"ALL THAT GLITTERS":
PROSPECTING FOR INFORMATION
IN THE CHANGING LIBRARY WORLD

Edited by

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"All That Glitters": Prospecting for Information in the Changing Library World

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INTRODUCTION:
THE SIREN'S SONG

Steven Vincent and Sue K. Norman

The impetus for this book on evaluation in the library context springs from a poster session presented at the 1997 American Library Association Conference in San Francisco. Entitled, "Siren Song: The Lure of Technology and the Betrayal of Reality," the poster session focussed on teaching the need to evaluate information found on the Internet. It attracted a fair amount of attention at the conference, including several requests for articles on the subject from library journals. Since the presenters were neither the first nor the foremost to explore this area, the offer from JAI Press to edit a book seemed the most appealing offer, since it afforded us the opportunity to call upon several of the pioneers in Web source evaluation. The result is this collection of contributions from individuals who present their best thinking on the subject.

We also intended that the book should have a more practical side, much like a poster session. Therefore, the end of this volume contains exercises used by librarians in teaching Web evaluation in various settings.

THE FIVE LAWS

The framework for our poster session, and therefore this book, was an article by Michael Gorman in which he updated the five traditional laws

of library service (1995). We believe that these new laws are particularly relevant to new technologies appearing in libraries.

The first of the new laws is "Libraries Serve Humanity." In library reference work, to serve is to answer the library user's question; but to do so effectively, it is necessary to find out what the real, often unasked question is. The questions we field are often couched in terms of technology ("How do I get on the Internet?") but the need is still for appropriate information. "Serving humanity" does not necessarily mean fulfilling individual cravings. We also have a duty to instruct, to direct library users to appropriate sources of information, and to get them to look beyond the often beguiling face of new technologies, such as the Web.

Gorman's Second Law is "Respect All Forms by Which Knowledge is Communicated." We should not be too hasty to discard older formats and embrace the new. Electronic formats are preferred for multimedia approaches, integrating text, images, and sound. They are also effective for rapid delivery of brief information. Print, however, is best for long-term storage of in-depth and detailed information. Electronic archives of book-length text may be a long way off, with notable exceptions such as Project Gutenberg. Storage and access requirements of many electronic databases also necessitate archiving older records in non-electronic formats, like microfilm or print. Many database providers keep only a certain number of years accessible in electronic format. Printed material is still preferred for reading, also. Web terminals in our libraries have actually increased the consumption of paper.

The third law is "Use Technology Intelligently to Enhance Service." As stated above, electronic formats are most effective for rapid delivery of current and brief information. However, electronic formats make it more difficult to evaluate information sources, since many of the traditional evaluation criteria (author, publisher, date, and coverage) are either absent or difficult to spot.

On the other hand, technology enhances the appeal of more traditional tools. Full-text databases and electronic indexing and abstracting tools are preferred over print sources of the same information. Electronic tools may even make traditional sources of information more widely available. In Georgia, for example, Project GALILEO makes electronic indexing available even in smaller libraries.

Gorman's Fourth Law tells us to "Protect Free Access to Knowledge." The Internet isn't free, even though it often appears to be. Many

of the costs aren't apparent to the user, however. It always costs *something* to post information on the Internet, meaning that (a) some information is available only for a fee, and (b) some apparently free information is actually subsidized by advertising or interest groups, and therefore, slanted. Since the costs are hidden to the users, this means that they may not be aware of the slant.

Not everyone can afford the technology required to retrieve information from the Web. Not everyone owns a computer or has an Internet account. Libraries aim to make information freely available to all. Those who would publish on the Web face the same dilemma: although Web publishing is less expensive than traditional printing, not everyone has access to the technology or the skill base to make use of this medium. Also, since there is no traditional publishing apparatus or indexes to the Web, worthwhile information published on the Internet may not be received by the audience for whom it is intended.

Gorman's final law is "Honor the Past and Create the Future." This suggests that traditional and electronic formats need to complement each other. Our print-based libraries will not disappear in the near future, although there is a danger that policymakers may not recognize this and jeopardize the support for libraries. Libraries need to integrate newer technologies to promote the timely delivery of information.

According to Gorman's new laws, "Each new means of communication enhances and supplements all previous means" (1995, p. 784) Although the popular view is that each significant technological advance initiates a revolution that sweeps away obsolete technologies, the truth is that older technologies are never superseded in a single stroke. Technological revolutions may take decades, even centuries, before the superseded technologies are finally replaced. The history of an earlier information revolution illustrates this point: although parchment was introduced into Europe in the third century, it was not immediately accepted as the writing material of choice, and papyrus was still occasionally used as late as the twelfth century (Papyrus).

Is it possible that we are about to replace printed text on paper with electronic media? The answer is surely no, but a popular view prevails, even among a number of scholars, that we will see the death of the traditional book and library within a few years. In fact, the demise of the library has been predicted since the introduction of microform 70 years ago.

We need to recognize that each form of communication has different strengths which it brings to the task of disseminating or preserving knowledge. Among the strengths of print is its permanency—at least in comparison with the transient nature of the Web—as a storage medium. Print is also a better medium for accumulated knowledge, such as is found in books and encyclopedias. Since sustained reading at a computer terminal is uncomfortable at best, causing eye-strain and physical distress, paper is also a superior means of transmitting large amounts of information. When something useful is found in an online service, the Internet, or a CD-ROM, usually the first action is to print it for later reading under better conditions.

In contrast, the Internet expands the kind and amount of information accessible to the library user. Some kinds of information found on the Internet, such as online catalogs with product descriptions, are not usually found in libraries. The Internet also excels in the delivery of non-textual information. Images and sound are easily transmitted via the Internet and viewed or played from within a Web browser. The development of cross-platform multimedia standards, such as QuickTime, has even made it possible to deliver animation and sound over the Internet, something impossible to do with paper.

Although paper is an excellent means of reproducing color graphics, its publication is usually time-consuming and expensive. Internet images are delivered instantly, usually at no apparent cost to the user. Since the Internet is a fairly low-cost publishing medium, it is possible for individuals, not-for-profit organizations, and small businesses to become publishers. Many government agencies which are required to make the information they gather available to the public find the Internet an inexpensive way to meet their obligations. The down side of this is that while the Internet is a low-cost publishing medium, for many libraries the cost of the hardware, software, and computer expertise needed to provide access to this cheaply-published information remains a major expense. The government agencies have met their obligation to provide the information on the technical level only.

Since it is so inexpensive to publish on the Web, and it is so easy to update information, the Internet is ideal for delivery of timely information which changes frequently. The latest sports scores, stock prices, news headlines, and weather are the type of information well suited for the Web. However, although statistics and current awareness items are ideal for this venue, critical analyses of the content of Web-based infor-

mation appear only in more traditional publishing formats, most often in printed scholarly journals.

Another attractive feature of the Internet is that it is already in electronic format. This makes it easy to download the information and massage it with a word processor. It also means that the indexing, searching, and retrieval of electronic information is superior to printed counterparts. Many libraries with access to electronic periodical indexing are canceling subscriptions to print equivalents. Others, however, are waiting to see how this volatile issue will sort out, and, if the electronic versions of these journals will contain *everything* the print version does. There have been many comparisons of the content of print and electronic versions of journals, and in these comparisons, the electronic version often comes up lacking. Letters to the editor are one example. Although these letters may not seem like major deletions, they are essential when documenting the conversations between scholars. If many libraries fail to hold the print issues, the conversations will be harder to follow, and many inexperienced researchers may not even realize that they are taking place.

THE REVOLUTION IN LIBRARY INSTRUCTION

Change has become a constant in the library world, but is it actually true that the more things change, the more they stay the same? Helping students perform their research efficiently and effectively has always been a priority with librarians, and the information revolution has given this assistance new importance, especially considering the manner in which students and faculty alike are using the new resources available to them.

Sir William Osler, 1849-1919, describes four types of readers in his *Aphorisms* (1950):

> An old writer says that there are four sorts of readers: Sponges, which attract all without distinguishing; Howre-glasses, which receive and powre out as fast; Bagges, which retain the degrees of the spices and let the wine escape; and SIEVES, which retain the best only. A man wastes a great many years before he reaches the "sieve" stage.

Librarians and faculty are becoming aware that with the seemingly endless supply of information available to campuses, particularly through the Internet and World Wide Web, the students are behaving like sponges, eagerly absorbing anything with which they come in contact.

Although the need to help students evaluate the information found during the research process has grown more critical, the evaluation process is often slighted—if not totally ignored—in an instruction session. Faculty assume that students assess their research automatically, but don't realize that evaluation is an acquired skill. Therefore, librarians need to place increased stress on evaluation methods and skills, placing it at the top of their instruction agenda by giving it primary emphasis in an instruction session, rather than a brief mention at the end or skipping it altogether.

Several authors have noted that students are generally uncritical about information they find with the computer. Martorana and Doyle (1996, p. 186) call this "the seduction factor": students prefer to use the computer whether or not more relevant print resources are available and they seldom question the results of their search or their search strategy. Oberman (1991, p. 108) believes that online resources tend to give students a false sense of confidence in their ability to use them effectively. The result too often is that students, assigned to find scholarly articles, use a Yahoo! or Hotbot to find Web pages. They may not fully understand how to use the search engine they select, rarely recognize that scholarly articles are almost never found on Web pages, and never question what they find.

Oberman (1991, p. 113) suggests that since students see the computer as having all the answers, they see no need to understand the relationship between their information needs and the online resources at their disposal. They view the computer as the sole source of information and haven't developed the cognitive skills to select an appropriate database or Internet search tool to assure that they will find the information they require. Unfortunately, many faculty also have the same perception of the online environment. How often do students come to the library with an assignment to find an article on an overly broad topic such as "databases," or "to use the computer to find three articles"?

As Martorana and Doyle (1996, p. 185*ff*) point out, the computer itself creates obstacles to teaching critical thinking skills. In addition to the "seduction factor," they identify two other factors which impede the learning process. "Noise distraction" is caused by students' varying degrees of comfort with the computer. Those with limited computer exposure are intimidated by the hardware, while those with more expertise wander off in their own directions. The "confusion factor" is essentially the same condition identified by Oberman (1991, p. 107) as the

"cereal syndrome": students are overwhelmed by the number of choices available. When faced with a bewildering selection of information resources, most fall back on one or two with which they have become comfortable, rather than attempt to find the one best suited to their information need.

For good or ill, therefore, the library is drawing closer to the computer lab. Rabinowitz (1997, p. 19) has noted that students too often assume that all relevant information on a topic may be found on the Internet. More alarmingly, many faculty appear to share this misconception. Combined with the library's increasing reliance on online catalogs, CD-ROM's, and other electronic resources, many faculty expect library instruction to focus on tool use, rather than on critical thinking and evaluating information. As Oberman (1991, p. 114) suggests, although the cognitive skills needed to perform research effectively have remained essentially the same, our teaching methods must change.

The traditional "show and tell" presentation in which librarians brought samples of print resources for the students to see is no longer a valid form of instruction. Since the ease of Web access can cause faculty and student alike to think that they don't require instruction, the librarian must find more dynamic ways to alert their constituents to the new resources available, how to use them, and most importantly, how to evaluate what they find when they use them. Hands-on instruction in computer-equipped library classrooms has almost become a necessity today. Since students gravitate to the Web, using the Web itself for instruction catches the student's interest at the outset. Many libraries now maintain Web pages with evaluation tips and exercises or lists of recommended Internet resources. (URL's for some sites and examples of exercises librarians have used in classes and in collaboration with faculty to teach evaluation skills are listed in the exercises at the end of the book.)

What is needed in classes is to stress access to information, rather than tool use. Rather than teaching how to use the computer to find information, instruction sessions need to emphasize two points: the need to evaluate information, wherever found, and how to pick a research tool appropriate to the information needed. Some areas in which students need guidance are whether to use print or online sources, whether they need to consult a periodical index or search the Web, how to choose an appropriate online database, and when searching the Internet, how to select an appropriate search tool.

Further, students need to be made aware that the research process is not an isolated sequence of steps—collecting information, reading, then writing a paper—but a cyclical process. Stating a question, gathering information, reading, and evaluating cannot be carried out independently of each other and may be repeated several times during the course of a research project. Evaluation may force a reexamination of the research question, necessitating further information gathering.

USE TECHNOLOGY INTELLIGENTLY

Gorman's Third Law directs us to "use technology intelligently to enhance service." (1995, p. 785) This means integrating new technologies into existing programs and services, and using them to seek solutions to problems. Although librarians have always been eager to embrace new technologies, whether parchment or PC, we have at times been too eager, seeking not answers, but applications of new technology. Each form of communication has an appropriate use, excelling either at preserving, retrieving, or disseminating information. This is what instruction sessions ought to focus on.

One example of the type of new instructional technology needed is employed by Martorana and Doyle (1996) in their classes at the University of California, Santa Barbara. They find that team teaching, assigning group tasks, and working with a variety of media successfully combat distraction, confusion, and seduction in an online classroom. Having an additional instructor in the classroom allows them to monitor student activities more closely, keeping those prone to wander on track, to provide more individualized instruction to those who need it, and to mix teaching and presentation styles, better holding the attention of the students. Group assignments allow students to pool their expertise and explore divergent paths, while bridging the gap between novice and experienced computer users. Using a variety of media holds students' interest and appeals to a variety of learning styles.

Martorana and Doyle introduce critical thinking skills by using a process-oriented approach, called "tool analysis," in which students learn to examine research tools critically. By learning to identify the scope of a research tool, including the subjects, time periods, geographical locations, or populations it covers, students are taught to determine if it is appropriate to their research need. By studying records from the tool,

students learn to identify access points and the most effective way of searching it.

REFERENCES

Gorman, Michael. 1995. "Five New Laws of Librarianship." *American Libraries*: 784-785.

Martorana, Janet, and Carol D. Doyle. 1996. "Computers On, Critical Thinking Off: Challenges of Teaching in the Electronic Environment." *Research Strategies* 14:184-91.

Oberman, Cerise. 1991. "Avoiding the Cereal Syndrome, or Critical Thinking in the Electronic Environment." In *Information for a New Age: Redefining the Librarian.* Englewood, CO: Libraries Unlimited, 1995. Originally published in *Library Trends* 39 (3):189-202.

Osler, William, Robert Bennett Bean, and William Bennett Bean. 1950. *Aphorisms.* New York: H. Schuman.

Papyrus. In Britannica Online: http://www.eb.com/:80/cgi-bin/g?DocF=micro/451/4.html.

Rabinowitz, Celia. 1997. "Gathering Information: How to Get There from Here." *CRL News* 58 (1):19-20.

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