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## The Materiality of the Book: Another Turn of the Screw

### CONFERENCE SUMMARY

This conference has had a wider focus than its title, “Literary Texts in an Electronic Age,” suggests: it is difficult to think of the *Oxford English Dictionary* or Michigan’s *Middle English Dictionary* primarily as **literary** texts. We were concerned at this conference not merely with literary texts, but with texts of **all** sorts: the prosaic in addition to the poetical, the technical as well as the belles-lettristic, the non-authored book next to the monograph. Our investigations of texts in an electronic age are as relevant to the study of history as to the study of literature: indeed, relevant across a very broad range not only of the humanities but of all prose-based endeavors.

These are the principal themes of this conference, as I understand them:

**First, and on a global level**, there is consensus among the speakers that we are on the verge of momentous changes in the way we view and use texts both individually and institutionally, and that the scale of these changes is so great as to be cataclysmic, even apocalyptic. The speakers are aware that the history of humankind is the history of change, but I sense widespread agreement among them that the changes in store for us as regards texts in an electronic age are especially cataclysmic, and particularly apocalyptic.

**Second, and on a more particular level**, we have been concerned here with standards—not so much with standards of excellence as with

standards of uniformity, which is not to say that we are not mightily interested in standards of excellence, as well. We are concerned with the need to develop rational and cost-effective standards for the encoding of texts. We are concerned with the need to develop standards for the storage, presentation, and adaptation over time of these texts. And we are concerned with the need to have adequate bibliographic control over these texts.

**Third, and also on a more particular level,** we are concerned about the roles that the various players in this game will—or might possibly—have: Who will provide the hyper/texts? What kind of instruction will what sort of teachers be able to offer to which students having access to what sort of physical facilities? How will the present professorate learn the skills they are increasingly going to need in order to survive in the classroom? What will publishers publish, and who will pay them to publish it? Where do libraries fit in, if anywhere? Where do campus computer centers fit in? Where do authors fit in, if there still are any? (You will remember the Duke of Plaza Toro's observation that when everybody is somebody then nobody is anybody.)

**Fourth,** our greatest immediate *collective* concern about the future of texts in an electronic age is access: how will users gain access? How will for-profit and not-for-profit institutions work together—or separately—to provide that access? Who will pay, and how much, and for what, and to whom?

**Fifth and finally,** our greatest *ultimate* concern is with the effect that the forthcoming, ever-more encompassing electronic environment will have on the way we think and on the way we behave. To what extent will humanistic values end up as sanitary landfill right along with all that used print on paper?

These, then, are the principal themes that I identify in this conference:

- momentous changes just around the corner;
- the need for standards;
- our changing jobs and professions;
- the possibilities and limits of access; and
- the future of humanism in the electronic age.

Let me return to these themes, one by one. First, the fact that momentous changes are in store for us.

It is the invariable prerogative of each generation to convince itself that the changes it must face are greater than all the changes that previous generations have had to face: more change, faster change, harder change, dirtier change. And I think that those of us whose professional concerns are centered in written communication are particularly susceptible to

the belief that the current and impending changes in their bailiwicks are uniquely catastrophic. In this respect, Gutenberg has a lot to answer for: we have had more than five centuries of an essentially unchanging technology, but one, so we are assured on all sides, that is done.

By way of putting our communications situation into perspective, consider the transportation industry for a moment, and over just the past two centuries. In the late 18th century, canals were all the cry; and throughout the settled parts of the United States, the race was on to provide cheap and efficient water transportation between the Atlantic seaboard and the Mississippi valley and the Great Lakes. The capital costs of building a canal were staggering—still, they got built.

How long did they last? By the middle of the 19th century, the railroads had become a major threat to canal shipping; and by the end of the Civil War, the canals were done. Think of the thousands of miles of railroad track laid in this country between the 1830s and the end of the 19th century—and of the capital costs incurred in laying that track. Nevertheless, by the middle of the 20th century, the superhighways had become a major threat to rail transportation; and a few decades later, the railroad (at least as a long-distance people-mover) was done.

Enter the airplane. My grandmother, who was born in 1885, died in the early 1970s; she was then in her mid-eighties. She was 17 years old when she heard the news of the Wright brothers' first airplane flight at Kitty Hawk; she lived long enough to see the entry into routine commercial airline service of the Boeing 747, an airplane which is both longer in length and taller in height than the distance and altitude of the Wright brothers' first flight, two or three generations earlier.

There is nothing reassuring in this argument: in the second half of the 19th century, life got tough for the individuals and institutions that depended on the canals for a living; or, later, on the railroads. In contemplating the changes in store for us as regards texts in an electronic age, I think we would do well to remember the story of the two tourists on their first visit to the state of Maine. They wandered into a lobster pound, and there was the owner, busily throwing live lobsters into boiling water. The tourists were horrified, and they complained to the owner that this was cruelty beyond bearing. The owner thought about this for a bit; but then she said, "Oh, they're used to it."

It may be good self-discipline for us all, as we go about the business of constructing our own versions of electronic Doomsday, occasionally to recite a little poem by James Thomson (Mary Brandt Jensen will please correct me if I am wrong, but I believe this poem is in the public domain!):

Once in a saintly passion  
I cried with desperate grief,  
O Lord, my heart is black with guile,  
Of sinners I am chief.

Then stooped my guardian angel  
And whispered from behind,  
'Vanity, my little man,  
You're nothing of the kind.'

We will all deal with the changes that come, because we must. Like the lobsters, we'll hate it; but like the lobsters, we'll get used to it.

The second prominent conference theme concerns standards. This is a familiar subject to librarians like Rebecca Guenther, who are trained to consider the implications of the organization of very large files; but as Susan Hockey, C. M. Sperberg-McQueen, and John Price-Wilkin all emphasized in their presentations, the importance of standards to the effective encoding of text is central. Without navigational aids, as Professor Marchand pointed out in his presentation, the Internet is not so much an information superhighway as an ocean of incoherent data. Help will have to come from at least one of the players in the game.

We need to document our work: our encoded texts must tell us where they came from, and provide standardized information about the circumstances of their creation in their headers or elsewhere. In this area, we are making progress. The revised TEI guidelines and the CETH cataloging guidelines are in the press. The Library of Congress is being helpful.

Maurice J. Friedman, the director of the Westchester Public Library and a former colleague of mine at Columbia, likes to say that librarianship isn't all glamour; as Mr. Sperberg-McQueen pointed out, text encoding isn't all altruism. Some persons don't want to share their texts, or have used encoding protocols that severely limit or prevent the use of their texts by other researchers investigating other questions.

Whose standards will prevail? I sense a cautious optimism on the part of both Ms. Hockey and Mr. Sperberg-McQueen that the Text Encoding Initiative's advocacy of SGML is likely to succeed, and that we are making real progress in the development of national and international protocols that will discourage redundancy and encourage efficiency in text encoding.

The jury still seems to be out as regards our arrangement for digital imaging, but as Ms. Hockey points out, clearly the future will be with text and image together, even though we have just made a start in this direction, and most of us do not (at least yet) have the kind of hardware we are clearly going to need to handle the large files typical in graphic representation.

Meanwhile, at the lower end of the vineyard, there is Project Gutenberg, growing like a house afire, and no more concerned with

SGML than a skateboarder is concerned with walk/don't walk traffic signals.

The third conference theme on my list concerns the nature and future of our jobs and professions. As a whole, the speakers seem to share a genuine affection for librarians: a number (though by no means the majority) are, in fact, themselves librarians (or used to be). None of the speakers directly addressed the likely futures of libraries and librarians at any great length, though Ms. Hockey emphasized the role librarians have to play in documenting text encoding initiatives.

Anita Lowry, Mark Tyler Day, and John Price-Wilkin presented case studies of some of the imaginative ways in which libraries and their staffs are presently coping with the changes being visited on us by the electronic age. Admittedly, at Iowa, at Indiana University, and at the University of Virginia (UVa) alike, their operations are tiny, relative to the size of their institutions and the number of students they serve; and they serve—and can serve—only a small fraction of their potential users. But they will grow, and the wide-area textual analysis systems being developed by Mr. Price-Wilkin and others at UVa are already having an effect that spreads far beyond the walls of the Alderman Library's Electronic Text Center and its next-door neighbor down the hall, the Institute for Advanced Technology in the Humanities. His statement that the e-text initiatives at UVa have been done from internal resources and without external funding, should give hope—and an idea—to many persons in this audience.

Less immediately optimistic was Professor Marchand's estimate of the teachability of one academic department at the University of Illinois in particular and, by implication, a great many other departments in general: his advice to librarians is that they need to jawbone faculty members into an interest in the electronic environment. Robert Alun Jones suggests a middle way for academics: they should continue to concentrate on their own areas of research and teaching, without attempting to establish too deep an understanding of new tools and techniques that have become another area of specialized scholarship. Subject specialists in the humanities and social sciences will need to set up interdisciplinary collaborations, taking advantage of advanced information technologies while still remembering who they are.

The fourth conference theme on my list concerns one aspect or another of access. Speaker after speaker touched on the problems and opportunities necessarily associated with access to electronic resources. Ms. Jensen applies the brakes, giving us a sobering view of the realities of copyright law. Halfway through her presentation I was convinced that we would all end up in jail, as soon as copyright holders found out what we do at home, in ignorance or otherwise, as we busily play a game called "What I Want Copyright Law To Be." But she suggests

a sensible solution as an alternative to a replaying by publishers and librarians of the story of the gingham dog and the calico cat (which I will not quote because I cannot remember when Eugene Field died, but I believe it to have been less than 75 years ago). Users of electronic resources can co-exist with the owners and providers of those resources, if they are willing to give up their illusions about copyright and settle down to do the hard work necessary in building this (or any other) stable relationship.

Lorrie LeJeune gives us a level-headed assessment of the view from the scholarly publisher's office. The monograph printed on paper—that mainstay of scholarly publishing—is in its twilight years; scholarly publishers frequently cannot afford to publish monographs, and if they do publish them, scholarly libraries frequently cannot afford to buy them. Like the scholarly library, scholarly publishers are viewing their probably non-subsidized futures (or possible lack of) with interest; and (like scholarly libraries) scholarly publishers have been working hard to ensure a place for themselves in the electronic sun, partly because of their conviction that they add value to the work they publish. It may be true, Ms. LeJeune says, that electronic publishing is the comet and that publishers are the dinosaur; but scholarly publishers have the potential to become electronic safe havens, lending credibility to the works on their lists: and she predicts that credibility is going to become a major issue on the Internet.

The fifth and final conference theme on my list concerns the future of humanism in an electronic age. This theme was particularly well-served at the conference, and for a simple reason. Several of the speakers who discussed humanistic issues took the trouble to draft fully-realized completely-written out presentations (I think in particular of the papers by Professor Robert Alun Jones and of our keynote speaker, Jay David Bolter).

Unlike the other sessions of this conference, Mr. Bolter's speech was a public lecture, attended by a considerable number of persons who were neither registered for this conference nor planning to attend it. Some of them clearly viewed their electronic futures with alarm. Mr. Bolter began by suggesting that he was preaching to the converted: his audience already shared his belief (he suggested) that electronic arrangements were relevant to the study of texts. By the end of the evening, one was not so sure about this assessment: during the question-and-answer period after his formal remarks, a surprising number of questions seemed to be underpinned by the belief that a hypertext future was not likely to be a good thing after all.

At the center of Mr. Bolter's speech is his belief in the importance, in the future as much as in the past, of the use of text for the symbolic representation of ideas. The computer is part of that history of texts.

He reminds us that the history of written communication stretches a long way before the coming of the printing press, and he draws parallels between the pre- and post-Gutenbergian worlds: copyists and annotators of texts during the manuscript period tended to view their base texts with considerably greater flexibility than has been the case since the printing press exerted its fixing influence. Hypertext users have a similar, less formal relationship with their texts. Where we tended to have fixity, in hypertext we have fluidity; where we tended to have strong authorial control (or author/editor/publisher control), in hypertext we have dispersed control. Once we recognize that hypertext is the natural way to write, copyright is going to come under great pressure, as the present frenzy of attempted copyright regulation suggests. Copyright is, indeed, incompatible with hypertext. Society may have to evolve other means of rewarding authorship besides payments made on a basis of copyright possession—means which have existed in the past, for instance during the period of the manuscript book, long before copyright emerged as an important part of text distribution.

Mr. Bolter closed his lecture with what he called a digression on the differences between the technology of writing and the technology of allusion. The original use to which computers were put was numerical, but soon enough this use expanded to include text. Now we must add graphic representation to this list. In dealing with computer graphics we are not dealing with symbolic structures but with perceptual matters. Computer graphics can offer a version of reality itself, and it can do it in three dimensions, as well. This new virtual reality allows the user to occupy changing points of view, and there is the real possibility that the user will confuse virtual reality with actual experience.

Virtual reality can put users into an environment in which they are told that they are seeing the world from the point of view of a dinosaur, or from the point of view of a molecule—but wait, Mr. Bolter said: there is danger here. Knowing what a molecule is likely to do is dependent on a knowledge of mathematics and physics; it is utterly incoherent to ask what it is like to be a molecule. Graphic representation finally cannot substitute for symbolic representation, any more than a prose passage can be adequately described by a picture. This is not to say that one cannot comment or enlarge informatively upon the other; but one cannot **replace** the other. We must stay in touch with symbolic representation if we are to stay in touch with 5000 years of human communication.

Mr. Bolter's speech, as it seemed to me, was nicely-constructed and well-delivered. But he shouldn't have mentioned the dinosaur, and he shouldn't have mentioned the molecule. We have all seen what happened to Mr. Bolter on Sunday night happen in a class. The instructor mentions something in passing—just in passing—that for some reason (who

knows why?) engages the fascinated attention of the class. A fugue of unstoppable questions and comments erupts, questions and comments which are neither germane to the matter at hand nor relevant to much of anything else. One silly question (or silly comment disguised as a silly question) prompts another and even sillier one. Other persons (including some who would normally know better) join the dance. The result is...well, more amusing for the speaker afterwards than at the time it happens.

During the question-and-answer period after Mr. Bolter's speech on Sunday, there was brisk discussion of the molecule in theory and practice. Can one truly see the world from the molecule's point of view? Does the molecule have a point of view? Regardless of whether or not the molecule has a point of view, should we limit the human imagination by refusing to try to imagine the molecule's point of view? There were a number of ariettas regarding the extent to which a fixed (i.e., printed) text is really fixed that suggested that some members of the audience, *pace* Mr. Bolter, had indeed learned how to see things from the dinosaur's point of view. As a whole, this was a discussion that would have made no mother proud, and I came away from Mr. Bolter's keynote address thinking: speaker 1, audience 0.

The challenge in setting up a conference like this one is not only in getting the right speakers but also in getting the right audience; the importance of the second part of the equation—getting the right audience—is not always recognized. It is by far the harder half of the equation to get to balance.

Certain aspects of the pedagogy of this conference perplex me. Surely the most efficient method for imparting factual information remains the written, not the spoken, word? I take the chief purpose of conferences like this one is to convey ideas too hot, for one reason or another, for the printed word to handle. We should concern ourselves on these occasions with an exchange of values, not the conveying of facts. Thus I relished Michael Hart's presentation; he had values to convey, and he conveyed them. And I very much enjoyed listening to Professor Marchand, who is not afraid to call a spade a spade. But I did feel rather abused when I had to listen to certain speakers filigree their way down a row of bullet points on their overhead projector transparencies. If the ideas with which a conference is concerned are too complicated for the children to understand without the use of such lists, then the conference should be limited to adults. The reverse is also true: if the conference is to proceed at a basic level, then the grownups should be encouraged to go elsewhere.

How well have we done here, as an audience, over the past few days? Well, despite Sunday, pretty well, I think. I wish we had been



better, but we did our best, and I hope the speakers do not think that they entirely wasted their time.

As a coda, I would like to return to the title of this talk: "The Materiality of the Book: Another Turn of the Screw." At the University of Virginia this semester, I am teaching a course in the graduate English department called, "The Materiality of the Book." The course concerns itself with some of the ways that the physical presentation of a text can affect its contents and the reader's reactions to those contents. One of our conclusions is that the physical manifestations of those texts can survive an astonishing amount of abuse by their copy editors, printers, publishers, licensers, censors, reviewers, reprinters, emendators, abridgers, adapters, and readers—the physical embodiments of these texts can even successfully withstand later onslaughts by their own authors: it is very hard to destroy every copy of a printed book.

Aristotle would have been perplexed if someone had shown him a manuscript codex copy of his own works, since the codex is a mode of presentation developed only several centuries after his death. He would have been even more perplexed by a pile of printed copies of his works, and no doubt struck almost speechless by Perseus. But those of Aristotle's texts that survived into the 10th century AD or so survive still, and are likely to continue to do so: no hypertext is going to destroy the originals, no matter how many overlays we or succeeding generations plaster over them. As commentators, hypertext creators are in any event still amateurs by comparison to some of Aristotle's medieval and Renaissance commentators. His text survived them, and it will survive us.

Of course we can assume joint authorship status with Aristotle in hypertext. And we can do better than that. We can warn Romeo in time that Juliet isn't really dead. Little Nell no longer needs to die. We can give Genesis itself a happy hypertext ending: everybody can come down from the Tower of Babel speaking flawless SGML. But I once had a sign in my office, put there for the benefit of my very able but very headstrong assistant. The sign read: Of course I can do it. The question is, do I want to.

I am not so sure about the status of the author in the future, but I have considerable confidence in the durability of the authors of the past, and thus of the survival of the values they represent. *Littera scripta manet*; and if Horace didn't say that, then he should have; and in my hypertext, maybe he will.

