
The road not taken*

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The annual Janet Doe Lecture was established in 1966 to honor Janet Doe, emerita librarian of the New York Academy of Medicine. The lecture focuses on either the history or philosophy of health sciences librarianship. This lecture addresses three fundamental values of the field, highlighting basic beliefs of the profession that are at risk: privacy, intellectual property rights, and access to quality information. It calls upon readers to make the everyday choices required to keep the value system of health sciences librarianship in place. Robert Frost's poignant poem "The Road Not Taken" provides the metaphor for examining choices in an information economy.

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

Robert Frost [1]

These charming pastoral words evoke a not so subtle hint at the importance of choices made and opportunities unexplored. When Frost wrote these words in Vermont more than a century ago, he had no intima-

tion of the myriad choices that overwhelm our senses today. The rhythm of the crafted stone fences of New England marked the boundaries of the land. The disruption of the interstate highway with its unrelenting straight lines had not yet cleaved the fences one from another. The stillness of the woods was not yet pierced by jet-propelled aircraft and, yet, Robert Frost knew then of roads not taken.

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We, too, know of choices forced upon us with dizzying pace, choices made with adrenaline and exhilaration, agonizingly belabored, or often ignored. Choices surrounding our fundamental beliefs in an age of disruptive technologies and value-changing economies are the theme of this paper. Walk down a path with me that examines choices around privacy, intellectual property rights, and access to quality information, core values that medical librarians support and rely upon every day of the year.

THE CURRENT WORLD VIEW

Let us start by taking a look at the world in which we live. The world is not the same as it was twenty or even ten years ago. Indeed, the advent of the Web and the explosion of the Internet occurred only seven years ago, bringing new ways of accessing all kinds of information. Society has gained alternative methods of disseminating knowledge and of publishing, bringing us closer to the creation of a true global village.

Spurred by new technologies, the economic models of developed countries made a quantum leap into the

* The Janet Doe Lecture on the history or philosophy of medical librarianship, presented at the One Hundredth Annual Meeting, Medical Library Association, Vancouver, British Columbia, on May 8, 2000. 1999 Janet Doe Lecturer Sherrilynn S. Fuller, Ph.D., director, Health Sciences Libraries, and head, Division of Biomedical Informatics, School of Medicine, University of Washington, Seattle, Washington, gave the introduction. Lucretia W. McClure, Rochester, New York, presented the lecture.

information age. Information and knowledge took on a new value: information moved from the domain of libraries, becoming a commodity—bartered, bought, and sold in the broader marketplace of Wall Street and Silicon Valley. Marketing analysts recognized the power of new computer tools to segregate markets and sell products and knowledge to targeted groups of potential buyers. Content, the very content that we have so carefully managed in our libraries for centuries, took on a new importance. It became the gold of the new economy.

In a speech in September 1999, Alan Greenspan, chair of the Federal Reserve Board, told the Gerald R. Ford Foundation and a university audience,

The quintessential manifestations of America's industrial might earlier this century—large steel mills, auto assembly plants, petrochemical complexes and skyscrapers—have been replaced by a gross domestic product that has been downsized as ideas have replaced physical bulk and physical efforts as creators of value. Today's economic value is best symbolized by exceedingly complex, miniaturized, integrated circuits and the ideas—the software that utilizes them. Most of what we currently perceive as wealth is intellectual and impalpable [2].

Greenspan argued that technology generated macroeconomic value not only through technology product sales but also as an aid in the enterprisewide process of getting the right information to the right person at the right time.

This new, commercialized way of thinking about knowledge and information raises serious questions about longstanding values held by librarians regarding access to and management and preservation of knowledge resources. When information is recognized as a commodity, the stakes in ownership are raised dramatically. Today's marketplace is boisterous with new players and commercial interests vying for a voice at the table, fighting to make their "rights" central. Today's headlines scream these shifts:

■ "Biotechnology, Genomics Stocks Plunge on Fear U.S. May Curb Data Sales" (*Wall Street Journal*, March 15, 2000). A big sell off occurred after U.S. President Bill Clinton and Great Britain's Prime Minister Tony Blair issued a joint statement saying that raw gene-sequence information should be made openly available to scientists everywhere. Investors reacted by punishing the stocks of companies that mined gene data fearing that the Clinton-Blair statement would prevent biotech entrepreneurs from developing proprietary gene-based products [3].

■ "AMA, Beware of Perils of the Web" (*Boston Globe*, October 30, 1999). In an op-ed piece, Jerome Kassirer, former editor of the *New England Journal of Medicine*, warns, "introducing accurate, unbiased medical content on the Web requires considerable expertise by writers and editors who rigorously verify every

word." He adds that it is "tedious and expensive and editorial opinions can easily be contaminated by bias. It is much too easy to blur editorial content and advertising on the Web" [4].

■ "An Embarrassment of Indexes: Magazines Have Decided to License Their Stock Indexes in the Name of Profit and Publicity" (*Newsweek*, March 6, 2000). *Fortune Magazine*, *Forbes*, and *Wired* have licensed their stock indexes, giving their journals' blessings on the stocks listed in the indexes. These publications have begun the slide down the slippery slope of the ethical dilemma of sales versus journalistic objectivity, with articles "cheering on" the indexed stocks. The reader's trust is diminished [5].

■ "New Profits for Professors: Universities Grapple with New Ways to Turn Ideas into Cash" (*Newsweek*, February 28, 2000). Universities such as Columbia are going retail—on the Web. Columbia plans to go beyond the typical .edu model that provides free sites listing courses and research interests. Instead, it will offer the expertise of its faculty on a new for-profit Website that will be spun off as an independent company.

"Some faculty members find the trend worrisome: is a professor who stands to profit from his or her research as credible as one who does not? Will universities provide more support to researchers working in profitable fields than to scholars toiling in more musty areas?" [6]

Beneath the glaring headlines of change, there are deeper issues adrift; issues that lie beneath the surface, iceberg like, relatively invisible, rising periodically to public discourse [7]. These are insidious issues that challenge our own value systems and missions.

My focus is on three of these fundamental issues:

- the right to privacy
- intellectual property rights
- access to quality information

These are underlying values in this country, and librarians have been firm in their support of these values. Philosophically, our library institutions would be gutted if these rights were to disappear. Our lobbying efforts, our value statements, and our daily practices all confirm these rights. What, then, is the problem?

THE RIGHT TO PRIVACY

The library profession has long upheld the principle of privacy for our users, and librarians have fought for that principle through innumerable legal challenges. An example that comes to mind is the battle with the Federal Bureau of Investigation (FBI) for information regarding users' circulation records for books about bomb making [8, 9]. Librarians have won that fight and, in winning, assured the individuals that their queries and transactions are confidential, and their

personal information is sacred. Each one of us has held confidential information shared by our users. We cannot imagine divulging the content of our professional conversations.

While we uphold the standard of privacy, there are and always have been forces afoot that would reduce our personal privacy in dramatic ways. Many of us have looked up our own personal profile on the Web only to discover how much is public information. Not only one's address, phone number, and social security number, but specifics about financial records are also accessible. Use of a grocery store discount card records brand preferences and eating habits and targets the individual for focused marketing by the food industry. We all know that the motor vehicle departments in most states sell personal information to commercial interests.

The invasion of our privacy is getting more invasive. Enter "worms" and "cookies."

Lawrence Lessig, the author of a recent work entitled *Code and Other Laws of Cyberspace*, provides a vignette about worms that sniff. Here is a taste of his thinking:

A worm is a bit of computer code that is spit out on the Net and works its way into the systems of vulnerable computers. It is not a "virus" because it doesn't attach itself to other programs and interfere with their operation. It is just a bit of extra code that does what the code writer says. The code could be harmless, simply sitting on someone's machine. Or it could be harmful, corrupting files or doing other damage that its author commands.

Imagine a worm designed to do good (at least in the minds of some). Imagine that the code writer is the FBI and that the FBI is looking for a particular document belonging to the National Security Agency (NSA). Suppose that this document is classified and illegal to possess without the proper clearance. Imagine that the worm propagates itself on the Net, finding its way onto hard disks wherever it can; once on a computer's hard disk it scans the entire disk. If it finds the NSA document, it sends a message back to the FBI saying as much. If it doesn't, it erases itself. Finally, assume that it can do all this without "interfering" with the operation of the machine. No one would know it was there; it would report back nothing except that the NSA document was on the hard disk.

Is the worm constitutional? This is a hard question that at first seems to have an easy answer. The worm is engaging in a government-initiated search of citizen's disks. There is no reasonable suspicion (as the law ordinarily requires) that the disk holds the document for which the government is searching. It is instead a generalized suspicionless search of private spaces by the government. From the standpoint of the Constitution—the Fourth Amendment in particular—you don't get any worse than that.

The fourth amendment was written against the background of just this sort of abuse. Kings George II and George III would give officers a "general warrant" authorizing them to search through private homes looking for evidence of a crime. No suspicion was needed before the officer ransacked

your house, but because he had a warrant, you were not able to sue the officer for trespass. The aim of the amendment was to require at least suspicion so that the burden of the search fell on a reasonably chosen class.

But is the worm really the same as the King's general search? There is one important difference: unlike the victims of the general searches that the framers of our constitution were concerned about, the computer user never knows that his or her disk is being searched by the worm. With the general search, the police were breaking into a house and rummaging through private stuff. With the worm, it is a bit of computer code that does the breaking and it can only see one thing. The code can't read private letters; it doesn't break down doors and it doesn't interfere with ordinary life. And the innocent have nothing to fear.

The worm is silent in a way that King George's troops were not. It searches perfectly and invisibly, discovering only the guilty . . .

This difference complicates the constitutional question. The worm's behavior is like a generalized search in that it is a search without suspicion, but it is unlike a generalized search in that it creates no disruption of ordinary life.

The framers of the constitution do not distinguish between these two very different protections. It is we, instead, who must choose [10].

Then there are cookies, another potential villain in the fight for privacy.

In the fairy tale, Hansel and Gretel were enticed to the witch's gingerbread house for cookies and treats. At the turn of this century, cookies are again in the news. Today's cookie is a software package that can be transferred to computers when users access remote programs. A good cookie helps users navigate the remote program, identifies them as approved users, and performs other helpful tasks. Marketers have cleverly figured out that they too can take advantage of cookies by designing them to provide powerful data about patterns of information use. I would label these bad cookies.

Librarians would not knowingly report an individual's use of a particular resource to anyone. However, vendors who provide information online can easily slip bad cookies into users' computers and learn useful marketing information about those users' behaviors. This information could help vendors market products directly or resell that knowledge to other vendors who have high interest in the specifics of users' information needs. "Bad cookie" headlines have been making the news recently, and there is growing concern about their inappropriate use.

■ "DoubleClick Backs off Net Data: Bows to Protests on Use of Personal Information" (*Boston Globe*, March 3, 2000). "Stung by protests from Internet privacy advocates and a federal investigation, Internet advertising firm DoubleClick, Inc., has halted plans to use name and address data to track the online activities of millions of users." Websites that contained the DoubleClick ad were unwittingly allowing Double-

Click to track users' movements through the Internet and link these patterns with actual names and addresses [11].

■ "Fighting the Cookie Monster" (*Newsweek*, February 28, 2000). "[T]he California Health Care Foundation[†] backed a study of the privacy given by popular health-related sites, looking not at what these sites say, but what they do. The study found that most sites betray you, sometimes in violation of their stated privacy policies. Advertisers on many of those sites may be able to get your name and address. And third parties may actually see the health data that you trustfully give" [12].

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Is privacy a value held or a value lost? Two roads are diverging before us, not in the slow pace of the past information world, but in the supercharged knowledge economy. Technology forces us down this privacy road at warp speed.

Despite the complexities of the market place, we have a moral imperative to choose the high road; a road that will undoubtedly be filled with potholes and loopholes, switchbacks and rockslides—a road less traveled by. We must choose to join others who are speaking out about the potential loss of privacy rights and freedoms that we have come to expect in this world.

By taking this road, we will join thousands who regularly check the privacy watchdog site, Junkbusters,[‡] and keep abreast of information posted on the Electronic Privacy Information Center Website.[§] We must continue to educate ourselves and our users about the potential loss of privacy. We must support our professional organizations as they lobby to keep our freedoms and our values alive and well. We must also work to keep the trust of our users who rely on the privacy of our services and resources. We must assure ourselves that our license agreements clearly define the data-collection rights and responsibilities of our vendors. To choose the other road, either by ambivalence or volition, is a betrayal of the trust we have with our users and society.

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[†] The California Health Care Foundation's Website may be viewed at <http://www.chcf.org>.

[‡] The Junkbusters Website may be viewed at <http://www.junkbusters.com>.

[§] The Electronic Privacy Information Center Website may be viewed at <http://epic.org>.

INTELLECTUAL PROPERTY RIGHTS

Let us now explore another value held dear by librarians.

Once again, the knowledge marketplace presents us with a fork in the road, another choice to be made. The battle over intellectual property rights and copyright is not new to librarians. We have been in the trenches over these issues since the writing of the U.S. Constitution. Article I, Section 8, Clause 8, of the U.S. Constitution gives Congress the power "to promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Subsequent copyright law has attempted to define the balance between private rights and public rights [14].

What is increasingly difficult, however, is the battle over these rights in a digital age where commercial interests have even more to gain in minimizing the rights of educational institutions, libraries, and individuals. The battles are widespread, and the war could easily be lost.

Many librarians are familiar with a November 3, 1999, report entitled "The Digital Dilemma: Intellectual Property in the Information Age" [15]. This recent volume is the work and recommendations of the National Science Foundation's Committee on Intellectual Property Rights and the Emerging Information Infrastructure. In a public briefing about this report, Randall Davis, the committee's chair, makes the following statement:

For more than 200 years, intellectual property law has attempted to maintain a delicate balance between control of information and the need for public access between the interests of creators and the interests of consumers of intellectual work. But the existing balance has been severely jolted by the development of the information infrastructure and the fact that it has become part of everyday life. By the "information infrastructure," we mean three key elements: information in digital form, computer networks, and the World Wide Web. Each of these has a substantial impact on the delicate balance of intellectual property. Digital information has radically changed the economics and practicality of copying by making it dramatically faster, cheaper, and easier to do. Computer networks have radically changed the economics of distribution and the World Wide Web has radically changed the economics of publications [16].

A press release from The National Academies also highlights the report. "Novel business models and new technologies to protect intellectual property as well as education in copyright law are all likely to be far more effective mechanisms than major legislative changes for protecting electronic information at this time." The report recommends:

■ Reevaluation and clarification of the basic concept of

publication because computer networks and the World Wide Web have changed what is meant by publishing.

- Reexamination of the first sale rule, which says that the initial sale of a copy of a work exhausts the copy-right owner's right to control further distribution.
- An evaluation of the shift from copyright law to contract law as licenses and technical protection services are used to manage access.
- Legal, economic, and public policy research should be undertaken to help determine the extent to which fair use and other exceptions and limitations to copy-right should apply in the digital environment. [17]

Several of the committee members were recently invited to a panel presentation at the Harvard University Library Assembly. They reviewed the difficult work of the committee, hearing testimony from the many stakeholders regarding digital property rights. Each stakeholder group had much to lose or much to gain by the outcome of these deliberations as committee recommendations moved forward toward formalization in law and in regulation.

The review of the issues was sobering. When asked how they viewed the battle, the panelists' responses were instructive. They warned of an insidious process, well funded and lobbied with aggressive demeanor by those with commercial interest. *While the library community was at the table, its representatives were conversely too polite and factual to win the day.*

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In his book *Code and Other Laws of Cyberspace*, Lessig suggests that commercial interests may find a solution to the concerns raised by the digital world, by unbundling rights (including the right to read a book twice, sell it secondhand, or lend it) and managing each of these rights explicitly by building a sophisticated, coded system of rights onto the Internet itself. This coded system would be built on top of the existing Internet and would automatically and blindly manage publisher royalties and the rights of the users of content.

He further notes that when intellectual property is protected by this kind of code, there is no balance between authors' rights and fair use. He argues that

[C]yberspace will open up at least two important choices in the context of intellectual property: whether to allow intellectual property in effect to become completely propertized (for that is what a perfect code regime for protecting intellectual property would do), and whether to allow this regime to erase the anonymity latent in less efficient architectures of control. These were not the choices spelled out by the framers of our constitution. But they are choices that we must make now [18].

The road forks again. But are we awake enough to make the choice? These seemingly esoteric debates are

about our fundamental rights as citizens. They have been at the center of our legal battles for decades. If our eyes have glazed over, then we have not yet recognized the importance of these choices.

Experts have told us that this battle is insidious with high stakes for the commercial sector. We must recognize and protect the rights of our users and become, as one librarian has said, "ornery, brash, outspoken" [19] in defense of our values. We must educate our users. We must seek collaborators in defense of the rights of the citizenry. We must be on the alert for hidden code that controls and snoops surreptitiously.

If we choose the path of least resistance and passively watch the world go by, Lessig will have foreseen the future—hidden software code will unbundle our users' activities and charge for pieces of activity. Along the way, fair use rights will be decimated.

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ACCESS TO QUALITY INFORMATION

Preparing for this talk, I read both the publications of Janet Doe and those honoring her. I was particularly impressed with a presentation that Doe made at the annual meeting of the Medical Library Association (MLA) in Chicago, June 19, 1933. The paper was entitled "Supplementary Indexes to the Current Literature of Medicine and the Allied Sciences."

Doe was then the assistant librarian at the New York Academy of Medicine, and her paper demonstrated just what it meant to be a librarian in the 1930s [20]. Her powerful command of the tools and literature of medicine made her a formidable reference librarian. The scope of her knowledge extended through medicine and science to veterinary medicine, psychology, and even consumer health information. Her trust in the literature was also apparent. What would she think if she were practicing in today's changing world?

- Ten years ago, sixteen major news outlets existed. Today, there are six. Local papers have been bought by merged outlets: local editors have lost their megaphones, and diverging thought has been diminished.

- *The New England Journal of Medicine*, with its long-standing policy against author conflict of interest, apologized in embarrassment to its readers that a retrospective study had turned up many conflicts of interest among the journal's authors despite strong safeguards against this practice [21].

- Mergers of entertainment outlets and news media blur the lines between hard news and "infotainment" [22].

- Research funds from private industry may make the search for truth without bias even more difficult.

- Tenure in academic institutions requires publication

in prestigious journals. Some physicians and scientists stretch the truth to improve research results and thereby enhance their careers instead of forwarding science.

■ A cartoon in *The New Yorker* shows a dog in front of the computer screen with the words "On the Internet, nobody knows you're a dog" [23].

Mega-mergers, the notion of content as gold, and the blurring of lines between fact and fiction make it increasingly difficult to understand the biases of the information that we routinely give to our users. While we must acknowledge that bias is not new, we must recognize that the forces of the knowledge-based economy have exacerbated this problem.

In Doe's era, the value of information was both priceless and underpriced. Knowledge transfer, particularly in science and medicine, was about communicating new knowledge. In the 1980s and 1990s, the idea of knowledge as a common good was almost obliterated by the powerful and aggressive knowledge-based economy.

While the Web offers wonderful opportunities for delivery of information to the desktop and heretofore impossible ways of integrating knowledge for our users, it has also accelerated the new commercialization of knowledge. The rapid delivery of information and the ease of publication will make identifying and providing high-quality information increasingly difficult for librarians.

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The road forks again. Now there is no choice. We must do everything in our power to assure our users that the medical library community is working overtime to flag problems of conflict of interest. We should eschew publications that are self-serving and potentially biased. We must educate ourselves and our users about the pitfalls of the dog on the Internet. We must teach them to understand the value of peer review and the breadth of knowledge and information tools that exist in print.

The true value of libraries is that we have, for centuries, sorted the wheat from the chaff with our selection policies, in our reference work. This is the moment when we should let the world know what differentiates libraries and librarians from other information outlets and information professionals. We must not just continue to filter the literature for our users; we must declare our skills and knowledge out loud.

CONCLUSION

MLA's "Code of Ethics for Health Sciences Librarians" urges us to promote access to health information for all and to create and maintain conditions of freedom of inquiry, thought, and expression that facilitate in-

formed health care decisions. It instructs us to respect the privacy of clients and to protect the confidentiality of the client relationship [24].

Privacy, intellectual property rights, and information facilitating informed health care decisions are the fundamentals of the value system under which we have operated for a century. They are the bedrock values against which we work regular miracles of service for our users. Each of these values is at risk in the new knowledge-based economy.

In our lives, we make thousands of choices every day. We choose which among the incredible opportunities in our own institutions will "seize the day" for our library. We choose how and when to address each portion of our work. It is, however, the rare day that our priorities focus on the fundamentals of the profession. We tend to take rights, privileges, and responsibilities for granted, thinking of them as the immovable foundation of the profession.

Now is the time for us to make these fundamentals a priority—time to join and sustain the growing chorus of concern. Taking the passive road is not an option; we cannot sit back and watch the new economy unfold without us. We cannot be meek when our values are at stake.

At the end of the day, and at the end of our careers, we do not want to be "telling this with a sigh." We want to be able to say, with Frost:

"[We] took the road less traveled by,
And that has made all the difference"

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