious behaviors that negatively affect digital art history will “die a natural death” when art historians entrenched in traditional ways retire and are replaced by younger colleagues who, as one scholar noted, are more inclined to “think through technology.” Also, as tools and data resources become more abundant, quantitative research is likely to follow as part of a natural progression that occurs in disciplines when confronted with increasing amounts of data. Nevertheless, interviewees felt many steps could be taken now to encourage and promote digital scholarship among art historians and at art history research centers. These steps include the following:

Engage senior scholars in the enterprise

Junior scholars who pursue digital art history projects are widely thought to be jeopardizing their academic careers. However, the same is not true for senior scholars, whose tenured status, professorial ranking, and respect among their peers uniquely positions them to take risks without fear of career consequences. As one interviewee noted:

Older scholars –if they decide to leap into this – have the possibility of offering more because they are less under the gun in terms of tenure and promotion and publications. Older scholars like me should be out there on the limb doing the e-books, etc. We should set the model. We can take the risk.

Thus senior scholars are seen as having a critical role to play in persuading reticent art historians to lend credence to the emerging area of digital scholarship. Aligning senior scholars with a digital project, or inviting them to take part in discipline-wide efforts that support digital scholarship, imparts a unique imprimatur whose value cannot be overstated.

Conduct digital art history and traditional art history in tandem

It is important to demonstrate to those in the field that digital analysis is one type of art historical analysis that can be fruitfully combined with art history's more qualitative approaches to yield new insights and information. To drive this point home, efforts are needed that incorporate digital research and scholarship *in tandem* with traditional modes of art historical research and scholarship.

Bring new people into new roles

“Seeding” academic art history departments or research centers with skilled individuals can help jumpstart digital initiatives in these places. Postdoctoral fellowships in digital art history are one means of

accomplishing this goal, but other options might also prove fruitful. For example, using technology-savvy professionals who currently work with art historians (museum educators, librarians and archivists were specifically mentioned) to serve as intermediaries between technologists and art historians would help bridge the divide between these two communities. Another option is to bring in “instigators” or individuals from outside the research center who possess a unique set of technology, humanities, and people skills. The job of these “instigators” would be to push against institutional barriers without being intimidating to others nor easily thwarted themselves.

Convene thought leaders and coalitions

Because the discipline has never brought its thought leaders together to discuss digital teaching, research, and scholarship, no discipline-wide perspectives or consensus have coalesced around the role of these topics in art history. As one scholar noted, the profession needs to ask:

How do we integrate the good about digital technologies and apply rigorous intellectual criteria to their use? Instead of turning our back on digital, how can we co-opt it and embrace it and make it a vital part of what we do?

Coalitions of art historians, representatives of research centers and professional organizations, funders, and other relevant stakeholders are needed to start a dialogue and get these topics on the agenda. While other humanities disciplines are further along in addressing digital scholarship issues and can offer useful insights, the art history profession ultimately must come to its own consensus and devise solutions that meet its particular needs.

Identify a digital humanities training environment

There is a dearth of digital humanities training for art historians and art history students, and a strong sense that more formal training opportunities are needed in this area. However, there is little consensus on how such training should be structured. Should it be part of the art history curriculum and if so, should it be incorporated into existing courses or developed as a separate training strand? Should the discipline leverage opportunities offered by digital humanities centers, many of whom have a training infrastructure in place? A study that examines the existing digital humanities training landscape (both in and outside of art history), identifies models worthy of emulation, and considers how the discipline can leverage existing opportunities, would provide useful insights for those who wish to move forward on this issue.

Further Issues, Assessments, and Trends

The Art History Research Center and Digital Art History

The general consensus among the participants in this study is that art history research centers should take a greater role in supporting digital art history but should stop short of transforming themselves into full-fledged digital art history centers akin to the digital humanities centers that exist in other disciplines. Instead, participants think it more feasible to advance digital scholarship in the discipline through relationships and collaborations with entities such as museums, university departments, digital humanities centers or other advanced programs that have infrastructure and experience in this area. Digital humanities centers (DHCs) in particular are thought to be important potential partners, and opportunities to establish a dialogue with these centers are highly sought. Such dialogues will be critical for laying a foundation for collaboration, for the two entities harbor

misperceptions about the other in terms of roles, research methodologies, and professional cultures.

But if digital art history is to take place outside of the discipline's research centers, what is to be gained by this separation, and what might be lost? The "gain" might be that digital art history moves ahead at a more rapid pace and in a more cross-disciplinary context that enriches the effort. The few art historians in this study who are engaged in research projects in DHCs certainly suggest this is the case. They describe their work in DHCs as transformative, altering the way they view their research, presenting them with new lines of inquiry, and reconfiguring their "solitary enterprise as a scholar into a collective engagement."

But there is also a potential "loss" because a crucible of art historical scholarship – the art history research center – will have less of an influence and role in the evolution of digital art history than it does in other areas of the discipline. The effect of this on the discipline is hard to predict. However, recent events taking place between digital humanities centers and traditional humanities research centers might shed some light on the separation and its resolution over time.

Reconnecting Digital Humanities and Traditional Humanities Centers: A Pathway for Digital Art History and Art History Research Centers?

Those engaged in digital art history believe that digital humanities centers (DHCs) have made digital humanities a valid research area within the humanities, and could help digital art history gain similar credibility in the field of art history. However, those who work in the digital humanities are quick to point out that the move toward greater credibility in the "traditional" humanities is fairly recent and ongoing. It took its first formal turn with a recent initiative between centerNet

(an international network of DHCs) and the Consortium of Humanities Centers and Institutes (CHCI). Under the terms of this initiative, the two organizations will pursue joint activities that explore the relationship between digital practices and disciplinary expertise, and investigate the role of digital scholarship within and between universities and colleges, and with audiences beyond academia.[4]

Digital humanists note that traditional humanities research centers have long been places of innovation in their support of interdisciplinary research. DHCs are extensions of this, albeit with a digital focus and with specialized staff dedicated to assisting the humanities scholars in their digital enterprise. A DHC's contribution to the broader humanities tradition is to define how digital resources can generate new forms of scholarship and how scholars can build on existing digital resources to create new scholarship (much like the role concordances played in generating scholarship in the past.)

As DHCs proliferate and mature, the opportunities to work with traditional humanities centers grow increasingly apparent to both entities. Together they can explore the interfaces between technology and nontechnology areas of the humanities, and develop curricula that align humanities training with evolving practice. And they might discover they complement each other in previously unimagined ways. Traditional humanities centers, for example, might serve as a hub for digital humanities projects, offering neutral space that transcends DHCs' increasingly disciplinary boundaries.

There is a sense among many digital humanists that the "digital" modifier will fall away and the distinctions that now exist between digital and traditional humanities will start to blur. As one individual phrased it:

... at some point the notion of what counts as digital humanities should not be considered more distinct from humanities. The example with biology is good one. For a long time computational biology was thought to be very esoteric area – few people were out trying to do that. And now it is part of biology – just another area of the discipline.... We would like to move to this, all of this, (to) *humanities*.

Does greater collaboration between DHCs and traditional humanities centers portend a similar path for art history? It might help foster an environment that narrows the chasm between digital art history and traditional art history. For the moment however, those who participate in digital art history feel adrift: they are neither embedded in art history research centers nor in DHCs. Until digital art historians have a stronger foothold in some institutional structure, it is hard to know whether the greater meshing of digital scholarship and traditional scholarship that is taking place in the broader humanities world will eventually come to pass in the discipline of art history.

Pro-active Approaches to Image Access

A number of legal and social factors beset image access for art historical research and publication. Copyright, proprietary repositories, risk aversion, embargo policies, and excessively vigilant artist rights agencies and estates are some of the factors that make image access one of the most challenging, time consuming, and costly aspects of the research process. Many of these factors are governed by law and thus hard to overcome. However, others are governed by tradition, which could be changed if there were the will to do so.

One change that is deemed critical, at least in the US, is the creation of guidelines for the fair use of images in art historical research and publication. Fair use guidelines, if created by a coalition of art history organizations and legal scholars, and endorsed throughout the discipline, are seen as potentially "game changing." [5] They would give

normally reticent art historians guidance on when to invoke fair use, and would encourage them to exercise this right. They also would educate artists, estates, and their representative agencies, which are widely perceived to be overly vigilant in asserting rights in situations that are clearly fair use. Moreover, the guidelines could be useful in the legal arena, where courts often consider a community's traditions when ruling on copyright disputes.

More open access policies by repositories also would go a long way in making the online environment more conducive to art historical publication. Repositories that exert strict control over their public domain collections need to be convinced that their stridency hurts the profession and might harm their institutional reputation. One scholar suggested a more fruitful approach, framing the situation as follows:

... the Web is awash with poor quality images and metadata of works from their (research center) collections. Given this reality, centers would do better to reposition themselves as centers of excellence, and strive to make everything available online at the highest quality levels possible. Centers who do this will quickly become known as *the* place for authoritative, high quality versions of their works, and people would be drawn to them for this reason, as well as for their expertise and for access to materials that they cannot legally put online.

But if repositories are to reap the benefits of being seen as *the* providers of authoritative content, they have to reestablish themselves in this light with savvy use and placement of quality content in the online environment.

The Rijksmuseum recently undertook a modest but far-reaching experiment in an effort to reposition itself in this manner.[6] The Museum makes high quality images of its public domain works available without restrictions on its Web site, but when these images are retrieved via search engines, they and other Museum images are

“lost” amid innumerable, lesser quality images of the same works. For example, the Museum found that over 10,000 poor quality, “yellowish” versions of its Vermeer painting *The Milkmaid*[7] are available online. The prevalence of so many “yellow Milkmaid” images has led visitors to question the verisimilitude of the Museum’s own quality reproductions. To push against this tide, the Rijksmuseum placed its high quality metadata with the reproduction of the work into various online open access channels. In the Museum’s view, “opening up our data is our best defense (sic) against the ‘yellow Milkmaid’.”[8]

What is a Digital Publication?

While art historians are aware of digital publishing and its complexities, some underlying conceptual issues have yet to be considered. In particular, what constitutes publication in the digital world? Should new online forms of publication be valued equally? Are they equivalent in value to print publications?

The discipline currently views digital publication through the lens of its print precursor. However, the very notion of publication is expanding as new forms emerge online that have no print equivalent. For example, Web sites, databases, blogs, wikis, etc., are gaining inclusion within the publication rubric. While many in art history do not believe these formats to be publications in the sense they ascribe to the concept, most agree that the boundaries are being stretched. The major bibliographic citation style guides (MLA, Chicago, APA, etc.) have tacitly acknowledged this expansion as well by developing citation formats for content found in new media platforms (Web sites, blogs, Tweets, wikis). They have done so in response to scholars’ increasing need to reference these formats in their work.

Current digital publishing efforts in art history, innovative as they are, still convey a sense of “publication” that is embedded in conventional

norms. It is easier to accept digital publications when they can be understood through a traditional publication metaphor, and to devise ways to include this type of scholarship in current evaluation systems. Assessing digital resources (such as databases) or online research projects (such as the *Raphael Research Resource*[9]) is less clear-cut because they depart from this metaphor. Yet when viewed from the perspective of evaluative criteria rather than publication format, the originality, research, and intellectual effort invested in digital resources or research projects often equals or exceeds that of a published monograph. In this light, it becomes harder to justify why the latter is assigned greater scholarly value than the former.

Evaluating and Apportioning Credit in Digital Projects

Every discipline is struggling with how to evaluate digital projects and apportion credit to the individuals who work on them. Part of the difficulty is that these projects are never “finished” in a conventional sense: they undergo many iterations as they develop and evolve. A present instantiation of a project might no longer contain visible traces of earlier work. Similarly, “under the hood” efforts that are foundational to a project often are not visible and thus cannot be easily evaluated.

Complicating this scenario is an academic culture that evaluates scholarly production by assessing individual effort. Because digital projects are collaborative endeavors where it can be hard to tease out “who did what,” they have a limbo-like status in the academic community, awaiting discipline-specific guidelines for how they might be assessed in the context of dissertation review, academic promotion, tenure, or other situations that require evaluative measures.

Although participants in this study felt art history’s leadership was slow to address ways to incorporate new modes of scholarly

production, they were optimistic that the evaluative issues will be resolved over the next few years because the increased amount of scholarly production in digital form will force the issue. As they see it, the acceptance process is already occurring somewhat organically, as more digital scholarship is produced and works its way into the “package” of materials they are asked to review as part of tenure and promotion decisions. As one scholar said:

Surely someone is going ask me when I next review someone, ‘please can you look at this electronic resource as well as giving us your opinion of (their other work)?’... And I can imagine writing a reference that says, ‘look these are good articles, but this Web resource is extraordinary.’ And I would expect a university department to give credit for it.

Social Media

Social media is increasingly being used as a means of scholarly communication. Through these channels, scholars engage in discussions with colleagues about methodologies, post inquiries related to their research, and pass along relevant information to their field.[10] This trend might have a transformative effect on scholarship:

As more scholars move more of their workflows to the public Web, we are assembling a vast registry of intellectual transactions – a web of ideas and their uses whose timeliness, speed, and precision make the traditional citation network look primitive.....This new ecosystem promises to change not only the way we express scholarship, but the way we measure, assess, and consume it.[11]

Art history scholars do not appear to be part of this trend, preferring instead to use email or listservs for scholarly communication rather than blogs, wikis, or other forms of social media. What are the implications of this? A vast amount of information is now available on

social media platforms that is not available on Web sites or in databases. Additionally, these platforms offer broader opportunities to share research results because they reach far wider audiences.^[12] What are art historians missing by not being part of the scholarly information and networking that increasing passes through these channels? What opportunities are being lost by not promoting new research, programs or other scholarly efforts in the discipline via these channels?

Encouraging the discipline to use social media forums for scholarly communication will require some convincing and handholding, as both biases and fears about the use of these communication channels remain high in the discipline. Nevertheless, there are important strategic reasons for doing so. First, these communication channels cast a broader net than email and listservs, extending the discipline's reach and impact to a larger scholarly community. More importantly, use of these channels help move the research process further into the digital arena. Art historians already conduct a portion of their work in an online environment – they routinely search through databases or Web resources for information relevant to their research inquiry at some point in their research process. Conducting scholarly communication via social media channels essentially puts *another* part of their research workflow into this realm as well. In doing so, it extends the functional perception of the online world from being “a place to search” to “a place to interact.” This might well be revelatory for a discipline that, as one scholar noted, still narrowly views the digital realm as just “one big research library.”

Addressing Ambivalence

Art historians who remain ambivalent about digital art history cite an absence of convincing arguments about technology transforming

research and scholarship. While they acknowledge the value of technology in identifying and delivering resources, and personally benefit from using technology in this way, they feel these capabilities simply address the mechanics of research but do not transform the nature of it. The sentiments expressed by the following scholar are characteristic of others in the discipline:

I wouldn't say that it allows or breaks new theoretical ground...I wouldn't say that intellectually it has led to new work. ...I have become completely addicted to it (for searching), but I am crunching everything I find into fairly traditional art historical interpretative frameworks.

Those who work in digital art history need to make a more convincing case about its value for research and scholarship. Claims about the transformative nature of digital art history -- how it allows one to pose new questions or investigate inquiries in new ways -- need to be demonstrated in a concrete fashion. Projects that pull together materials into a new online resource or tool are valuable, but many participants do not believe they make the big, convincing statements that demonstrate how “digital” can advance scholarship and result in new art historical methodologies and frameworks. They advocate instead for more *interpretive* projects that allow art historians to see new lines of inquiry or address research questions in new ways.

Increasing the Visibility and Usage of Digital Art History Projects

The creators of digital art history projects are disheartened by how little interest and use their colleagues make of these projects. Despite their efforts at showcasing them far and wide (at conference and symposia presentations, in print publicity, with online introduction and training seminars, and in demonstrations to visiting colleagues

and interested parties), usage and participation is far below what is desired.

At the same time, interviewees express frustration about how difficult it is to learn about digital art history projects, and suggest an online portal to make it easier to locate them. But a portal alone might not solve the issue of connecting projects to colleagues because other issues are at play. The absence of a collaborative tradition suggests that even if digital art history projects come to their attention, art historians might not engage with them. Also, digital art history projects lack two critical factors that strongly correlate with high-use digital projects in other professions: strong institutional support, and disciplinary acceptance of digital methods in research.[13]

While the creators of digital art history projects can do little on their own to address these larger issues, there are strategies they can employ that might have a greater impact. A study of best practices in digital humanities projects suggests that developers of these projects need to identify their target user community early in the development process and cultivate them for the long-term, seeking their insights about content, interfaces and functionality.[14] The implication is that proactive efforts to grow a targeted community for a digital resource *must be concurrent* with the building of the resource. Cultivating a community in this manner might yield greater returns than the broader promotional strategies that digital art historians have undertaken to date.

Another study that examined the long-term usage of digital projects offers an interesting insight about the value of librarians in directing users to digital projects.[15] The authors note that a key role for librarians is to bring important resources to a researcher's attention. Researchers trust their librarians' judgment and will more often follow

recommended links from a library or university Web site because they know they have been vetted for scholarly value and interest. Building on this finding, digital art historians might consider the role a university or research center's librarian can play in developing a strategy for repositioning their digital art history project among other frequently-used resources.

Originally posted by the Kress Foundation in May 2012.

Notes:

[1] Hilary Ballon, and Mariët Westermann, *Art History and Its Publications in the Electronic Age* (Houston: Rice University Press, 2006), 57-58. (Also available online at <http://cnx.org/content/col10376/latest/>).

[2] The phrase “digital art history” is used throughout this report to represent art historical research, scholarship and/or teaching using new media technologies.

[3] Interviewees included art historians, professionals from affiliate communities that support art historical research (e.g., librarians, archivists, information technologists), directors of art history research centers and digital humanities centers, representatives from associations representing art history research centers, and individuals from foundations and agencies that fund art history and humanities research.

[4] “CHCI and centerNet Announce Joint Program | Scholarly Communication Institute,” June 21, 2010. <http://uvasci.org/2010/06/chci-and-centernet-announce-joint-program/>.

[5] Similar guidelines developed by other communities are said to have had a transformational effect on these communities. See “Best Practices | Center for Social Media,” 2012. <http://www.centerforsocialmedia.org/fair-use/best-practices>.

[6] Harry Verwayen, Martijn Arnoldus, and Peter B. Kaufman, “The Problem of the Yellow Milkmaid: A Business Model Perspective on Open Metadata,” Europeana White Paper No. 2, November 2011. <http://www.scribd.com/doc/73652620/Europeana-White-Paper-2>.

[7] “Johannes Vermeer,” *The Kitchen Maid*. Oil on canvas, 45.5 x 41 cm, c. 1658. Rijksmuseum Amsterdam. <http://www.rijksmuseum.nl/images/aria/sk/z/sk-a-2344.z>.

[8] Verwayen et. al. 2011, pg. 2. See also “JISC Digitisation Programme » Utopian DH Project 2: Art History Is Words Not Images.” *JISC Digitisation Programme*, January 24, 2012, <http://digitisation.jiscinvolve.org/wp/2012/01/24/utopian-dh-project-2-art-history-is-words-not-images/> for a discussion in which the Rijksmuseum strategy is considered in the broader context of metadata’s value for art online images of art works.

[9] The National Gallery, London, “Raphael Research Resource,” n.d. <http://cima.ng-london.org.uk/documentation/>.

[10] For a survey of scholarly use of social media by age and social media platform see: Anatoliy Gruz, M. Goertzen, and P. Mai, *Survey Results Highlights: Trends in Scholarly Communication and Knowledge Dissemination In the Age of Social Media*, Social Media Lab: Dalhousie University, February 1, 2012. [http://www.slideshare.net/primath/survey-results-highlights-trends-in-](http://www.slideshare.net/primath/survey-results-highlights-trends-in-scholarly-communication-and-knowledge-dissemination-in-the-age-of-social-media)

[scholarly-communication-and-knowledge-dissemination-in-the-age-of-online-social-media](http://www.slideshare.net/primath/survey-results-highlights-trends-in-scholarly-communication-and-knowledge-dissemination-in-the-age-of-online-social-media).

[11] Jason Priem, “As Scholars Undertake a Great Migration to Online Publishing, Altmetrics Stands to Provide an Academic Measurement of Twitter and Other Online Activity | Impact of Social Sciences.” *Impact of Social Science, The London School of Economics and Political Science*, November 21, 2011. <http://blogs.lse.ac.uk/impactofsocialsciences/2011/11/21/altmetrics-twitter/>.

[12] A recent experiment by humanities scholar Melissa Terras illustrates the impact of social media in the context of her own publications. Terras found that when she tweeted or blogged about certain publications, their download rate from her university’s digital repository increased eleven-fold over publications she did not tweet or blog about. See Melissa Terras, “Is Blogging and Tweeting About Research Papers Worth It? The Verdict,” *Melissa Terras’ Blog*, April 3, 2012. <http://melissaterras.blogspot.com/2012/04/is-blogging-and-tweeting-about-research.html>.

[13] C. Warwick, M. Terras, I. Galina, P. Huntington, and N. Pappa, “The Master Builders: LAIRAH Research on Good Practice in the Construction of Digital Humanities Projects,” *Digital Humanities 2007: The 19th joint international conference of the Association for Computing in the Humanities and the Association for Literary and Linguistic Computing (Urbana: University of Illinois, Urbana Champaign, 2007)*: 242–244. <http://discovery.ucl.ac.uk/4807/>.

[14] Ibid.

[15] C. Warwick, M. Terras, P. Huntington, and N. Pappa, “If You Build It Will They Come? The LAIRAH Study: Quantifying the Use of

Online Resources in the Arts and Humanities Through Statistical Analysis of User Log Data,” *Literary and Linguistic Computing* 23, no. 1 (December 14, 2007): p. 27. The open access version of this article can be found at <http://discovery.ucl.ac.uk/176758/>.

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Games and Historical Narratives

The academic study of games — from board games of strategy to online multi-player video games — challenges and disrupts epistemologies held dear in the humanities. Traditional scholarly products such as monographs and journal articles, and to a lesser degree blog posts, are meant to be passively read, whereas games are meant to be actively played. Games may present a narrative like the traditional texts studied and written by academics, but player influence on the selection of narrative choices presents unique questions about authority and interpretation.

Scholars across disciplines have investigated the dynamics of play, the technologies and cultures of games, and the relationship between games and public culture. Anthropologists and philosophers consider the play-mechanics of games, while cultural studies of technology, as seen in the work of Ian Bogost, Nick Montfort, and others interrogate video games as digital devices. Others consider the diegetic stories and interactions confined within a game, the nondiegetic world external to the video games, and the process of play and learning.^[1]

Historians have much to gain from adding games into their stable of primary sources. Games, and especially video games, are hybrid visual, material, and digital objects whereas historical scholarship most often analyzes and produces textual sources. The pieces selected for this special section of the *Journal of Digital Humanities* suggest ways that the discipline of history can begin to categorize, analyze, and create meaningful negotiations between the historical and gamic spheres of knowledge. As these authors note, the historical preference for textual modes of knowledge creation and consumption do not adequately address the realities or epistemologies of gamic spaces.

In “Privileging Form Over Content: Analyzing Historical Videogames,” Adam Chapman argues that in order to understand historical video games, scholars must go beyond analyzing only the surface-level content. Chapman compares games to historical films, in order to demonstrate how different epistemological approaches can be applied to different mediums. Historical video games, he concludes, requires analysis that privileges form over content.

In “Historical Simulations as Problem Spaces: Some Guidelines for Criticism,” Jeremiah McCall suggests that conceptualizing historical simulation games as “problem spaces” will improve the use of simulations in the understanding and teaching of history. McCall notes the similarity in structure and choice shared by narrative texts and historical simulations, but offers an approach different from the epistemological norms associated with authorial texts. He suggests that historians should consider how the design of a simulation game embeds affordances and constraints that impact the operation and understanding of the game, and of history.

My contribution, “Going Beyond the Textual in History,” extends the theme by criticizing the wholesale assertion of textual epistemologies onto the space and operation of games. Playing games allows students

to engage in active learning and prosumption (production + consumption) of historical knowledge, in contrast to traditional tools and methods employed by historians, exemplified in the lecture and monograph, that are more passive channels. Instead of “papering over” gamic space, I argue that historians should seek ways to navigate the flexible knowledge transitions from one sphere to the other.

Games can be platforms for building, and not simply consuming, knowledge. The study of games likewise can cross disciplines, but only if we first establish thoughtful, constructive frameworks and critiques. These essays are offered to encourage historians to adapt and contribute their analytical tools and methods to this broader effort.

Notes:

[1] Early works on the cultural dynamics of play include Johan Huizinga, *Homo Ludens: A Study of the Play Element in Culture* (Boston: Beacon Press, 1955) and Roger Calillois, *Man, Play and Games*, trans. Meyer Barash (Urbana: University of Illinois Press, 2001). On the operation of video games and their connections to our larger culture, see Ian Bogost, *Unit Operations* (Cambridge, MA: The MIT Press, 2006), *Persuasive Games* (Cambridge, MA: The MIT Press, 2007), and *How to Do Things With Videogames* (Minneapolis: The University of Minnesota Press, 2011); Nick Montfort and Ian Bogost, *Racing the Beam* (Cambridge, MA: The MIT Press, 2009); Steven E. Jones and George K. Thiruvathukal, *Codename Revolution* (Cambridge, MA: The MIT Press, 2012); and Jimmy Maher, *The Future Was Here* (Cambridge, MA: The MIT Press, 2012). Alexander Galloway offers a framework for analyzing the medium of games using diegetic and nondiegetic acts interpreted by an operator and/or machine in *Gaming: Essays on Algorithmic Culture* (Minneapolis: University of Minnesota Press, 2006). Tom

Apperley’s *Gaming Rhythms: Play and Counterplay from the Situated to the Global* (Amsterdam: Institute of Network Cultures, 2009) considers the impact of the local environment of the gamer, the ‘digital game ecologies’ surrounding play, on the process of play and learning. Jane McGonigal suggests that elements of game design and psychology can offer positive benefits to daily life, a perspective others have applied to pedagogy in *Reality is Broken: Why Games Make Us Better and How They Can Change The World* (New York: Penguin Press, 2011) and *Gaming Can Make A Better World* (TEDTalk by Jane McGonigal, filmed February 2010, posted March 2010. http://www.ted.com/talks/lang/en/jane_mcgonigal_gaming_can_make_a_better_world.html). See also: *PaxSims* (<http://paxsims.wordpress.com/>); *Play the Past* (<http://www.playthepast.org/>); Megan Norcia, “Puzzling Empire: Early Puzzles and Dissected Maps as Imperial Heuristics,” *Children’s Literature* 37 (2009): 1-32; Elizabeth Bonsignore et al. “Game Design for Promoting Counterfactual Thinking,” *Proceedings of the 2012 ACM Annual Conference on Human Factors in Computing* (2012): 2079-2082; Brenda Brathwaite, *How I Dumped Electricity and Learned to Love Design* (Talk at The Game Developers Conference, 2010. <http://www.gdcvault.com/play/1012259/Train-%28or-How-I-Dumped>); and Thomas Grip, *Evoking Emotion and Achieving Success by Breaking all the Rules* (Talk at The Game Developer’s Conference Europe, 2011. <http://www.gdcvault.com/play/1014889/Evoking-Emotions-and-Achieving-Success>).

Privileging Form Over Content: Analysing Historical VideoGames

It is my hope that by now few deny that contemporary game series like *Civilization* or *Assassin's Creed* constitute history.^[1] However, such a broad term does not convey the approach that analysis of these new historical texts requires. At this early stage in the serious study of historical videogames, we must be sure to adopt an approach that privileges understanding the videogame *form* (and the varying structures this entails) and its integral role in the production and reception of historical meaning, rather than solely, or even primarily, on the *content* of specific products as historical narratives. Simply focusing on the accuracy of the game often re-informs us about popular history rather than recognizing the opportunities for engaging with discourse about the past (and the nature of this discourse) that this new historical form can offer.

Proper analysis of content requires consideration of the structures that create and represent it. Content cannot be separated from its form, just as history cannot be understood separately from the modes in which it is written, coded, filmed, played, read, or viewed. While analysing the historical content of particular videogames can provide some basic information, it reveals nothing about its stylistic and epistemological

creation, and nothing of how (or even if) players experience this content. Similarly, such a focus tells us nothing about the opportunities for exploring discourse about the past through play: what actions players can perform and do perform, by choice or necessity, when they play.

This last concern is integral to understanding games because, unlike the majority of historical forms, videogames have an additional layer of meaning negotiation because they are actively configured by their audiences. In essence, when we play we may well be “reading” (i.e. interpreting and negotiating historical signifiers and narrative) but we are also “doing” (i.e. playing). It is only by focusing on form that we can properly include the action. To do so requires an analytical approach that fuses Salen and Zimmerman’s three schemas of games: play, rules, and culture, while allowing the consideration of the player’s role in the negotiation and fusion of this triad.^[2] By comparison, the overt focus on content in some of the scholarly analyses of existing historical videogames is troubling.

This article calls for academic work on historical videogames to move beyond the examination of the particular historical content of each game (i.e., historical accuracy or what a game ‘says’ about a particular period it depicts) and to adopt an analytical framework that privileges analysis of form (i.e., how the particular audio-visual-ludic structures of the game operate to produce meaning and allow the player to playfully explore/configure discourse about the past). The benefit will be more than just increased knowledge of a particular historical representation, but also insights about form (a particular game-structure’s operations) that are transferable to an understanding of games with similar ludic (and audio-visual) elements.

If a cautionary tale about the problems with privileging content over form is needed, then we can turn to the example of historical film, a form that has often been rejected on the basis of the historical content of individual texts. Critiques of particular historical films were assumed to be indicative of some kind of basic structural inability of film to function as a mode of historical expression. Many scholars concluded that film could not constitute "proper history." It took a number of theorists (particularly the seminal work of Robert A. Rosenstone) to refute accusations of poor information loads and/or "discursive weakness" as unjustified and selective, but also based on unfair comparisons. Comparisons not, as it might first seem, to the elusive past itself but to the history found in books.[3] This is an, often unconscious, ontological discrepancy whereby the notion of "accuracy" or "truth" is collapsed with and thus taken to mean, "in alignment with the narratives of book-history."

Obviously the aim of the developers of historical videogames like *Civilization* or *Brothers in Arms* (in addition to creating an entertaining game), is to create history, not as it can be represented in a book but as it can be represented in a videogame. Analysis on the basis of content alone almost invariably involves comparisons with historical narratives constructed and received in book form, which is often problematically understood as the only form capable of producing "proper" history. Most often these narratives are used as the benchmark for establishing truth or accuracy and thus, the examination of content. Such comparisons are also based on a confusion between the evidence of the past and the history that is written about it. This evidence is often unavailable for reconsideration and rarely stands independent of (most often, narrative) interpretation. These written interpretations are taken to be history (or more accurately, the past) itself, rather than history as it can

be *written*, which naturally cannot be bluntly compared to history as it can be *played*.

As Rosenstone repeatedly outlines, expecting history on film to be that of the book, merely transposed to an inferior form, is intensely problematic. Instead, history on film must be considered on its own terms.[4] We are now presented with an opportunity to avoid the same mistakes made in early considerations of historical films. We can do so only by approaching historical videogames on their own terms, and by using a method that privileges transferable understandings of form over fixed analysis of individual historical content.

Games will likely never produce the same opportunities for discourse as a book, but then why should they? Analysis on the basis of content alone usually involves uncomfortable comparisons of this kind and can result in mistaken conclusions about the representational capability of the videogame as an historical form, rather than the limitations of and concerns surrounding, histories which can be interpreted as "popular" or "commercial." Each form utilizes different structures that, considered alongside one another as part of a larger transmedia meta-discourse, create much more interesting collaborative opportunities for establishing historical understanding than one or the other alone.

Examining only content also necessarily involves asking questions about what is included or left out of a particular videogame's representation. This is rarely a useful question beyond the basis of a general common sense. Historical videogames are, like all histories, mimetic cultural products. Naturally, this involves a productive and often creative, process of evidence selection and emplotment. Thus, as Carr notes, "criticizing a simulation for being reductive is nonsensical... [endnote]... That would be like disparaging a map for not being life-size." [5] Selectivity and reductionism is a natural "flaw" of history (and

all representation). This is no different in those histories that are written in books than those that are created as videogames. This point becomes even more explicit when we consider that "simulation ... is perhaps the best translation of the Greek *mimesis*." [6]

Analysis on the basis of content using a comparative method such as this often does not even produce particularly useful results. Of course sometimes we can confidently highlight obvious anachronisms and misplaced objects, but historical videogames mostly relinquish the telling of the experiences of specific historical agents, and favour instead typical historical environments, characters, scenarios, and experiences. In the majority of cases (particularly given the implied audience), how much is to be actually gained by knowing, for instance, that certain shoes were not genuinely available until the 1490s rather than the 1470s, or that a particular character, though historically typical, did not truly exist? Relatively little, compared to the "feel" of a period or location, the life, colour, *action*, and *processes* (with which the book can struggle) and which *can* be easily communicated in games. Moreover, in games we can willfully discover these things, and often as an (inter)active part of them, configure our experience.

It is only by focusing on form that we can understand how the game can produce meaning in these, arguably, new ways, that neither book nor cinema can effectively utilize, whilst still remaining engaged with a larger historical discourse. Examination of a particular history has to involve an understanding of the form through which it operates as these two aspects can never be seen to truly stand apart. History is not a "thing" that can be understood as separate from the forms in which it is produced, received, and argued.

Historical videogames must be understood on their own terms, without relinquishing our understanding of the basic tenets of historical theory

as they universally apply to history as a practice within any form (e.g. history is referential and representational). Admittedly, striking the balance between these concerns can be challenging. Accepting this challenge means considering historical videogames without completely excluding analysis of content, while still seeking to understand how the nature and the meanings produced are wholly dependent on the form of the text in both production and reception. Such an approach is more trying in the sense that content cannot be evaluated on only its own terms.

Returning to Salen and Zimmerman's schemas, historical content in games is a concern that balances somewhat unnervingly between rules, play, and culture, and therefore requires an understanding of the structures of the game through which the game is created and disseminated. It is only by apprehending the interplays between form and content that we can really gain any comprehension of the (often troubling) category we know as history, which is always anchored within the mediums in which it is created and received.

Accepting this challenge requires a new approach to historical videogames, one that involves analysing the structures that produce meaning. These are structures which create opportunities for players to negotiate meaning in the ways that we are familiar with from other more "passive" media but also allow them to actively configure their own historical experience through play. In short, this means continually returning to and refocusing on, the agency which the player wields and the challenges they confront, which allow a somewhat unique form of engagement with historical discourse. This also means understanding the aesthetics of historical description that are utilized in historical videogames, such as audio-visual design, and a reliance on semiotic structures with which we are (hopefully) somewhat familiar with from historical film and the other visual forms. However, in the

videogame, even this audio-visual aspect largely depends on the rules of the game and the opportunities for player action that these create.

A large part of the aesthetics of games such as *Assassin's Creed* are actually algorithms, that, though written logically, are still subjective aesthetics that attempt to represent historical experience through reactively producing signs to be read and responses to be *acted* upon. In short, in any historical videogame, the aesthetics of historical description also function at a ludic level, producing a form of "procedural rhetoric" that, depending on a particular game's (or genre's) structures, can influence virtually all of the other historical signifiers through which the game produces meaning.[7] An understanding of the entirety of a game requires a focus on form rather than individual content.

Having identified combinations of these audio-visual-ludic structures, we can then approach other games that operate similarly with an understanding of what opportunities for historical meaning-making they are likely to offer. This is transferable knowledge that is likely to remain, even when faced with the historical games of the near-future.

It is defining and understanding these structures and how they operate in games, including the whole raft of new aesthetics that this implies, which is the most important task facing historians or other scholars interested in historical videogames. When we look at one game's content, we understand no more than that. Furthermore, if analysis of content is necessary, then surely it is better left to those scholars that specialize in the historical period that the game tries to represent. However, as scholars that wish to study *historical videogames*, our first concern must be the form that exerts influence over virtually every aspect of production and reception. And which, in its pressured relation to the historian/developer's choices, *decides* the content.

When we look at the videogame form in this way we can, I hope, begin to create a cohesive understanding of how games represent the past and what structures create particular playful opportunities for players to explore, understand, and interact with these representations. It is also my hope that doing so would produce a shared and organically produced analytical framework for approaching game-based histories which can help us think about these games in new ways.

Developing this form-focused approach is obviously a large, interdisciplinary task and there is much work to be done. As such, I make this call in a collaborative spirit. If taken up, this could no doubt become a very complex analytical framework to construct (even just given the huge variety of structures through which the multitude of historical videogames operate). However, I believe that this complexity would be easily matched by the benefits of understanding this new mode of historical expression. I also realise that this article is probably in many regards "preaching to the converted." It is true that much work on historical videogames does display an understanding of the importance of analysing the structures at play within videogames in order to understand the medium as a historical form and therefore, games as history at all.

In a sense, this call to privilege form over content is a simple point. However, I do believe that it is one worth making explicitly if we are to further develop a cohesive and comprehensive approach to historical videogames. At this relatively early point in the medium's life we are well placed to begin to explore how and what videogames enable in terms of playfully engaging, configuring, and experiencing discourse about the past.

Originally posted by Adam Chapman on [January 19, 2012](#). Revised for the *Journal of Digital Humanities* June 2012.

Notes:

- [1] For more on this issue see Adam Chapman, "Is *Sid Meier's Civilization* History?" *Rethinking History: The Journal of Theory and Practice* (Forthcoming 2013).
- [2] Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals* (Cambridge, MA: The MIT Press, 2004), 102.
- [3] Ian Charles Jarvie, "Seeing through Movies," *Philosophy of the Social Sciences*, 8 (1978): 378.
- [4] Robert Rosenstone, *History on Film/ Film on History* (London: Pearson, 2006).
- [5] Diane Carr, "The Trouble with Civilization," in *Videogame, Player, Text*, ed. T. Krzywinska and B. Atkins (Manchester: Manchester University Press, 2007), 234 and endnote 6.
- [6] Gérard Genette, *Narrative Discourse Revisited*, trans. J.E. Lewin (New York: Cornell University Press, 1983), 15.
- [7] Ian Bogost, *Persuasive Games* (Cambridge, MA: The MIT Press, 2007).

Historical Simulations as Problem Spaces: Criticism and Classroom Use

Part I: Historical Simulations as Problem Spaces: Some Guidelines for Criticism

The concept of **problem space** is a highly useful tool for studying historical simulations, teaching history, and using the former to help in the latter. Simulation games are interpretations of the past designed as problem spaces. In this sense, a historical problem space borrows and extends upon two existing concepts. In the field of educational and cognitive research a [problem space](#) is a mental map of the options one has to try to reach a goal, the various states. There is no implication of physical space. In contrast work by some scholars of video games, most notably [Jenkins and Squire](#), discuss video games as contested spaces: here there are certainly problems, but the space itself (or rather the representation of it) becomes critical. Extending from these established concepts a historical problem space has the following features:

- Players, or in the physical world, agents, with roles and goals generally contextualized in space

- Choices and strategies the players can implement in an effort to achieve their goals
- The outcomes of choices and strategies (especially their success) are shaped by
 - The affordances of the space (which can include quantifiable resources, cultural frameworks, psychological tendencies, etc.)
 - The constraints of the space (which can include finite quantifiable resources and scarcity, cultural frameworks, psychological tendencies, etc.)

That simulation games represent problem-spaces is in some respects just a more sophisticated articulation of the basic core of game-ness. By most definitions games require players, conflict, and a quantifiable outcome. Players have affordances and constraints embodied in rules. What a historical simulation game does beyond this basic game-ness, however, is craft a virtual problem space that represents to some degree a real-world one.

The problem spaces in simulation games are subject to some particular constraints. One of the most important is the constraint of quantification. Simulation game programs, as computer games, must be reducible to 0s and 1s – this is the only language through which a CPU can receive orders. Consequently, all elements of a historical simulation game, including agents and their motives, must be expressible in mathematical terms. My favorite example of this is the happiness metric found in many city-builders.^[1] This takes a very imprecise real-world concept and transforms it into a precise number that can be increased or decreased in precise ways (often through food, housing, jobs, taxes, and amenities) that have a precise effect on the

city population (generally determining whether immigration or abandonment occur).

Happiness, productivity, popular unrest, attack and defense strength, espionage effectiveness, cultural influence—no matter how qualitative the concept in the real-world, if it's an actual mechanic in a game, it is strictly quantified. Additionally, problem spaces in simulation games, however open-ended they might appear, are closed. To function, these games must be working, closed systems, completely operational once the player joins the mix. As expansive as a game might be in its treatments, it will impose arbitrary limits on its subject. These limits begin with the roles and goals of the player, decisions that shape the entire design. Finally, and perhaps more problematically for critical scholars of video games, simulation games are, as games, teleological in their focus. The quantifiable gameplay elements and mechanics all, in a tightly designed game any way, factor directly into whether the player achieves their goals.

There has been excellent discussion on [Play the Past](#) about the appropriateness of, and methods for critiquing simulations historically. Teasing out the ramifications that they are interpretations in the form of quantifiable problem spaces can provide some important insights on this issue. It suggests considerations for rigorous and meaningful criticism that is holistic and sensitive to the medium. First of all, just like any other interpretation of the past, simulation games will select certain aspects of the past as their theme and not others. This is true of all historical interpretations—after all an interpretation that includes everything is not an interpretation at all. To be playable and appealing, a game needs to have a set of core mechanics that are tight and cohesive, modeling one overarching system well. Consider the standard genres of simulation games that have developed over time: city builders, nation management, trade, war, diplomacy, politics, etc.

Though there is always room for crossovers and new genres, the existing genres of successful simulation games point to a constraint that a compelling game—just like a focused narrative or analysis—must focus on some things and neglect other things.

Because simulation games must function as a set of working systems, however, the choice of problem space, or more specifically the choice of whose problem spaces to represent necessarily locks the game into certain portrayals of the past. Other media are not subject to the same constraints. One could easily conceive of a textual narrative/analytical work, for example, that devotes time and space to a variety of viewpoints and agencies. Still, no narrative or analysis covers all or even most viewpoints, and all are subject to authorial predilections. Most importantly when considering the difference between simulations and these media, written texts are not quantitative rule sets executed by a computer to simulate a historical problem space. Even if writers wish to analyze the past in terms of problem spaces, they are free to select a variety of roles and goals that may have at times only tangential relationships. Further, they can select affordances and constraints that do not always form a complete system, and digress on important philosophical and practical comments in ways game designers simply cannot. The game designer must think in terms of a complete, working, simplified system in ways the writer does not. Not that there is anything wrong with this: a goal of most game designers is to entertain and interest players and focused games fare better than those with tacked on elements that do not contribute to the whole.

All this may seem fairly obvious, but there is an important point of criticism here that is not always fully appreciated. When trying to understand why an element of a simulation exists in the way it does and what it suggests about attitudes towards the past—whether

why *Colonization* codes native peoples the way it does, why *Civilization* does not deal with social issues in cities, or why *East India Company* does not represent the tensions between English and Indian customs—one needs to consider holistically the problem space selected by the designers.

First off, one must consider the roles and goals of the human players set out by the design plan. Certainly in the real world there can be many agents in a problem space with different roles and goals that complement, conflict, or altogether bypass one another. Simulation games, too, can represent multiple agents with varying roles and goals. In single-player games these additional roles are handled by the program's artificial intelligence routines. In multi-player games human players take on additional roles.

Generally speaking however—and I welcome examples where this is not the case—simulation games, especially pleasurable and/or commercially successful ones must commit to a very small set of roles and goals, often one role and one goal. Even where roles and goals differ and conflict, they tend to be set up as binary opposites or at least draw from the same well of constraints and affordances. So both sides may want to hold a territory or win an election, one group may want independence while the other wants centralization, the city ruler wants profits while the citizens want material niceties, etc. This is in large part, again, because games must be closed functioning systems: each part must connect to every other part. So a game cannot represent roles and goals well that do not fit into the core choices, affordances, and constraints of the chosen problem space. Therefore the commitment to a particular articulation of a problem space will shape every other aspect of the game and any analysis of an element of the game, not least of all an agent, must consider the framework of the problem space.

Let's apply bits of this theory to a concrete example, [*Hegemony: Philip of Macedon*](#) by Longbow Games, a real time strategy game that combines elements of grand strategy, strategy, operations, and military tactics. The player assumes the role of Philip of Macedon—or more strictly speaking a divinely omniscient version of Philip—the mid-fourth century BCE king of a fragmented collection of Macedonian tribes and cities. The goals of the player are to extend Philip's hegemony, his political and military authority over the territory extending from Illyria in the west, to Thessaly, northern Greece, and the Peloponnesus in the south, to Thrace and Ionia in the east. This is essentially accomplished through a series of military actions with moments of diplomacy scattered in between. The player can levy a variety of historically appropriate units—from phalanxes to peltasts, from light cavalry and heavy cavalry to archers—by selecting a controlled urban center and drawing from that center's population to raise a unit. Each unit has a level of morale, food supply, and initiative, and each unit has different uses in battle. Heavy infantry close into hand-to-hand combat, peltasts throw javelins, yield ground, then regroup for another throw, heavy cavalry mount formidable flank and rear attacks but are overwhelmed when attacking well-formed heavy infantry at the front.

Now, consider the portrayal of slavery in the game. When one defeats an enemy unit, the survivors can be captured and enslaved. If the survivors are not captured within a short time, they will escape. Slaves can be used to work mines, perform general construction tasks, and transport food supplies. Left untended it is possible for slaves to escape. Now, this is a reasonable sketch of aspects of slavery in the ancient world, not least of all the matter-of-fact nature of a system we find repugnant today. Slaves in the game become a commodity, a valuable source of cheap labor and it is not unreasonable at all for

players to initiate battles in the hopes of gaining more slaves for mines and building projects.

Suppose, however, one wanted to criticize formally this historical representation of slaves. One might start by noting that these slaves have very little agency. Granted, they have the goal of escaping in this problem space and can do so if left unattended for too long. This goal does little more than add a constraint to the player's problem space, a reason to take care attending to slaves and spending resources on watchtowers. This is not much of a depiction of agency at all, and slaves become nothing more than affordances, resources for the player to exploit in the game. This sort of portrayal might inspire the comment and critique that even enslaved people had agency beyond escape, the ability to make choices and have a degree of ownership over their lives despite the horrible constraints of their status. This sort of portrayal might inspire the comments and critique that even enslaved people had agency over their lives despite the horrible constraints of their status, as has happened in the historiography of American slavery over the past century. First slaves were not studied, then slaves were studied as victims, whereas more recent scholarship considers slaves as agents while still recognizing their oppression.

Why does the game not portray the agency of slaves? **How Longbow defined the primary problem space, the human player's problem space, is a critical answer.** For the player Philip king of Macedon is the role with a goal of uniting Macedonia and building a Balkan empire. With this role and goal driving the articulation of the problem space, depicting slaves in the game as affordances is fully understandable. One could attempt to flesh out the slaves' feelings about their situation and abilities to act, but it is difficult to see how that would fit into the mechanics of this particular problem space, the one the designers chose.

It is important to note, however, that saying a portrayal of ancient slaves, native Americans, Hessian mercenaries, railroad barons or any other agent or aspect of the past, takes the form it does because of the problem space is not meant to be a tactic for ending discussion or defending an implementation (one could imagine such a chilling effect: "why are they portrayed this way? Because the problem space demanded it. Oh ... okay, so what's for lunch?"). It is meant to focus criticism on a game holistically and consider how the affordances and constraints of the simulation game medium and the interests and goals of a game's creators (their concerns, assumptions, hopes, attitudes, what have you) shape a game's interpretation of the past. At the risk of being too meta, but in all seriousness, one really needs to consider the problem space of the game designers when considering the elements of the simulation they designed. Once the commitment has been made to make a commercial simulation game, as opposed to any other medium, the affordances and constraints of conceptualizing history as problem spaces place great pressure on the final product.

Still, it is not the historian's job to assign blame either. At no point in the process of identifying problems of historical interpretation in a simulation game should the goal be to blame a game designer for somehow failing to get "the facts straight" (whatever that means) or for intentionally misrepresenting the past. These designers have their own goals, and they are generally different from those of the historian. More importantly, intentionally engaging in anything approaching blame locks a historical analysis onto a track of subjectivity that makes it difficult to get any real analytical and explanatory understanding of a situation. Ronald Syme, a master historian of the late Republic and Early Empire once pronounced in reference to Cicero "It is presumptuous to hold judgement over the dead at all, improper to adduce any standard other than those of a man's time, class and station."^[2] I suggest, as historians, that sentiment also applies to

understanding why a historical game takes the form it does. The goal should not be to assign blame but to understand how the past is represented in games that suggest they are about historical topics and why it is represented in the ways they are. This requires understanding the medium and its constraints and affordances, the audience and its expectations, the designers and their goals, and the ways these and other factors shape how knowledge of the past is transmitted from that past to our living rooms.

So, what kinds of questions might one ask of a simulation game as a problem space and what kinds of meaningful criticisms/evaluations can be made? A few, necessarily incomplete suggestions:

- One might meaningfully question why the particular main roles and goals for the game were selected in the same way one can meaningfully question why certain generations of historians privileged one set of topics and questions over another. Indeed meaningful answers to such questions can be given based on careful research of prevailing ideas at the time. Simulation games, for example, tend to be inclined to issues of domination whether in political, military, or economic forms – discussing why this is continues to be a lively debate.
- One absolutely should question whether the roles and goals selected for the players are historically legitimate. In other words, do they reflect what our evidence suggests were some important roles and goals in the past? There is little question that Philip wanted to dominate the Balkans. In other cases, such as *Colonization* where the goal, as stated on the [Firaxis page](#) is for colonists to “negotiate, trade and fight as they acquire great power” one might very well explore the cases in the past where this articulation of goals was and was not valid. That’s a great conversation to have, and it has great

bearing on the validity of each element in the game’s interpretation of the past.

- One can rightfully question why each and every element of the game is portrayed as it is. But these questions should not be divorced from the consideration of the problem space as a whole, especially the historical roles and goals conceptualized by the designers. A thorough critique of why slaves are mere tools in *Hegemony*, happiness is the defining metric for success in *CivCity: Rome*, Indian culture is not represented in *East India Company*, or any other element in any game, should consider the goals set out for the game and the supporting game mechanics to be compelling.

So, suppose that one accepts the roles and goals of a game as historically valid goals, *i.e.* goals that reasonably represent what good evidence suggests motivated some peoples of the past. That might well mean that a thorough challenge to the portrayal of some historical agents in the game could only be made by suggesting:

1. The agents could not reasonably be conceived to play that role in the problem space from the point of view of the player, the primary agent
2. What more legitimate roles the agent could have played in the game that would mesh with the system incorporating the player’s roles and goals in the problem space. Considerations of this sort need to be very aware of the developer’s presumed goal to create a playable, enjoyable, and commercially viable game.
3. (a variant of b) what roles and goals non-player agents in the game could have played that would have worked in a system centered on the player’s role and goals.

So challenging the portrayal of slaves in *Hegemony*, if one accepts the historical validity of the role and goals (which I do), would require suggesting how slaves could have been portrayed more complexly and validly within the defined problem space, how they could have had a greater portrayal of agency through expanded roles and goals.

This certainly can be done. To give an example, consider *Rome: Total War*'s portrayal of the political agents of the Republic and their connection to Roman imperialism. In the main campaign mode, the game begins with the premise that the player is the head of one of three Roman family factions: the Julii, Scipii (*sic*), or Brutii (*sic, not a Roman family name*). As the leader of this faction the player is in charge of one or two Italian cities, the core of its territory—the game AI operates the other factions. The player can construct buildings in each city that improve its economy, happiness, and growth rate. The player can also construct various buildings in each city that produce military units. These resources facilitate the player's diplomatic and military campaign against the other ancient powers of the Mediterranean. The senate of Rome, a computer controlled agent, also issues missions to the player. When the player successfully completes missions her family's reputation within the senate increases. Failing to complete the senate's missions, may cause the player's family to be branded as rebels and forced into civil war against the Roman senate.

From the initial cut scene in the campaign it is made clear that, ultimately, the player's goal is to take over Rome itself (i.e. take the city and defeat the senatorial faction) and rule the empire singlehandedly. This is a highly problematic and ahistorical representation of Roman families, the Roman senate, and Roman politics in the Republic. The game begins in 270 BCE, the early Republic, but Roman territory is divided into the fiefdoms of the three families. Each family is Roman in

name only since they are able to declare war and peace, form treaties, and trade as political entities independent of Rome.

Historically, Roman aristocrats as agents pursued political careers and competed against one another for prestige and power in the name of serving the Republic. Powerful institutions and attitudes regulated the competition for centuries so that no one agent could become too powerful. In the game, however, political offices have no official military and political functions, but are simply awards. The clearly established long-term goal is to overwhelm the Republic.

The critique could continue. It becomes a substantial, holistic criticism when one considers that the game designers clearly intended this to be a game about military strategy and tactics, with some elements of high level diplomacy and management: these are the hallmarks of the *Total War* series. The designers certainly could have kept the player in the role of a Roman military commander bent on campaigning and fighting, and not and not misrepresented Roman politics, politicians, the government, and the senate in this way. By starting the game in the Empire, for example, when it is more reasonable to think of a single political and military head, this portrayal could have been avoided. Or the game designers could have put the player in a vaguer role as one directing the operations of the Roman armies, an elected consul, or even the senate itself.

So one cannot as easily explain the choice of representing Roman politics this way in terms of the demands of the problem space and the historical inaccuracy becomes more striking. It becomes necessary to move outside the game design itself and consider what external factors (modern cultural assumptions and misunderstandings, design deadlines, demands of game-ness) shaped the inaccuracies.

On a final note, I'd simply like to reaffirm that simulation games are human interpretations of the past subject to certain constraints, as sources and media they should be considered holistically, and this can be done by thinking in terms of problem space.

Part II: Problem Spaces and The History Class

When it comes to the history class, there is significant educational value to studying the past in terms of historical problem spaces. This is not to say that students should come to view the past exclusively or mostly in terms of problem spaces. It is simply to suggest that problem spaces provide an excellent framework for achieving certain goals in a 21st century history education.

First, consider the extent to which the past can be meaningfully explored in terms of its problem spaces. Albeit with a healthy sense of skepticism and intellectual humility, it is not unreasonable to frame aspects of the past in terms of these features:

- A variety of players with roles: we would term them actors or agents, but the idea of the past being full of people who had choices, made decisions, played roles, and mattered is certainly well within the norm for historical sensibilities.
- Players with goals: This one is a bit trickier. Games clarify goals; life obscures them. Or to look at it another way, goals for real life agents can often be manifold, unclear, conflicting, unreasonable, and unattainable. We must always be aware of that when considering the past as a problem space. That does not mean, however, that the idea of agents with goals is a meaningless simplification. Surely one of the foundations of explaining individual human behavior, if not group behavior, is considering the intentions of actors, and this is based on the recognition that humans do seek goals.
- Players and actions in physical space: One of the points I made in [Gaming the Past](#)[3] is that teachers and students too easily and often forget that humans in the past (and present) operated in physical, spatial contexts. Even the most intellectual/emotional/spiritual of goals is embodied in a physical and spatial context. Understanding that context helps understand agents' roles, goals, choices, affordances, and constraints.
- Players with choices and strategies: Granted, philosophers can argue about whether anyone really has any choices whatsoever. Pragmatically speaking, however, historians speak in terms of choice and decisions. Furthermore, we as humans act and comprehend the world in terms of the choices we and others can make (even when we feel victimized and assign all the choice-making to those who seemingly harm us).
- Affordances and constraints: Agents in the past (and present) have opportunities and roadblocks, abundances and scarcities, talents and weaknesses, access and exclusion. These affordances and constraints shape their choices, goals, and roles.
- Spatial context: it is worth repeating. Human motives, goals, and actions are physically contextualized as are many of the affordances and constraints that influence these things. The psychological, the emotional, the spiritual, and the intellectual play critical roles, to be sure. Human goals and actions, however, cannot be severed from their environments and remain fully comprehensible.

An important qualifier. Even when one role and set of goals are the subject of analysis (say Pliny's goal to rehabilitate the financial condition of his province, Bithynia, Pankhurst's goal to gain suffrage for British women, or my goal to say something interesting and useful here for readers) each agent in a problem space will have his/her own

goals, choices, etc. To the extent that anyone interpreting the past must select which roles and goals to address, the problem space approach to history is necessarily simplified. But, and this is very important, **so are all other approaches**. Simplifying reality is a necessary part of the process of historical analysis and interpretation.

Why use the idea of problem space as a framework for studying, teaching, and learning about the past? It provides, some useful ways of thinking about the past that can be very helpful to modern students. These are just a few suggestions of possibilities:

- It promotes the agency of humans while recognizing constraints, an important life lesson. One of the goals of history education should be for students to understand how factors shape and promote certain actions and outcomes over others, how everything is hardly ever equal, and how everything is contextualized.
- It teaches to contextualize actions within space rather than divorcing choices from their real-world context. Humans in the past and present do not make decisions in vacuums. Learning to consider the context for decisions and actions before considering the decisions and actions is critical to studying human behavior.
- It fosters flexible problem solving and critical inquiry as students consider why actors made the choices they did, what else they could have chosen, and what the likely results of those other choices might have been (all of which is important counter-factual reasoning). It undermines the perennial problem of viewing the past as pre-determined. Training flexible problem solvers like this should be a goal high on the list for history teachers. These are the thinkers that can see many sides of a problem, analyze different possibilities, and, hopefully, come up with excellent solutions.

- Related to the previous point, it allows history, as it should, to speak even more to the needs of the present as a place of challenges and opportunities.

Though simulation games are superior tools for studying problem spaces, one certainly can effectively analyze a historical problem space without recourse to actual gameplay. Since I'm new to this practice myself, let me offer a test case from a recent class. I wanted to apply the framework of problem spaces to analyzing the historical evidence for Roman cities and particularly the governorship of Pliny (quick historical background: Pliny was specially appointed to be governor of Bithynia in NW Anatolia by the emperor Trajan in 110 CE. His assignment seems to have been to set affairs in order in the province, which had suffered from financial mismanagement among other things). This was for a pair of ninth grade ancient world history classes at Cincinnati Country Day School. The basic instructional procedure was to assign as homework for a couple of nights notes on a healthy set of the letters Pliny wrote to Trajan while governing the province—these letters are incredibly important for the insights they give into provincial administration in the Empire. The next day I introduced students to the concepts of problem spaces by comparing a problem space to a game (my students were veteran sim players at that point and had played *CivCity: Rome* for several weeks). I stressed that historical problem spaces could be compared to simulation games to make the concept easier to understand but that in no way should we take the baggage of entertainment or triviality often associated with games and apply them to problem spaces. Then I suggested we apply this idea of problem space to Pliny's governorship. The class was divided into groups of 3-5 students and all had access to a digital worksheet with space to make notes on the following: role, goals, geographical setting, types of choices available, affordances (I didn't call them that at first, but got there quickly), and constraints. I

indicated I would start the class off by giving some background biographical information on Pliny. Then they would take that information, what they knew about Roman cities from prior readings and what Pliny's testimony suggested to fill out the chart and Pliny's problem space (according to our normal practice, they had to cite the location of the evidence they used for each point).

After more than a decade teaching high school history, here are the features of the exercise that struck me immediately:

- *Comprehension*: even those who sometimes struggled with the challenge of making sense of primary sources and organizing a variety of historical evidence reported their sense that they understood Pliny and his world better than they normally understood many topics we explored. I submit this is because they had to visualize a real world space and fit various components and evidence together into that space. Ideally this is what should happen with historical interpretation all the time, but history teachers well know that this ideal is often not achieved. It is too easy for evidence and facts (such as they are) to get divorced from one another and appear meaningless, particularly when one lacks a deep background in a subject.
- *Engagement*: problem solving is inherently engaging. In the classroom, where problem solvers may be intimidated by concerns of failure, deterred by a lack of interest, etc. the problem solving drive kicks in most readily when the problems are clearly presented, require thought and effort to solve, but are within the reach of students with the resources they have and the scaffolding of the teacher. This exercise fit the bill. I also submit there is something inherently game-like and creative about the whole process of figuring out a problem space because one deals with potentials and

options, not fixed outcomes. In a sense, perhaps, it is like creating an avatar in a role-playing game.

- *Usefulness of detail*: This was a big one. I have shied away from providing detail for detail's sake my entire career and, though of course other teachers may not have had this problem, I had yet to find any compelling reason to recite Pliny's political career prior to 110 CE. Until this exercise. When the goal of students is to reconstruct and fill out a problem space, biographical details that might have been mentioned and lost in other forms of instruction become potentially critical points for establishing a player/agents role and goals. A problem space methodology provides a critical relevance to otherwise less meaningful details, and this kind of relevance is very useful for real learning to take place.
- *Flexibility and Creativity*: Historical imagination requires individuals not only to understand the evidence for what did happen but also to use that evidence to consider what could have happened. To be able to reconstruct a world of possibilities requires creativity and flexibility far beyond that fostered by the rote examination of what did happen and the simple acceptance of standard explanations for why it had to be that way. Again, this is the kind of powerful thinking a 21st century history education should foster: ending not with how things are but considering how they can be.

Hopefully readers will readily draw connections between the use of the problem spaces concept in the history classroom and the problem spaces defined by simulation games. Here, I want to touch very briefly on a key link between simulation game play and the study of problem spaces. Leaving aside for a moment the important cognitive work of critiquing the interpretations of simulation games, what reasonably valid simulation games offer most of all to students of the past is the ability to explore problem spaces from the strategic, if not emotional

and intellectual, perspective of a player/agent in the space. Simulation games are particularly good at modeling choice in problem spaces. When students play and critique simulation games, they can actually make choices within a problem space and see how they are resolved. It takes the exercise from the disembodied hypothetical to the virtual, multimedia, personal application – potentially a much closer analogy to the reality of the past problem than regular classroom media. Of course we must be very careful when using simulation games to help students study problem spaces. The games will tend to focus on one set of roles and goals in the problem space and it is essential to remind students that there are many roles and goals. This is the same problem we face, however, with any source, any interpretation of the past. The advantages make the exercise of exploring problem spaces through sim games worth it—but handle the games with care.

Originally posted by Jeremiah McCall on [March 21, 2012](#) and [March 27, 2012](#). Revised for the *Journal of Digital Humanities* May 2012.

Notes:

[1] On this point, see my [essay](#), “The Happiness Metric in CivCity: Rome and the Critique of Simulation Games.”

[2] Ronald Syme, *Roman Revolution* Rev. Ed. (Oxford: Oxford University Press, 2002), 146.

[3] Jeremiah McCall, *Gaming the Past: Using Video Games to Teach Secondary History* (New York: Routledge, 2011).

JEREMY ANTLEY

Going Beyond the Textual in History

But I must explain to you how all this mistaken idea of denouncing pleasure and praising pain was born and I will give you a complete account of the system, and expound the actual teachings of the great explorer of the truth, the master-builder of human happiness. No one rejects, dislikes, or avoids pleasure itself, because it is pleasure, but because those who do not know how to pursue pleasure rationally encounter consequences that are extremely painful. Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can procure him some great pleasure. To take a trivial example, which of us ever undertakes laborious physical exercise, except to obtain some advantage from it? But who has any right to find fault with a man who chooses to enjoy a pleasure that has no annoying consequences, or one who avoids a pain that produces no resultant pleasure? On the other hand, we denounce with righteous indignation and dislike men who are so beguiled and demoralized by the charms of pleasure of the moment, so blinded by desire, that they cannot foresee the pain and trouble that are bound to ensue; and equal blame belongs to those who fail in their duty through weakness of will, which is the same as saying through shrinking from toil and pain. These cases are perfectly simple and easy to distinguish. In a free hour, when our power of choice is untrammelled and when nothing prevents our being able to do what we like best, every pleasure is to be welcomed and every pain avoided. But in certain circumstances and owing to the claims of duty or the obligations of business it will frequently occur that pleasures have to be repudiated and annoyances accepted. The wise man therefore always holds in these matters to this principle of selection: he rejects pleasures to secure other greater pleasures, or else he endures pains to avoid worse pains. 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Photo by Andrew Mason

Because of my interest in both history and games, I'm always on the look-out for good writing or new takes on how to bring elements of the gaming world into the framework of historical inquiry. Increasingly, I'm finding my best sources of this kind of reading from my Twitter stream, as was the case when Shawn Graham (@electricarchaeo) pointed me towards an article in the recent edition of the Canadian Game Studies Association journal, 'Loading...', titled 'Beyond the 'Historical' Simulation: Using Theories of History to Inform Scholarly Game Design'. Tackling what they call 'gamic action', the authors of the paper look to use elements of 'procedural rhetoric' combined with 'valid and scholarly means' of constructing the past (modeled on the monograph or print article) to produce 'reasonably justified truths' compatible with current methodologies in use by many historians.^[1]

I mention the article not because I found it to be a progressive example of innovative historical thinking on games, but rather the opposite. Instead of offering a means by which games can be productively and thoughtfully incorporated into historical study, the authors present a reactionary stance that seeks to bind 'gamic action' within the tightly defined epistemological boundaries incorporated into textual modes of history. While they do offer valid insight when it comes to analyzing the roles and pretenses games follow today with regards to claiming historical validation, the repeated insistence on bringing into alignment the modes of 'objective' history and playable games not only overlooks the complimentary nature of both in creating reasonably justified truths about the past (to borrow a central concern of the authors), but also ignores the more fundamental issue centered on student prosumption (production + consumption) of historical knowledge.

While the first objection stems from concern the authors profess regarding the ability of games to present historical 'truth' as exemplified by the monograph, the second objection goes to the core of a fundamental debate now occurring in the discipline of history. Examining both these objections yields the insight that history must go

beyond the textual when forming links outside the circumscribed boundaries current epistemologies demand. This is not abandonment, it is augmentation. Rather than take a simplistic, reductionist view of the interplay between history and games, it might suit both the historian and the student better to uncover the more nuanced and complex interoperability both spheres of knowledge possess.



Photo by Caro's Lines

Let's begin with what the authors define as the 'gamic mode'.

A gamic mode of history is the construction of scholarly historical arguments as scholarly games, creating a relationship to commercial games analogous to that of non-fiction to fiction in literature. This enables scholars to convey their research in ways that go beyond the

limits of textual monographs, digitized historical sources, and digital simulations.[2]

Thus the introduction of two parallel themes that run through the entire article — first, that scholarly historic arguments can be laid 1:1 over the gamic mode and, second, that this gives the gamic mode a source of truth to which other, commercial games cannot lay claim. Simply put, the two worlds of textual history and games cannot coexist unless they are mirrors of each other, for to allow the possibility of transition between distinct spheres of knowledge would imply that truth is relative and the certified authority of the historian is no greater than the roll of a die or play of a card. Students/players, in the 'commercial' and 'simulative' gamic modes, are empowered to both consume and produce knowledge on a level that is difficult for traditional historians to acknowledge, much less accept.



Sketch by Mark Schaver

This fear is clearly expressed by the authors when they claim that current methods of integrating games and history steer the debate away from expressing and elaborating “a disciplinary way of creating truth” and ultimately seek to transform the discipline by altering its epistemologies and limiting its empirical rigor. Hence the following claim by the authors:

This [steering of the debate] in turn limits scholarly debate by increasing ambiguity and opening reader response beyond the determination of whether or not the author has presented a reasonably justified truth.[3]

While that statement certainly seems ominous, the real source of angst is not the debate on epistemology, truth, and empirical rigor conflating history and games supposedly brings about — it’s the fact that the reader is apportioned a space of interpretation hereto held inviolate by certified authorities of the historical profession. The gamic mode, as the authors see it currently being applied, allows the reader (note careful avoidance of the term ‘player’) to produce responses that go beyond consumption and simple affirmation or negation of the argument presented. The reader, enabled to produce (or, more accurately, prosume) their own ‘truths’, can simply avoid the argument altogether.

Instead of dwelling on this point, let’s put it in our back pocket as we survey other important parts of the authors argument.

One key concept that helps the authors align fidelity of the historical textual mode to the gamic mode is *procedural rhetoric*, a term first introduced and elaborated by Ian Bogost, defined in this context as:

...the use of computational processes to persuasively and effectively convey an idea. What the author creates in procedural rhetoric is not the argument itself, but a series of general and specific rules through authoring code that a computer can then use to generate the argument (Bogost, 2007). This mirrors scholarly constructions of the past as history in two important ways. First is that the argument is not the past, but a representation of it created by authoring evidential and interpretive

relationships that lead to conclusions. Second is that the scholarly historical argument itself consists of facts that are converted to evidence and arranged according to a set of rules for that particular argument via interpretation. The gamic mode of history is an application of procedural rhetoric that takes advantage of the processes inherent in scholarly evidential relationships to express these arguments as games. While different in form the argument experienced by the player would contain the same series of procedural evidential relationships that work towards a verifiable conclusion with a reasonably justifiable truth attribute that they might have expected to find in a monograph of the same argument.[4]

By linking ‘computational processes’ to the way in which textual arguments are assembled, the authors hope to bring authoritative strength to their claim that the gamic mode and the textual historical argument can be one and the same. However, this viewpoint hinges on the assumption that digital games possess an internal consistency of rules and play that allow the player to understand and predict cause/effect relationships in the gamic world. This, unfortunately, is not the case.

Digital games are, by their very nature, *closed* constructions whose operation the player cannot, on face, intrinsically know or predict without engaging first in a large degree of play. Cause/effect relationships in digital games are determined by trial and error, inference, and the acknowledgment of a reward to indicate progress. Yet the player can never be sure every corner of a digital game has been explored because many actions are obscured by the operation of code, which the player often cannot access and modify. In fact, a digital game could be considered the exact opposite of a monograph, where the argument and sources used are clearly articulated. But of course, this too simplifies the monographs presence, which is never really accounted for in the article. For while citations are visible, the documents behind those citations are not. Alternatively, we know what the scholar selected but we don’t know what they didn’t select, or even the range of documents surveyed. This is not a knock on

professionalism, merely the idea that history in pursuit of objectivity nevertheless is guided, perhaps unknowingly, by subjective desires.

There is also the question of why the authors are so dedicated to digital gamic action, leaving the venerable tradition of manual board gaming to the relative wayside. I find this trend currently common in many historic approaches towards utilizing games — but without straying too far from the question at hand, I would add that board games at least allow an alternative separate from the digital gamic mode to occur. Board games are ‘open’ and the player does not have to continually press the boundaries of the world to figure out its meaning, a la digital. Complete boundaries are defined and areas of ambiguity are not hidden but rather demarcated quite visibly in a manual design. The player can dispense with the never-knowing and move straight to analysis and interpretation. It should also be noted that the ‘open’ design of manual games allows players to assert their own interpretations of the events or model depicted, something the authors, as cited above, greatly disdain.

To put it on even simpler terms — the main objection the authors have with current gamic modes is that they produce history for consumers, while the authors would much rather produce history for producers. This approach, currently, is endemic in the historical discipline because historians, by and large, are used to being both the producers and consumers of their own product. This is why the authors struggle so mightily to make equivalent a textual mode of history and a gamic mode of history, to make claims that this approach can, perhaps, go beyond the textual when, in fact, the very notion of equivalence negates this possibility. Textual modes focus on producing knowledge through reading, while gamic modes focus on producing knowledge through play. One allows simple consumption, the other complex presumption.

Stalwart defense of the ‘consumptive’ textual mode can be further seen in the authors elaboration of Alan Munslow’s three broad epistemological approaches to historical scholarship, those being

construction, *deconstruction*, and *reconstruction*. Because *deconstruction* relies upon one’s own experiences to form understanding of evidence and arguments presented, the authors reject such claims of historic inquiry because “to certain extent (deconstruction) means the past is unknowable and denies a corporate understanding of history.” *Reconstruction* is similarly disqualified as its primary exemplar, the computer simulation, asserts that collected facts of the past can be arranged and recreated to simulate the past as it actually happened — yet this involves subjective qualifiers and emphases that the authors stress “taxes the traditional historian’s ideal of objective scholarship.”[5]

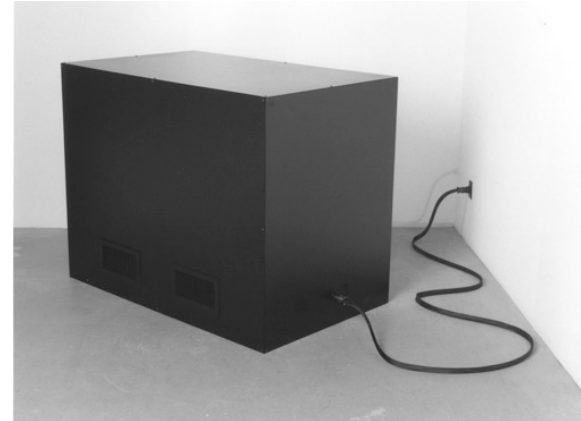


Photo by Ken Goldberg

This leaves *construction* as the preferred epistemological approach in producing an authoritative historical gamic mode.

Constructionist history builds up knowledge of the past and expresses the past as history by both analyzing how and what individual pieces of evidence can do, and what conclusions about the actions of historical agents (be they individuals or corporate entities) can be established through evidence relationships. In this case, evidence itself is separate from a notion of historical fact, as the fact only becomes evidence based upon its relationship to the question at hand. The constructionist

approach to history, while allowing almost any question to be asked, provides parameters around how the question can be answered.[6]

What gives *construction* the edge for the authors is that it neatly lays out parameters establishing how ‘almost any question ... asked’ can actually be answered. *Construction* also goes hand-in-hand with the use of narrative to act as the communicator of historical truth. Narrative as communicator of truth is so vitally important to the authors that they express fear in letting the student have input on interpretation outside of that directed by the historian:

Narrative is so closely tied to our understanding of action, and as history is the study of past action, that if the historian’s prose does not present a cohesive narrative to the reader, the reader then creates one. Therefore, the gamic mode of history needs to be able to utilize narrative in the same way.[7]

Under this rationale, it becomes easy for the authors to question the role of any gamic mode in which the student/player becomes a nexus of interaction or interpretation of historical evidence. Simulations and counter-factuals, the bread and butter of commercial games, are thus scorned by the authors because they allow the student/player to feel as though their actions create meaningful and accurate depictions of the past without utilizing “empirical, justified truths claims about the past.”

The solution presented by the authors is *Shadows of Utopia: Exploring the Thinking of Robert Owen*, a digital game that lets players simulate “an argument about Robert Owen’s thinking.” Placing questions of education and labor reform before the player expressed through puzzles and game-world exploration, *Shadows of Utopia* demonstrates the idealistic thinking of Robert Owen via player transformation of the game-world’s ‘lazy, foolish shadow-creatures who steal and rob’ into real people who attain wealth and morals through factory work. Mimicking the textual authenticator of citations, *Shadows of Utopia* provides in-game source documentation in a

transparent manner, going so far as to link “sources and related interpretations to the game code, user interface, and aesthetic choices,” although how this is accomplished is not specifically defined.



[This is not 'meaningful' description. Photo by Phil Romans](#)

The authors conclude that efforts like *Shadows of Utopia* not only can “do all the things that the textual mode does” but also “add digital utilities that augment research in imaginative and useful ways.”

Now, to be clear and upfront, I think that *Shadows of Utopia* sounds like a fascinating attempt to bridge the epistemological gap between what we understand to be the practice of history with the act of play encountered in the gamic mode. However, I'm not willing to burn all other existing and potential bridges from history to games as the authors of 'Beyond the Historical Simulation' have done. For one thing, porting (to borrow a phrase from digital gaming) over the epistemological guidelines of textual monographs and journal articles to the gamic mode doesn't allow one to go beyond the textual mode — it merely extends that mode to gamic space without taking into account the unique epistemologies gamic space inherently possesses. (The authors want to 'paper over' the gamic space, literally, with textual modes.) To make a simple point of comparison, a monograph does not seek reader input whereas a game, by its very nature, requires player input to be utilized. When you read a journal article, you are *passively* absorbing knowledge. When you play a game, you are *actively* absorbing knowledge. The authors argument presented above seeks to appropriate player *activity* and channel it into *passive* knowledge absorption.

Instead of trying to simplify the conflation of history and games, perhaps it would be better to acknowledge their separate epistemological boundaries and formulate a way to negotiate knowledge handoffs between the two spheres. Katie King in her recent work [Networked Reenactments](#), points the way to just such a negotiation in her analysis of *flexible knowledges* and *pastpresents* displayed in commercially produced television reenactments. Here we often see the interplay of several fields of knowledge, represented either by talking heads or physical actualization of knowledge epistemologies through representative involvement (i.e. having a historian and architect work together in recreating a Roman bath), set against the backdrop of a historical narrative that links the past to the present. When you add in the viewer angle to reenactments, the demarcation of specialized knowledge becomes less and less viable as the *flexible knowledges* required to fulfill the reenactment demand

greater mobility than tight epistemologies might otherwise demand. Thus King notes,

...it is especially important that reenactments are not a way to keep pasts and presents apart — or a way to keep authorities and alternative knowledges, metaphors and referents, materialities and abstractions, forms of academic expertise and cultural entertainment, or affects and cognitions separated, managed, or delimited by membership. Flexible knowledges, transdisciplinarity, new media, all plunge us into uncertainties, risk, collusion, and collaboration; all conditions that — as with responsibilities to multiple audiences from painfully limited authorships — we do not control and in which we are elemental “bits” in emergent reorganizations of knowledge economies and among altering evaluations.[8]

The uncertainty noted by King is what the authors of 'Beyond the Historical Simulation' wish to avoid, as it potentially invalidates the historians authoritative position in knowledge making. But, again, King notes this aversion in traditionally defined disciplines presented with *flexible knowledges* when she states, “intensively experienced affect is what signals movement across knowledge worlds, as well as what indicates cognitive and affiliative shifts across what counts as authoritative.”

I have tried in previous posts (one on [course design](#), another on [modeling counterinsurgency](#)) to indicate a way towards understanding how to use games in historical study that seeks to broaden the analytical framework beyond that of the textual, even though the textual is essential to analyzing games. If games offer us nothing but interpretations of history, something I don't fully believe, there is still valuable cultural significance worthy of study in the act of play that brings about said interpretations. How are cultural narratives sustained or modified in play? Why do some historical 'truths' stick to the public consciousness, while others are perennially ignored? How are certain conflicts or simulations modeled, and why would designers build games to emulate these processes? How does a player's analysis

of the game, its play-design mechanics, impact how they approach replays or creating modifications? (In particular I'm thinking of ['pacifist' play in Skyrim](#) and even the [creation of a '72 Summit Series card](#) for Twilight Struggle.)



Photo by Kristian Mollenborg

King offers a potent conceptual metaphor for analysis of games with her use of *pastpresent* — a player literally links the past to the present with their act of play — in addition to providing a framework through which diverse disciplines can interact on the subject of games through her analysis of *flexible knowledges*. This is a good start — but as the 'Beyond the Historical Simulation' article makes clear, there are still many who are skeptical of such ventures.

Games are highly complex cultural artifacts that situate themselves on the borders of several disciplines, embodying fully the sort of reenactment potential for *flexible knowledge* discussed by King above. While it might be nice to render the gamic mode under the auspices of textual epistemologies, these can only take us so far in our understanding on the interactions of both and perhaps limit us, arbitrarily, from expanding and utilizing historic knowledge in

emerging 'posthumanities' approaches the study of games demand. We can surely do better than advocate for the gamic mode to become backwards compatible with textual monographs.

Originally posted by Jeremy Antley on [March 5, 2012](#). Revised for the *Journal of Digital Humanities* June 2012.

Notes:

- [1] 'Procedural rhetoric' is a concept introduced by Ian Bogost in his work *Persuasive Games* (Cambridge, MA: The MIT Press, 2007).
- [2] Jerremie Clyde, Howard Hopkins, and Glenn Wilkinson, "Beyond the "Historical" Simulation: Using Theories of History to Inform Scholarly Game Design," *Loading. The Journal of the Canadian Game Studies Association* 6:9 (2012): 3 (<http://loading.gamestudies.ca>).
- [3] Clyde, Hopkins, and Wilkinson, 5-6.
- [4] Clyde, Hopkins, and Wilkinson, 6.
- [5] Clyde, Hopkins, and Wilkinson, 8.
- [6] Clyde, Hopkins, and Wilkinson, 7.
- [7] Clyde, Hopkins, and Wilkinson, 8.
- [8] Katie King, *Networked Reenactments: Stories Transdisciplinary Knowledges Tell* (Durham: Duke University Press, 2012), 17.

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KATE THEIMER

Archives in Context and as Context

Approaching the field of digital humanities as an outsider is an interesting experience. It is best compared, I think, to being a tourist in a foreign country for which there are no reliable guidebooks. It is a country in which the language is almost the same as the one you speak, and yet words are used to mean somewhat different things. It is also a relatively young country, still trying to define its national identity.

As an archivist, attempting to learn more about this foreign country of “Digital Humanities,” I am struck with how often its citizens refer to the “archives” they or their colleagues create. To continue the tourist analogy, imagine that the country I come from is the nation of “Archives,” and that it has a longer history than that of the country of Digital Humanities. The nation of Archives has well established national principles. It is a small country, perhaps, and not a powerful player on the international stage, but its citizens are quietly proud of what they have managed to accomplish with such a small national budget.

And so I, a tourist from the country of Archives, visited the foreign land of Digital Humanities and quickly realized that something a bit odd has

happened to my treasured national heritage. When I questioned digital humanists about what they meant when they use the word “archives” or questioned the appropriateness of using it to describe various collections, the responses varied from befuddled confusion (“I’m not sure what I mean”) to a strenuous defense of the different usage. Given the emerging importance of digital humanities as a scholarly field, I thought it would be useful to explore this disconnect and so perhaps shed some light for both archivists and digital humanists about what each may mean when using this common word.

Archivists have become accustomed to the adoption of “archives” by information technologists as well as the general public to refer to things which we archivists would not call archives. So it is not the adoption of the term by digital humanists that is noteworthy, but that its meaning in certain contexts has been altered by scholars, many of whom have experience working with archives as traditionally defined. And yet it is these scholars who have chosen to describe the collections they have created as archives, seemingly in all sincerity that their usage is appropriate and not in contradiction to the practice of archivists. What could account for this disconnect?

But, perhaps more importantly, why does it matter? If some digital humanists, along with the world in general, have adopted “archives” to mean a variety of things, why should it be important to articulate and share the traditional archival vision of an archives? Archivists cannot control the use of the word “archives” and do not have exclusive rights to it. Practitioners of the digital humanities can and will continue to use it to mean whatever is meaningful in their discipline. However, I will argue that there is value and context in the way archives professionals have defined this term. The archivists’ definition is more specific, and therefore in my opinion conveys greater meaning. It is this meaning, and with it the understanding of the specific role

archives play in preserving unique documentary material, that I want to promote.

In this article I will examine one formal definition of “archives” and use it to illustrate the fundamental principles that separate traditional archives from many of the collections created by digital humanists. I hope my discussion will itself be a demonstration of the need for greater communication between digital humanists and information professionals, such as archivists, about the areas where our practices intersect.

Surveying the landscape of the digital humanities, the “archives” that attracted my attention were primarily online groupings of digital copies of non-digital original materials, often comprised of materials (many of which are publications) located in different physical repositories or collections, purposefully selected and arranged in order to support a scholarly goal. Some prominent examples of this kind of usage are the [Shakespeare Quartos Archive](#), the [Rossetti Archive](#) and the [William Blake Archive](#).^[1] When I queried a few digital humanists about why they felt the collections they created qualified as archives, the most common response was that the materials had been *selected*. Based on this small sample, it appeared that their perception of what constituted an archive was a grouping of materials that had been purposefully selected in order to be studied and made accessible.

It is perhaps worth noting that many digital humanists, especially literary scholars, may have more direct exposure to manuscript collections or special collections, rather than true archives. The distinction between the two is sometimes not clear and many institutions have joint archives and special collections units (or departments or offices). A manuscript repository (also known as a manuscript library or special collections library) collects materials from outside sources through donation or purchase. In contrast, an

archives is the repository for the historical records of its parent organization. For example, the National Archives of the United States is the repository for the historical records of the U.S. government; the Harry Ransom Center acquires its historical collections through donation or purchase. The National Archives, like most archives, also contains some donated materials; however the primary holdings of any archives will be the records of its sponsoring organization.

Although “archives” can be an organization or office within an organization, that is not, I think, the usage that is most relevant to this discussion. For that, we need to discuss the first definition of “archives” endorsed by the Society of American Archivists:

Materials created or received by a person, family, or organization, public or private, in the conduct of their affairs and preserved because of the enduring value contained in the information they contain or as evidence of the functions and responsibilities of their creator, especially those materials maintained using the principles of provenance, original order, and collective control.^[2]

There is nothing in this meaning of “archives” that references a selection activity on the part of the archivist. This led me to think that perhaps digital humanists were assuming the larger meaning of archives, which references the activities of the archivist at the repository level. This is analogous to the third definition of archives as defined by SAA:

An organization that collects the records of individuals, families, or other organizations; a collecting archives.^[3]

If an archivist is perceived to be one who creates an “archives,” i.e. a place in which valuable materials are collected, then the selection function emphasized by the digital humanists makes more sense. An archivist in this sense is one who selects things for preservation and

makes them accessible. And the experience of most scholars working with archival or manuscript collections may very well have left them with the impression that this is the primary work of an archivist and the meaning of an “archives.”

And so it is, in part, but I believe that for most archivists it is the first definition of archives that distinguishes our work and our profession. Many other kinds of professionals (and non-professionals) select or collect materials, preserve them, and make them accessible.

What defines the work of an archivist, and so “an archives” in the mind of an archivist, is what materials are selected and how they are managed. Archivists select and preserve “archives” as defined in the primary definition, which is to say aggregates of materials with an organic relationship, rather than items that may be similar in some manner, but otherwise unrelated. The archival selection activity, known as “appraisal,” generally takes place at this aggregate level, and it is whole collections, donations, or records series which are being selected. These aggregates are “maintained using the principles of provenance, original order, and collective control.” These principles constitute the primary differences between archives and other kinds of collections.

The first of these principles is provenance. Just as in the art world, provenance refers to the history of an object, its creation and ownership. With works of art, provenance is usually used to better understand or authenticate an object. While those uses also apply in the archival world, provenance is also the basis for the “principle of provenance,” also known by its French designation *respect des fonds*. This principle dictates that “records of different origins (provenance) be kept separate to preserve their context.”[4] In other words, records originating from different sources are never to be intermingled or

combined. It is important to note in this regard that the “source” of a record is not necessarily the same as its author.

This distinction about the “source” of a record is related to the second key archival principle, that of collective control. Archival materials are generally managed as aggregates, not as collections of individual items. These aggregates, which can be referred to as record groups, series, and manuscript collections, are established according to the source of the aggregate, often a result of the activity which generated the records.[5] The principle of collective control is dependent on understanding the provenance of the aggregate of materials. To return to the primary definition of archives, the aggregate will be defined by who created it (“a person, family, or organization, public or private”) and why it was created (“in the conduct of their affairs”). The aggregate of records created by a person, family, or organization may contain records with many different authors. For example, the records of a publishing house may contain correspondence with many individual authors. Once transferred to an archival repository, those records will be maintained as a distinct aggregate (say, the “Records of Smith Publishers”) and the contents will not be removed and added to other aggregates based on the individual authorship or topic.[6]

The third principle directs that within each aggregate of records the original order imposed by the source of records should be preserved or recreated, if it is known.[7] This principle, along with adhering to the principle of provenance and collective control, exists to preserve the original context of the records. Some records are meaningless outside their original context and others gain additional value by being examined within it.[8]

While not specified by Pearce-Moses, another defining aspect of archives is that primarily original or unique materials and not

published ones are collected. When published materials or copies of materials are accessioned it is usually because they are part of an aggregate and therefore gain or provide context as part of the grouping.

These qualities taken together — preserving groups of primarily original, unique materials, which are maintained using the principles of provenance, original order, and collective control — are the bedrock of the practices of archivists. These practices are expressions of a common set of values — values which I think archivists do not discuss often enough outside our own professional communities.

I believe embedded in the discussion of what constitutes an “archives” is, consciously or not, a debate over the importance of authenticity and the preservation of context. In fact, an essential aspect of demonstrating authenticity is preserving context. Authenticity is “typically inferred from internal and external evidence, including its physical characteristics, structure, content, and context.”^[9] Physical characteristics, structure, and content are all internal evidence; the external evidence of authenticity is supplied through context, and so the archival drive to preserve context is in part motivated by the need to preserve the evidence needed to assess the authenticity of the material.

For archivists, preserving context is also about preserving the conditions that make documents more meaningful to users. All of the aspects of an archives encapsulated in the archival definition are designed to preserve the context of materials. I will return to the issue of context again, but with this in mind, I want to return to considering the digital humanities usage of “archives.”

Given the importance archivists place on the principles I have just described, it may be easier to understand the disconnect between the way archivists define “archives” and the way it is often used in the

digital humanities. Archivists would not refer to online groupings of digital copies of non-digital original materials, often comprised of materials (including published materials) located in different physical repositories or collections, purposefully selected and arranged in order to support a scholarly goal, as an “archives” — and so the confusion of an Archivist tourist in the land of Digital Humanities.

I can think of three possible responses to this archival questioning of “archives” in digital humanities. First, as noted above, archivists do select materials for acquisition and accession. So if digital humanists identify the primary activity of the archivist as one who selects things, then this could lead them to consider the collections of materials they have created by selection as “archives.” However, while it is true that at the repository level, archivists create “the archives” by designating some administrative records as having permanent value and by accepting donations of collections of records created by people, families, and organizations (and occasionally purchasing them), these selection decisions are made at the aggregate level. It is these aggregates, as whole units, that are selected, not the individual items within them, which seems to contrast with the approach taken in “archives” created by digital humanists. Within an aggregate, or an “archive,” archivists do not select.^[10]

Second, it might be argued that the “archives” created by digital humanists are themselves archives in that they represent the records of those people’s own professional activities. For example, if digital humanist Linda Tompkins creates a digital collection of materials related to John Ruskin, do these materials not constitute “materials created or received by a person, family, or organization, public or private, in the conduct of their affairs and preserved because of the enduring value contained in the information they contain or as evidence of the functions and responsibilities of their creator?” The

archival response would be probably yes, but then they would be the archives of Linda Tompkins, not the John Ruskin Archives. Archivists identify aggregates, adhering to the principal of provenance, according to the source of the aggregate, not the subject.^[11]

Third, it could be argued that in the digital realm a different definition of archives applies. For example, in a 2009 article in *Digital Humanities Quarterly* Kenneth Price flatly stated: “In a digital environment, *archive* has gradually come to mean a purposeful collection of surrogates.”^[12] It certainly appears that this is the case in the field of digital humanities, just as information technology has adapted “archive” to mean collections of back up data. Many websites refer to the content maintained on the site, but not considered current, as existing in “archives.” All these uses are valid in their contexts. Archivists cannot control the use of the word “archives” and do not have exclusive rights to it. Language is constantly evolving and to try to enforce one group’s definition onto another group’s usage is doomed to failure. However, in such cases it is all the more important for those groups using the same word to understand the distinctions and meanings it has beyond their own borders. This is what I am trying to do here with the usages of the archival and the digital humanities communities.

Therefore, it is important to note that the formal definition of “archives” used in the archival community cited here recognizes no differences for electronic records, born digital material, or materials presented on the web. Price’s definition, put forward for a digital humanities audience, may be correct in that community of practice, but it should come as no surprise to digital humanists that archivists have concerns about that definition.

The issue here is not that one definition is right or wrong, but that the archival definition carries with it an adherence to professional practice and values that digital humanists are perhaps not aware of. Personally, I would prefer that online collections that do not meet the archival definition of archives be referred to as digital collections rather than archives. “Collection” clearly implies materials that have been assembled and intentionally brought together.”^[13]

However, while the purpose of an archives as traditionally defined is to preserve materials in their original context (or at least “the organizational, functional, and operational circumstances surrounding materials’ creation, receipt, storage, or use, and its relationship to other materials”^[14]), archivists recognize that this is by no means the only context in which materials may be understood. For example, a letter written by Dante Gabriel Rossetti may have context within the records of an art dealer or publisher preserved in an archives, but it will also have context seen with his other correspondence as gathered together in the online collection that is the “Rossetti Archive.” The critical difference is that while such a letter can be placed within many different contexts in many different kinds of collections, it is only in a collection managed according to archival principles that the organizational context of the letter is preserved. Preservation of this kind of context is what separates archives from libraries, most personal collections, and assembled virtual collections.

What concerns me is that in the broadening of “archives” to extend to any digital collection of surrogates there is the potential for a loss of understanding and appreciation of the historical context that archives preserve in their collections, and the unique role that archives play as custodians of materials in this context. Given the connotations of authority, rarity, and “specialness” that the word “archives” has in our culture, it is not surprising that it is an attractive word to use, as the

creators of the William Blake Archive admit, to describe an online collection for which no other word seems to fit. I have no illusions that this discussion will alter how digital humanities scholars use “archives” within their own projects and discourse. I do hope, however, that this usage can be informed with an understanding of the principles embedded in the word as archivists have defined it, and that the role of archives (the kind that archivists manage) as custodians of a particular kind of context can be appreciated.

Expanded from an original post by Kate Theimer on [March 27, 2012](#).
Revised for the *Journal of Digital Humanities* June 2012.

Notes:

[1] Interestingly, the William Blake Archive provides an explanation of “[What do we mean by an ‘Archive’?](#)” which concludes with “Though ‘archive’ is the term we have fallen back on, in fact we envision a unique resource unlike any other currently available for the study of Blake—a hybrid all-in-one edition, catalogue, database, and set of scholarly tools capable of taking full advantage of the opportunities offered by new information technology.” I read this as confirming that they knowingly used the word “archive” to describe something that they knew was not actually an archive since they describe it as a “unique resource.”

[2] Richard Pearce-Moses, “Archives” in *A Glossary of Archives and Records Terminology*. (Chicago: Society of American Archivists, 2005), available at http://www.archivists.org/glossary/term_details.asp?DefinitionKey=156.

[3] Ibid.

[4] “[Provenance](#),” Pearce-Moses.

[5] For definitions of these terms, refer to Pearce-Moses, *A Glossary of Archives and Records Terminology*. Note that while “manuscript collection” might seem to refer to a collection of manuscripts, it is used specifically to describe a collection of personal or family papers. The use of the word “collection” in archival practice can be confusing. It can also be used in the sense of an “artificial collection” which is “A collection of materials with different provenance assembled and organized to facilitate its management or use.”

[6] Perhaps the most prominent feature of collective control is that archival collections are described as aggregates (again, as record groups, collections, and series) but rarely, if ever are the individual items in an aggregate described. This difference in the level and type of management and description is often cited as a key differentiation between archives and libraries.

[7] As Pearce-Moses notes in his definition of “[original order](#)”: “A collection may not have meaningful order if the creator stored items in a haphazard fashion. In such instances, archivists often impose order on the materials to facilitate arrangement and description. The principle of respect for original order does not extend to respect for original chaos.”

[8] For a classic case of the value of context, see the example summarized in “[‘Well done’: When context of records matters](#).”

[9] “[Authenticity](#),” Pearce-Moses.

[10] Some selection occurs below the aggregate level in the activity commonly referred to as “weeding” (or “culling”). Weeding may occur

during the processing of the collection, and refers to the removal of material deemed to have no value. Examples of materials which may be weeded are duplicate copies of materials, blank letterhead or stationery, etc.

[11] An archivist describing such a grouping would probably refer to it as a “collection” rather than an “archive.” See the definition of “[collection](#)” in Pearce-Moses.

[12] Kenneth M. Price, “[Edition, Project, Database, Archive, Thematic Research Collection: What’s in a Name?](#)” *Digital Humanities Quarterly* 3.3 (2009).

[13] That said, it should be noted that some information professionals are adopting the usage of the digital humanities community by referring to their own assembled collections of digital copies as “digital archives.” See for example the [Marcel Breuer Digital Archive](#).

[14] “[Context](#),” Pearce-Moses.

MIRIAM POSNER

Think Talk Make Do: Power and the Digital Humanities

How cowardly to begin with a disclaimer! And yet. It seems worth saying that I wrote [the original post](#) from which this is derived in a fury at job-market news from friends, as well as the [latest statistics from VIDA](#) about women's representation in magazines and book reviews. I probably would have been more temperate if I'd known what kind of reaction this post would provoke — but then again, who knows? Maybe not.

What interests me in hindsight is how relatively limited my original post's claims are, compared to the breadth of reactions in its wake. I said, simply, that if you want everyone to code, fine — but recognize that not everyone has equal access to this education. Or that's what I thought I said. The responses, to my surprise, fixed [on archival representation](#), the [nature of identity-making](#) in digital humanities, the [kinds of knowledge](#) we value, and how community members might productively [express dissent](#).

I do not flatter myself that these reactions have anything in particular to do with the quality of my original blog post. Rather, it seems to me

that many people had things to say about identity and community in digital humanities at a moment when these questions feel pressing.

One of the odd things about blogging is that the final product, the thing you're left with, is not what you've originally written. It's an oddball aggregate of the comments, responses, and conversations it leaves in its wake. In this case, these conversations changed what, in my mind, the original post was about. For me, it's no longer just about coding and gender; it's about the kinds of conversations we're willing to have about uncomfortable questions.

I was inspired and energized by many of the reactions to this post. But I do suspect, in the aftermath of all this, that we digital humanists have not yet developed a robust language for discussing inequities of power among our practitioners. These inequities do indeed have to do with the kind of position one holds — whether, for example, one is a tenured professor, a contract archivist, or a staff technologist — but at this moment, inequities of gender and race feel most pressing to me precisely because we've proven ourselves frankly bad at discussing them. Our community is wonderful and worth celebrating, but it's worth scrutinizing, too.

It's equally true that we won't really resolve these questions by reaming each other over the seminar table, as so many of us were trained to do. As Stephen Ramsay [suggests](#), now might be a good time for us to talk to each other not *nicely*, but *benevolently*; that is, with the understanding that we value and care about each other as colleagues and friends, even when we disagree.

What follows is an edited version of my, [original post](#) called “Some Things to Think about before You Exhort Everyone to Code,” along with selections from the follow-up post I wrote a few days later.

Oh, how I hate being the bearer of bad news. Yet I feel I have to tell you something about the frustration I'm hearing, in whispers and on the backchannel, from early-career women involved in digital humanities.

Here, there, and everywhere, we're being told: [A DHer should code!](#) Don't know how? Learn! [The work that's getting noticed](#), one can't help but see, is code. As digital humanities winds its way into academic departments, it seems reasonable to predict that the work that will get people jobs — the work that marks a real digital humanist — will be work that shows that you can code.

[And that work is overwhelmingly by men](#). There are some [important exceptions](#), but the pattern is pretty clear.

In principle, I have no particular problem with getting everyone to code. But I wanted to talk here about why men are the ones who code, so that we can speak openly about the fact that programming knowledge is not a neutral thing, but something men will tend to have more often than women.

First, men — middle-class white men, to be specific — [are far more likely](#) to have been given access to a computer and encouraged to use it at a young age. I love that you learned BASIC at age ten. But please realize that this has not been the case for all of us.

Second, the “culture of code,” the inside jokes and joshing [that you enjoy](#), may not be equally [appealing](#) to everyone who encounters it. This should be, but apparently isn't, obvious.

But Miriam, you're thinking, there are lots of examples of DH coders who started late and are now well-respected and proficient! This is

true! And they inspire me all the time. But this is also why I wanted to talk a little bit about what it's like for a woman to learn to program.

Should you choose to learn in a group setting, you will immediately be conspicuous. It might be hard to see why this is a problem; *after all, everyone wants more women in programming. Surely people are glad you're there.* Well, that's true, as far as it goes. But it also makes you extremely conscious of your mistakes, confusion, and skill level. You are there as a representative of *every woman*. If you mess up or need extra clarification, it's because you really shouldn't — you suspected this anyway — you shouldn't be there in the first place.

But there are all these online communities where you can learn to code. There are! But if you are under the impression that online communities are any friendlier to women's participation, [then you, my friend, have not looked lately at Wikipedia](#).

Well, just practice! I did the work — so should you! Here is the real point I'm trying to make here: It is not about “should.” What women *should* do has nothing to do with it. The point is, women *aren't*. And neither, for that matter, are people of color. And unless you believe (and you don't, do you?) that some biological explanation prevents us from excelling at programming, then you must see that there is a structural problem.

So I am saying to you: If you want women and people of color in your community, if it is important to you to have a diverse discipline, you need to do something besides exhort us to code.

“What, exactly, are we supposed to do besides exhort women to code?” several people asked, reasonably enough. In a [follow-up](#), I suggested some positive steps we might take.

Let's think about ways to build communities of underrepresented people. We have some great [models](#) here, in the [Praxis Program](#), in [women's development groups](#), in [MATRIX](#) in the [Crunk Feminist Collective](#), and, yes, even though it might not be your bag, in groups like [Craftster](#). Women and people of color are really, really good at building and maintaining supportive communities. Let's make sure that they (we) have spaces to do that, and that they (we) know we value these communities, even when they say things we don't totally want to hear.

Let's acknowledge that we all do racist and sexist stuff sometimes. I should know. I do it all the time. All. The. Time. I don't mean to, and I'm not a bad person, but I do. Let's just figure out together how we can stop doing this when it counts, when we're depriving someone of an opportunity to learn or do something important.

Let's talk about when our niceness could be shutting down important conversations. As anyone who knows me very well will tell you, I am a Nice Person. I instinctively recoil at unpleasantness. But sometimes — not always, but sometimes — it might be necessary to have these really uncomfortable conversations.

Let's believe people when they tell us they feel uncomfortable. It's so easy to correct someone when she tells you she feels slighted because of race or gender. I've done it many times. But I'm trying, really trying, to take a minute or two to think: *She's probably the expert on her own experience.*

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Reviews

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MIA RIDGE

QRator at the Grant Museum of Zoology

As you approach University College London's Grant Museum of Zoology through the streets of Bloomsbury, the first hint that there is something unusual inside the stately Rockefeller Building appears in the banners celebrating its re-opening. The line of silhouetted animals is punctuated with the occasional outline of an iPad, the "screen" revealing the skeleton of an animal and hinting at the role of iPads in the museum experience.

Building on the long history of "have your say" interactives in museums, the [QRator](#) project was designed to solicit content from the public, museum staff, and academics to "enhance museum interpretation, community engagement and establish new connections to museum exhibit content."

QRator is a collaboration between a number of departments within University College London (UCL), including the UCL Centre for Digital Humanities, UCL Centre for Advanced Spatial Analysis, and UCL Museums and Collections, with funding from [UCL's Beacons for Public Engagement](#) programme. It incorporates technology developed by the [Tales of Things project](#), which is part of a wider Digital Economy

Research Councils UK funded research project, [Tales of Things and Electronic Memory](#), organized by UCL along with Brunel University, Edinburgh College of Art, University of Dundee, and the University of Salford.



External view, Grant Museum

The QRator project has placed ten iPads in the museum. Each iPad poses a different question about the collections, such as "Should we clone extinct animals?" or "Can we lie about what a specimen is or where it came from?" The questions are linked to particular displays, but the issues raised are relevant to the whole museum. Audiences can also comment online at [QRator.org](#), via the iPhone and Android "[Tales of Things](#)" apps or by tweeting with the "[#GrantQR](#)" hashtag. Comments left via the iPads, the Tales of Things app, and QRator.org are immediately visible across all three interfaces. The QRator.org and talesofthings.com sites host an archive of questions and comments no longer available on the museum iPads.



Detail of Grant Museum banner

The project is well integrated with other signage and calls to “get involved with the museum” in the venue. It is still rare to see digital projects so well integrated with printed material in the museum, and it suggests both an encouragingly audience-centred interpretive focus and the importance of the QRator project for the museum.

The gallery rooms are charmingly Victorian, but the interpretation is very contemporary. The [Grant Museum’s self-description](#) as “a centre for discussion and dialogue” is reflected by wall labels that pose questions in addition to providing information. Some displays of extinct species such as the dodo or the quagga have been playfully illustrated with plastic toys or models of the creature.

There is so much on display in the museum that the iPads, first visible as a gentle glow in corners of the gallery, do not dominate the gallery experience. Up close, the iPads cycle through different screens showing the current questions being asked; the responses of previous visitors to the same question; tweets tagged with “#GrantQR”; and a screen with a giant [QR code](#). A QR code is a square barcode that looks a bit like an

empty crossword. The squares can be decoded into text, such as a URL, by many mobile phones. Both museums and marketers love QR codes for the ability to link an object or place with online content or interactions, though the extent to which they are understood and used by audiences is still debated.



iPad at the end of a corridor at the Grant Museum

The links in the QR codes on the iPads take you to the Tales of Things site page for the ‘current question’ displayed on that iPad. The ability to comment directly through the iPad almost seemed to make the QR screen redundant because commenting via the iPad is easier and more immediate.

I found the Twitter screen the least interesting because the tweets shown were about the project itself rather than the questions posed on the iPad, but it did demonstrate that the [@GrantMuseum](#) Twitter account was actively finding and sharing interesting visitor comments. By giving comments a life beyond the iPads it created a greater sense of purpose than the usual “have your say” interactive.



QRator iPad in the Grant Museum

The experience was not as conversational as I expected from the initial project [publicity](#). You are not able to comment on other visitor comments (though it took a statement like “EVOLUTION IS A LIE” to make me want to), and only after searching [QRator.org](#) later did I find one or two responses from museum staff among the visitor comments. It has been over a year since the museum re-opened so there may have been more resources or interest from staff when it first launched. Questions such as “Do you find skeletons, taxidermy or specimens in fluid more interesting?” have clear potential to fulfill the [promise of influencing future displays in the museum](#) but without more responses from staff it is difficult to know what impact visitor comments might have on the museum.

Like many museum projects, the focus of visitor interactions with QRator seems to have shifted during implementation, moving away from a purely object-centric interaction to more general questions [based on the functionality of the Tales of Things platform](#). Given the specialist nature of the collections, it is a better experience for the general visitor for focusing on questions raised by the collections as a

whole. While I did not find any of the comments from other visitors particularly illuminating, it is always nice to be asked for your opinion and the questions are chosen so that they can be answered by an engaged visitor without any expertise in zoology.

Overall, the QRator experience is well-integrated with the playful, approachable tone of the rest of the museum. The occasional moderation of comments might help to improve the quality of public contributions to the project, but with the right prompts some visitors will leave thoughtful and insightful comments. The QRator project provides a useful reminder for other museums that visitors will take advantage of opportunities to comment, particularly on accessible platforms like the iPad, and that it is viable for “have your say” interactives to apply a [post-moderation model for comments](#) contributed by the public.

ANASTASIA SALTER

Playing Through the “Art of Video Games” Exhibit at the Smithsonian American Art Museum

The new “[Art of Video Games](#)” exhibit at the [Smithsonian American Art Museum](#) is exceptional for its venue, if not its content or interpretation. Although [The Strong International Center for the History of Electronic Games](#) and [The American Classic Arcade Museum](#) hold collections of video games and offer venues for playable histories of the medium, the exhibition of video games in the Smithsonian marks an institutional endorsement of the medium as art form.

Perhaps in part because the exhibit is a first attempt by the Smithsonian to display video games, it suffers from a problem of scope reflected in its title. Should the viewer of the “Art of Video Games” expect an exhibit centered on the graphical evolution of the medium? An exploration of the formal structures of video games as an art form? An argument for the artistic merit of games presented in the context of other media? A history of video games as an art form? The exhibit begs all these questions, and to some extent tries to answer them. Clear curatorial intention is missing, however, in part due to the crowd-sourced approach that I will address. After walking through the three distinct rooms that make up the exhibit, the visitor is left with an

impression of the medium’s potential but without a clear understanding of video games as an art form.

This introduction of games into the halls of a museum offers an opportunity to address the challenges of translating an interactive form to an exhibit, and to consider the interactions at the heart of visiting a museum in the first place. The challenge of representing interactivity appears at the start, as visitors enter past projected video from a series of video games. The first room is filled with artifacts from the history of games, including concept art and packaging, but the games themselves are nowhere to be seen. The text that accompanies each piece is limited, and this portion of the exhibit relies heavily on videos combining [gameplay](#) with [interviews](#).



Video panels of players during gaming

In this first room is a set of videos of different changing faces, where each player is engaged with a game we cannot see. We can witness their intensity, their emotional responses, even their occasional shifting back and forth as they engage with their controls, but we only have a narrow window into their experience of the video game. These videos reveal what differentiates the video game from other media: the role of the player in shaping their own experience. It is precisely this

interaction that the exhibit evokes, even though it only touches the surface of the medium.

Exhibit curator Chris Melissinos reinforces the importance of interactivity in the preface to the accompanying book:

It is precisely their interactivity that provides video games the potential to become a superior storytelling medium. I say potential because video games are still in adolescence. The advantage that books, movies, and television have over video games is with time only. Like all other forms of media, hindsight will tease inspired works from the digital past, and these will serve as the cornerstones of great works yet to be created.[1]



Playing Pacman in the interactive exhibits

The centerpiece of the exhibit's interactivity is found in the second room's installations of five playable game segments: [Pacman](#), [Super](#)

[Mario Brothers](#), [The Secret of Monkey Island](#), [Myst](#), and [Flower](#). Each game runs on original hardware, but is divorced from the physicality of its system. A modern pillar holds the interface, and the image is projected on the wall. In some cases, as with the NES controller, the pillar interface retains the original control system. Others deviate, such as the giant trackballs standing in for computer mice on the point-and-click adventure games.



Atari VCS console on display

These installations are successful at pulling visitors in, as the queues for *Mario* attest, and they certainly can be a powerful inducement for visitors-turned-players to revisit these and other games after they leave the museum. However, an exhibit needs to deliver beyond play, which

is a challenge this compelling set of playable demonstrations doesn't quite rise to meet.

Consider, for instance, the difference between watching a film on its own, and watching it while hearing commentary by the writer or director. The creator's comments offer a layer of embedded interpretation to the experience of encountering the text. An additional layer might be the critique of a film scholar. The missed opportunity in this exhibit is that the interaction with these games is not guided by any clear curatorial or interpretive framework; without it, the games could just as well be encountered at home.

Likewise, the exhibit could have better highlighted the evolution of the form in each of these games. Drawing attention to important developments such as the incorporation of more advanced graphical accelerators and an accompanying increase in resolution and graphical fidelity, and the advancement of game interfaces to reflect increasingly complex interactions could have provided a more nuanced understanding of why these games are significant points in the evolution of the medium.

Creating a clearer tension between the five games and the rest of the exhibit also would encourage visitors towards reflective play rather than nostalgic play – although the sight of avid gamers showing their friends or family the controls of *Flower* for the first time suggests there is value in the shared play. The five games offer a range of the types of interactions that games hold, as well as insights into the evolution of the graphics that are ultimately a central focus for the exhibit. Unfortunately, they are presented without sufficient context to explain the curatorial intention behind their inclusion.

Once a visitor enters the third room, they are confronted with the history of video games as told through consoles behind glass. Ignoring

the interface when considering games as an art form is impossible—take away the interface, and the interaction, and all you have left is video. Each system is thus accompanied by a highlights reel introducing the four games chosen by online voting. The incorporation of public voting provides another layer of interactivity to the exhibit but it also contributes to the lack of focus, making it difficult to follow any one theme through the three stages of the exhibit.

In part, this is a natural result of trying to reach an audience whose experience with video games may be minimal or nonexistent. The exhibit seems clearly aimed at novices, which is appropriate given the venue. Curator Melissnos specified that the audience for the exhibit was intended to be broad, as the goal is not “just to speak to the people who know about the most esoteric art games, it is really to have the conversation with the broadest population.”^[2]

But the crowdsourced voting and mainstream focus leaves only a few notable displays of indie games or experimental genres, such as *Rez*, *fLOW*, *Flower*, and *Okami*. The [rest of the list](#) was pulled from voting, and is filled with mainstream commercial titles, including a number of series games (such as nearly every *Zelda*), which results in a strange incoherence and prevents a curated statement about the form. Perhaps the biggest danger of the popularity contest approach is that it allows some visitors to walk away with the impression that video games are exactly what they expected, with only a few moments of deviation from the same images they might have seen in ads or at their local Best Buy.

One exhibit cannot possibly sum up an art form. The introduction of games into the museum space is tantalizing not only as an endorsement of the medium, but also as an exploration of ways to incorporate digital objects into the museum's traditional exhibit structure. The risks of putting computer games into familiar frames

rather than rethinking the frames themselves are high, as the consoles behind glass remind us. The “Art of Video Games” exhibit offers a glimpse of how games could be developed into an interactive curated experience, but greater intention in the presentation and choice of interactive elements is needed. As a first step, perhaps it will lead to further exhibitions that are less ambitious in scope but more intentional in their exploration of a particular facet of the medium’s artistry.

Notes:

[1] Chris Melissinos and Patrick O’Rourke, [*The Art of Video Games: From Pac-Man to Mass Effect*](#) (New York: Welcome Books, 2012), 8.

[2] T.C. Sottek, “[‘The Art of Video Games’ at the Smithsonian: still in beta](#),” *The Verge*, April 26, 2012.

Contributors

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Diane M. Zorich consults on information management and digitization issues in cultural and educational organizations. Before establishing her consultancy, she was data manager at the Association of Systematics Collections in Washington, D.C. and documentation manager at Harvard University's Peabody Museum of Archaeology and Ethnology. She also served as past president and board member of the Museum Computer Network, and chaired that organization's intellectual property group. She is the author of the Introduction to

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