Scholarly Communications

A Perspective from The Andrew W. Mellon Foundation

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The "rattle of pebbles"

Jason Epstein, former editor at Random House, quotes Yeats' poem, "The 19 Century and After:"

> Though the great song return no more
> There's keen delight in what we have:
> The rattle of pebbles on the shore,
> Under the receding wave.

-- NY Review of Books, 4/27/00

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"Works of lasting value"

- Epstein draws on this elegy about the emergence from the turmoil of war to speculate about the future of publishing in the wake of the "receding wave" of mega-mergers and the force of advanced networked information technologies
- Utopian visions of information anytime and anywhere, he says, are not sufficient to animate the "rattling pebbles"
- Utopia will remain elusive because discourse in the emerging global village will likely be as "undisciplined, polymorphous and polyglot" as current forms of discourse
- Clear-headed pragmatism thus must anchor utopian romance
- Mission-driven approaches are needed, he says, that aim emerging technologies at the creation and dissemination of "works of lasting value"

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"A coarsening of sensibility"

- The wave of change sweeping over publishing is also affecting universities and colleges, scholars, scholarly societies, libraries, museums, and archives
- Every week seems to bring a new for-profit consortium aimed at staking out "first-mover advantage" in what is imagined to be a vast emerging market for higher education
- The headlong rush may yield huge benefits for society
- But one university president has warned that the quest for profit in academia is resulting in a rapid "coarsening of sensibility" toward the academic mission
- Others observe mission drift as universities and colleges behave like banks or manufacturing companies with trade secrets to protect, creating competition and distrust that restrict the flow of information among scholars and staff

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Digitally-enabled scholarship

- As venture capital is spent out and as dot.com bubbles burst one after another, what works of lasting value (other than consumer mailing lists) will be left rattling from these investments in networked information?
- Lasting value in terms of the academic missions of research, teaching, and learning will likely adhere to those works that advance scholarship in digitally-enabled ways:
  - Digital primary sources that open up and support new forms of scholarship in the arts and sciences
  - The results of scholarship based on these resources
  - An economy of services – including the backend administration – that supports the long-term stewardship of primary and secondary sources and their scholarly use

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Foundation support

Supporting digitally-enabled scholarship is one part of a larger commitment of the Mellon Foundation to an holistic view of the scholarly mission, in which it provides "end-to-end" support for:

- Preserving the objects of scholarship, including digital objects, in libraries, museums, and archives, and new organizations such as JSTOR
- Improving the means of access, including through various advanced applications of technology
- The scholarship itself, through fellowships, endowments, and other institutional support
- The publication processes including electronic books and serials, as well as portal and gateway services as "second-generation" electronic publications

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Specific Foundation initiatives

- Experiments in producing and archiving e-publications
- Projects to apply harvesting, indexing, recommender and other technologies for improving library catalogs and other access methods
- Collaborative development of scholarly subject portals, institutional information systems, and courseware tools
- Cooperative programs involving librarians, faculty, and IT staff for improving their own skills and the research skills of students
- Efforts to better integrate special collections and other assets – what Michigan Provost Nancy Cantor calls institutional "public goods" – into research and teaching

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Special collections

- Academic and cultural institutions are arguably most distinguished, apart from their personnel, by their special collections: rare books, foreign language materials, manuscript and archive collections, paintings and other cultural objects, etc.
- Scholars especially value these collections as primary sources and also the foresight of those charged to acquire and retain them, often against future unspecified needs
- Note that there is very little activity devoted now to the systematic collection of born-digital primary sources
- Moreover, efforts to digitize existing special collections have highlighted all sorts of vexing access-related issues

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Digitization and special collections

- Digitizing projects have exposed how poorly controlled these materials are and how primitive the tools are for working with them: there is a great need for technical and process innovation in handling these collections
- Prevailing approaches -- "greatest hits" and "field of dreams" -- reveal how unsophisticated many libraries are in valuing collections against scholarly (and other) needs and in using such assessments to assign access priorities
- Rhetoric about "improving access" has obscured the need for (and costs of) hard-nosed efforts to build well-ordered, sustainable digital spaces that protect intellectual property, enable materials to be brought together, and facilitate scholarship

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Consider visual resources

- Overall, efforts to digitize visual materials as primary sources for scholarly purposes are relatively small-scale, generally uncoordinated, and poorly distributed
- They have placed insufficient emphasis on intellectual coherence and other qualities that are generally regarded as essential to research and teaching
- Some projects have highlighted ways to improve these qualities for teaching (DLF's Academic Image Cooperative)
- What would it take to generate and sustain research quality visual collections online?
  - Museum of Modern Art (MoMA) design collection
  - Dunhuang grotto paintings

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Dunhuang cave paintings

- Dunhuang is an oasis town in the Gobi desert in Western China along the Silk Road
  - Hand-carved cave shrines are richly decorated with murals depicting stories and icons of Buddhist theology
  - Merchants and politicians seeking religious protection patronized the Buddhist monks, who created the art
  - Sacred and secular texts, drawings, and paintings were stored in a library, sealed off in 1000 against invaders
- The library cave was discovered in 1900, attracting the attention of foreign scholars and adventurers, who removed most of the library materials, and deposited them in museums and libraries around the world

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The Mellon International Dunhuang Archive

- With the support of the Foundation, Sarah Fraser, a scholar at Northwestern, is documenting the cave art using QTVR and full-coverage digital photography stitched together from a mosaic of overlapping shots
- The Foundation is also developing cooperative projects in the US, UK, France, and India to produce high quality digitized versions of the sacred and secular texts, drawings and other related materials removed from the library cave
- The Dunhuang Archive will virtually reunite the cave art with materials that are now dispersed
- Its creation requires detailed agreements across national boundaries on intellectual property and distribution

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The quality is eye-popping

- The stitched-together images are c. 500 MB, exposing details, including underdrawings, at heights and with illumination, not visible even to a visitor in the caves
- The scholar will be able virtually to remove statuary and altars that obscure viewing of fully painted walls, and to link scenes to preliminary drawings and to the sacred texts they illustrate, and to the records of patronage
- It will enable scholarship in many disciplines (art and social history, religious studies, archaeology) that could not have been accomplished otherwise

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Demonstration of the prototype

[A demonstration will illustrate the digitized cave art that derives from both coverage and QuickTime Virtual Reality (QTVR) photography. It will also illustrate the way that the dispersed materials can be reconnected to cave art for research and teaching purposes]

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Need for an "ArtStor"?

- The experience with the MoMA, and Dunhuang projects raises the question: are the conditions right for a resource like JSTOR, but for visual primary sources?
  - Driven by scholarly demand and built around clusters aimed primarily at teaching needs (design, Asian art) and complemented by special research-oriented sources of deep and rich content (MoMA, Dunhuang).
  - Creating an economy of scale that permits scholars to ask and answer questions not otherwise possible
  - Serving as an enduring resource of digitized primary sources on which secondary scholarly work can be built

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Moving beyond electronic incunabula?

- When scholarship incorporates and refers online to digitized primary sources, like the Dunhuang Archive, what special forms will it take?
- Robert Darnton has suggested a pyramid model to describe the "new age of the book," but there are other models, and emerging e-books and journals must be regarded as the incunabula, the early tracings, of electronic publishing
- The next generation of work must build on these early steps and develop an economy of repositories and services (with business models and legal support) appropriate to the demands of scholarship in the digital age

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Scholarly demand

As the supply of digitally-enabled primary and secondary sources grows, it is not hard to imagine the kinds of services that scholars will demand of them

- Do the sources support the use of up-to-date search and discovery tools that employ new metadata technologies?
- How do they facilitate the basic elements of scholarship: comparison, analysis, criticism, and synthesis?
- How do they support persistent reference for scholars to build reliably on these sources in future scholarship?
- How is primary evidence effectively joined across institutional and disciplinary boundaries yet separated from scholarly interpretation?

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Technical research issues

- The Dunhuang archive illustrates the urgent need (and provides a testbed) for sophisticated and imaginative research on
  - Representing 3-dimensional spaces in relation to 2-dimensional art and to textual materials of various kinds
  - Developing sophisticated visually-based discovery, recognition and navigation tools
  - Creating powerful multi-lingual tools for character recognition, translation and cataloging, commentary and other forms of scholarly communication
- Perhaps, most importantly, it suggests the need for much more sophisticated approaches to intellectual property rights

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Intellectual property regime

- Simple frameworks for dealing with intellectual property rights posed in terms of limiting or granting fair use or paying for information and getting it for free are plainly inadequate, especially when cultural heritage is involved
- Too many projects and researchers aim too low, settling for low quality access in the form of thumbnails as a way of skirting intellectual property issues, rather than addressing copyright and ownership issues directly so that the high quality that scholars demand can be provided
- And researchers who "assume away" the complexities so that they can "get on with their research" in the short term often imperil their work in the long-term: the problems of limited and unauthorized permissions

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Creating a well-ordered space

- In his recent book, *Code*, Lawrence Lessig makes it clear that amidst the apparent anarchy of the Internet, it is possible to create more or less well-ordered spaces for various kinds of activities
- As resources are put online and scholars generate new works, how can intellectual property be protected in well-ordered spaces designed for scholarly activity?
- When it applies, fair use is certainly a part of the answer
- There is another, often neglected part of creating well-ordered spaces for non-profit, scholarly uses of materials (including digital library research uses): creating licenses and agreements among owners, providers, and users

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Creating agreements

- The Foundation has been experimenting with the terms needed to protect and foster an intellectual commons for scholarly and educational uses
  - The content owner retains full ownership rights for commercial uses
  - The provider obtains a non-exclusive, limited license for educational uses;
  - The provider commits to provide a well-regulated (i.e. licensed) environment for end-users
- Much more research is needed -- at the leading edges of technical development not as add-ons, afterthoughts, or relegated to someone else -- about how to design, shape, and master these well-ordered spaces

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Opportunities and challenges

- The adventure of creating a viable economy of digitally-enabled repositories and services requires much creativity, but above all an unswerving focus on the scholarly mission
- Institutions that participate actively in this adventure are becoming "laboratories for the liberal arts and sciences" in vital ways that some fear have been irretrievably lost -- and special collections as primary sources for teaching and research are central to the enterprise
- Such institutions are revitalized as virtual and physical spaces where researchers, teachers, and students come together in shared enthusiasm -- rattling pebbles against a receding wave
- The key question for us at this meeting is how the projects we will explore can best contribute to that enthusiasm

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