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Libraries' Shifting Roles and Responsibilities in the Networked Age

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Jacqueline is a student in a Canadian university who comes from a family of very modest means. She is conducting research from home for a research paper she is writing for her biology class. A recent study was published on her topic, and she needs to read the journal article. Using her search engine, she locates a link to the journal and the article. When she clicks on the link, her access is denied, and she is offered the chance to log in. She does not have an account with the publisher. She logs into her university account on the university library's website, hoping to be able to access the paper in this way. Regrettably, her school does not subscribe to the journal. She learns that a university library in a different province has a subscription to the journal, but her school's library has no interlibrary loan (ILL) agreement with that library. Frustrated, she is unable to complete her paper as planned and must write on a different topic.

In the meantime, Jacqueline's mother Caroline has been hoping to make new friends, and she has been invited to join a book club. This month's book has been released only as an e-book. Caroline's local public library has not purchased a copy. When she asked the librarian if she might request a copy by ILL, she was told that this service is not available for e-books. Although the $10.99 purchase price would appear within reach for many readers, Caroline does not have her own device to read e-books, and she cannot justify the purchase to herself. Frustrated and embarrassed, Caroline sends her regrets to the person hosting this month's gathering.

Like Jacqueline and Caroline, many a scientific researcher, fiction enthusiast, curious new Canadian learning English or French, or other users of library services likely have all been unable to obtain access to a desired book or other resource through their library. My goal in this chapter is to advance the argument that access denied to resources in

digital form is a more serious, and more solvable, problem than one might glean from the literature. Digital networks make access possible to a degree that would have been unimaginable in the analogue era. What was once a mix of technological and economic constraints on access is now reduced to legal constraints. The library community should more explicitly commit itself to the goal of ubiquitous access to digital content.

The role of the library in public life should be to minimize or eliminate these legal barriers to access and use through a mixture of creative and fair licensing arrangements and policy advocacy on behalf of those currently denied access. To begin to solve this problem, libraries should develop a more robust *network consciousness*, by which I mean they should realign institutional priorities and resources to explicitly position individual libraries and consortia as network nodes through which patrons can access networked resources or as a site of publication of networked resources. This argument recognizes that a network consciousness should not be the sum total of a library's attentional focus. For the library has also been, and remains, an intensely *local* institution whose physicality through its architecture, geography, and relation to its analogue resources are as important to library patrons as ever. I am convinced that libraries are capable of meeting the challenges of balancing their local and global roles if institutional leaders make this a priority.

To explore the pathway towards developing a network consciousness for the library, it is worth first reflecting on where we are in the digital transition and why local consciousness remains dominant in the organization of most libraries. Often at the forefront in adapting to technological change, libraries have accommodated a number of changes in the roles and services they provide the public. Giving these changes some attention lays the foundation for the network-consciousness perspective.

What follows is in no way intended as a thorough or authoritative history but is instead a reflection on the particular kinds of changes that digital technologies have brought to call attention to the gap between the technological opportunities that libraries face and the constraints that hobble our current uses of these technologies. As an internet enthusiast and copyright scholar, I focus this discussion on the legal arrangements by which libraries have carried out their respective missions. Legal arrangements include the background rules that govern relations between primarily publishers, libraries, and readers – copyright law – and the contractual or licensing arrangements reached in the shadow of this law.

The Traditional Role of Libraries in Public Life

Traditionally, the library has always been an intensely local institution. Shaped by geography, local demographics, the architectural possibilities of its location, and its actual architecture, the library has been in dialogue with its physical and cultural surroundings. Collection or acquisition policies have been informed by, and driven by, institutional mission and, usually, by local user preferences. Among academic libraries, some well-resourced libraries developed unique or unusually large collections that made them "destination" libraries for travelling scholars in particular fields.

As local institutions, libraries traditionally have provided at least four basic services for their patrons or their public. First, libraries collect and preserve information. Collection policies generally have been formed in response to user needs. While the librarians' role has not traditionally been discussed in these terms, we can now see that they have over the years been acting as their readers' *purchasing agents*.

From a legal perspective, the terms of a library's purchase agreements gave it considerable autonomy over the terms of use applicable to its collections once it took custody of books, periodicals, maps, photographs, music, and other collected materials. This is because under traditional copyright law, only a few uses of physical copies – discussed in the next paragraph – were subject to use regulation by the copyright owner. Most regulations of use were promulgated by librarians themselves rather than passed through on behalf of a copyright owner or the source of the material. To be sure, libraries have also been required by contract to enforce donor-promulgated use restrictions on some contributed materials, but by and large the legal relationship between the library and the borrower/reader was bilateral.

The second traditional service that libraries have provided is information dissemination through public lending and interlibrary loan. In most of the world, copyright law traditionally facilitated libraries' performance of this function by limiting a copyright owner's ability to control downstream uses of a particular copy of a work.[1] Although many countries, including Canada, have adopted a "public lending right," this functions, and is often administered, more as a library tax for the benefit of authors and publishers in general than as an exclusive right of the copyright owner ("Public Lending").

Importantly, information dissemination through library consortia and ILL prefigures the modern information network. Looking backwards, we can see that the contractual arrangements through which interlibrary loans were carried out positioned libraries to be functioning

as nodes in a network operating under standardized terms of information exchange and postal delivery.

The arrival of the photocopier disrupted this arrangement. Copyright law treats the distribution of a copy that one owns or possesses differently than the making of a new copy. While the law gave libraries the right to mail their own copies to other libraries, publishers asserted rights under copyright to insist that libraries could not carry out ILL copying and dissemination of these copies. Librarians responded by relying upon traditional users' rights – fair use or fair dealing – to justify making and distributing copies in certain circumstances while also seeking special legislation specifically preserving their ability to use the new technology in the ILL network. This experience of cooperation (coopetition?) lays the groundwork for collective action by libraries in the contemporary era.

The closely related third and fourth services are classification or cataloguing and search services via catalogue (or finding index). Since the nineteenth century, Anglo-American libraries have developed and updated a wide range of metadata standards, such as Panizzi's cataloguing code approved by the British Library in 1839, which subsequently evolved into the Anglo-American Cataloguing Rules (AACR).[2] Also well known and widely used is the Dewey Decimal System of classification, first published in 1876 and currently updated and "owned" by the Online Computer Library Center (OCLC). These shared metadata standards enable librarians and patrons to better network collections and to more easily understand and use a range of collections. Using these standards to present the library's collections to the public gave librarians a central role in guiding a research path. As the title of one article put it, the "librarian was the search engine" (McClure 257).

The development of metadata standards complicated libraries' relationship to intellectual property law. The library community's reliance on standards also allows those who claim intellectual property rights, such as copyrights and trademarks, that may be associated with these to leverage the community's dependence on them. It is beyond the scope of this contribution to engage more deeply on this topic, but OCLC's aggressive reliance on its claimed intellectual property rights – which may well be overstated – to finance its operations through licensing is problematic because it excludes interoperability with open standards on the internet.

Finally, libraries also perform a latent *authentication* function. Generally, we assume that when a library has a book on the shelves called *Oliver Twist* by Charles Dickens, it really is that book. Manipulating a physical book is not easily done, and to the extent that there are multiple

editions of this book, the differences among them are marked according to the aforementioned metadata standards and are usually readily discernible. With digital objects, however, there are usually many versions and digital objects are easily manipulated. Authentication now emerges as a potential function for an online library. Online libraries will have to decide what will be archived and which, if any, of the many manipulations or versions is canonical.

The Transition to Digital Resources

The transition to collecting, cataloguing, and preserving digital resources began gradually. From a legal perspective, not much changed initially as libraries built their first collections of digital media. Just as libraries had acquired microfiche copies of newspapers and other periodicals, a new transmedia migration to floppy disks and digital tape had begun. But these objects were still copies of copyrighted works that were owned by the library, and the library retained the same rights to lend these materials as they had with copies in analogue media.

As storage capacity and computing power increased, this capacity became more evident. In the United States, for example, copyright owners sought to limit libraries' ability to lend works in digital form to prevent patrons from making their own copies. Congress responded to these concerns, by prohibiting some lending of copies of software and sound recordings, but these limits explicitly permit non-profit libraries to continue to lend these materials (17 U.S. Code § 109(b)).

Libraries' collecting, cataloguing, and preserving of digital media initially followed the familiar routines associated with analogue media. Metadata resided either in a card catalogue or in its digital equivalent. It did not take long before some of the challenges associated more specifically with digital media became apparent. On the preservation front, the relatively rapid degradation of electromagnetic media – compared to paper – was a familiar challenge. But digital copies revealed a second form of fragility in their susceptibility to erasure or corruption when proximate to magnets or when closed abruptly while being displayed or played.

Perhaps more challenging was technical degradation caused by the ubiquity of proprietary file formats that became abandoned, orphaned, or changed. Even as computers became more powerful, they remained – and remain – rule-bound devices that cannot read or process files in incompatible formats.

At this stage of development, digital media and the devices needed to make them useful were generally seen largely as adjacent to the

primary role of providing public access to content in analogue form. Digital shelf space permitted the library to collect information in a manner that eased pressure on the physical shelves but at the price of the rapid physical and technical degradation of digital resources. Interlibrary loan remained the network by which analogue and digital media were shared among libraries.

But, as the 1980s wore on, librarians were already attuned to the disruptive potential of digital technologies for the profession and were focused on the range of new skills required to effectively engage the public's access to, and use of, digital resources (see Martin). Less obvious at the time was the change in the legal arrangements between the library and the resource provider. Providers of digital content, particularly software, took the position that the library was not a purchaser of the content but instead a licensee subject to the terms of an End User License Agreement. The terms of these license agreements generally were standardized and not negotiated, but this subtle shift from purchaser to licensee was the beginning of many changes. The introduction of digital networks has been the source of even more fundamental change.

The Transition to Digital Networks

As with the transition to digital media, the growth of digital networks began gradually. Electronic bulletin board systems and some publishers' remote-access content databases were early forms of access to remote collections of content. Readers of a certain age will recall the sounds of a modem dialing its counterpart, the crackling sound of the connection, and the sometimes unreliable but initially wondrous ability to communicate remotely at 300 baud. Librarians were early network enthusiasts who recognized the power and possibility of increasing the scope of information they could provide with network access.

Personal computers or dedicated terminals became the networks' beachhead in the library. Slowly but surely, the library's role shifted emphasis. Now the library became more than the steward of its own collections. It was also an access portal to digital information stored anywhere that a telephone line could reach. Beyond providing the technology of network access, the library's role in relation to remote resources available through the network was initially ill defined (see Dewey). The evolution of the library as a networked institution involved three distinct aspects: (1) access to the open web; (2) access to licensed resources; and (3) digitizing and publishing the local collection.

The Open Web

One form of access permitted patrons to use the network to access freely available resources or those available through their individual accounts with remote providers. The challenges associated with performing this role are more substantial than they appear at first glance. For example, librarians, no longer in control of what resources were available inside the library's physical domain, have struggled when confronted by patrons who use this form of network access to expose those with a sight line to pornographic or violent imagery imported via the network. This remains an ongoing challenge that intertwines concerns about freedom of expression and the right to be free from a hostile work or learning environment. Librarians have also had to develop protocols for network security to respond to the challenge posed by individuals' connections to sources outside the collections that may invite malware onto the libraries' machines or internal networks.

The Licensed Web

The second feature of the library's role in the network is as the public's *licensing agent*. Initially, libraries purchased accounts with remote content providers, such as Lexis, that provided a proprietary dial-up service. As the World Wide Web became more robust, aggregators moved their content to the web, which reduced some of the technological friction associated with different vendors providing their own systems. The move from collecting to licensing poses a range of questions that, in my view, libraries have not yet fully addressed.

As licensing agents, libraries' responsibilities to the public have changed. They can provide access to significantly larger collections. However, individual libraries have significantly less control over these collections. Cataloguing has become the role of search engines and aggregators. Preservation is largely the responsibility of the remote content provider, although initiatives that permit libraries to archive local copies of remotely hosted resources such as LOCKSS (Lots of Copies Keep Stuff Safe) and CLOCKSS (Controlled LOCKSS) allow libraries to play an important preservation role.

Although libraries have used the network to cooperate and share resources to some extent, it appears that most libraries continue to take a collections-like approach to their roles as licensing agents. By and large, licensing is still done at the local level. In the networked era, access varies based on the library's licensing budget rather than its bandwidth or digital shelf space. While some licensing has moved to the consortial

level, and in a few cases to the national level, inter-institutional cooperation to merge the licensing resources to serve a networked public is still at a fairly low level. The gravitational pull of the library's local responsibilities has inhibited the ability of libraries to license at the network level.

Meanwhile, the more traditional form of cooperation and resource sharing – interlibrary loan – has come under more pressure as the gap grows between what technology enables and the limits the law imposes. Rules about digital ILL have become contested, with publishers asserting that libraries are limited in their ability to share resources. "ILL is an awkward means of meeting basic user library needs and as more and more material is purchased in eBook formats, contracts will prohibit libraries from lending material to users who are not covered by contract agreements" (Demers et al. 133). This is a conundrum. "The awkwardness of ILL services highlights divisions within the library profession, as well as a lack of public understanding regarding these divisions" (Demers et al. 133). As the technological capacity to store and disseminate information continues to grow, libraries face a growing range of legal constraints in the form of contracts and copyright laws.

As licensees, libraries have become contractually obliged to police access to the virtual spaces and use of accessible resources. In research libraries, researchers faced with information overload seek to use increasingly powerful technologies to "read" the research literature with mining algorithms to identify patterns of language use in the humanities or disease pathways in the biological sciences, for example. Publishers assert that copyright law prohibits the incidental copying associated with so-called text and data mining, and in some countries that may be true. In the United Kingdom, a special exemption from copyright law permits this form of research. In the United States and Canada, fair use and fair dealing, respectively, permit this form of computational research. A proposal for a European copyright law would also include such a provision. But, even in countries in which a researcher has such rights, research libraries contractually agree to hobble researchers' ability to computationally analyse collections as a whole through text mining as license term and condition. Other challenges that the library's role as licensing agent poses include the end of the license term, at which point libraries may lose access to parts or all of their remote collections.

Significantly, license negotiation is a new and different skill from collections or acquisitions. License terms are substantially more complex and regulatory in nature than are the terms of a purchase agreement. Licenses regulate which members of the public served by the library

may access and use the licensed resources. Librarians traditionally could rely on circulation data as a proxy signal for patron preferences, although circulation alone has been contested as an accurate indicator of in-house library use. Now, much more granular data is available about which patrons use which resources. Resources available on the open internet pose a different kind of problem. With licensed resources, libraries rely to some extent on the self-interest of publishers and aggregators to maintain their collections, to make them searchable, and to preserve them at least in the short term. Resources on the open web are not necessarily subject to these same assumptions. Libraries have largely accepted disintermediation with respect to resources available on the open web. Commercial search engines become the catalogue; preservation is someone else's job; authentication is someone else's job.

My claim here is that libraries should develop more explicitly a "network consciousness" about their role in public life. First and foremost should be that we are now at a point of technological development that all information in digital form can be made available to all people with a network connection. All resources. All people. But this is virtually no one's reality. This gap between what could be and what is should be the subject of more intense concern than it currently is. The legal and institutional challenges to providing ubiquitous access are significant but worth the effort. "The public expects that the unifying bond between organizations with the name library is stronger than the differences in how they are funded and who they primarily serve" (Demers et al. 133).

A librarian reader may chafe at my description of what is missing or needed. Have not libraries been early and enthusiastic adopters of new communications technologies? Indeed, was it not librarians who provided indexing services for some of the first search engines, like Yahoo! and Northern Light? Have not librarians been on the front lines in challenging poorly drafted regulations of the internet and in promoting digital literacy? Yes, agreed.

But my claim here is that developing a fully fledged network consciousness requires a deeper conceptual shift in the mission and goals of libraries than has taken place to date. With this conceptual shift should come the institutional and resource realignments needed to enable libraries to live up to their potential in the networked environment.

To fully inhabit the networked environment, libraries should focus on what has changed. It is now technologically possible for any person with a networked device to access and to engage with any resource in digital form (provided that accessible and assertive technologies are in use for people with disabilities). In this environment, the traditional mission of libraries to collect, catalogue, and preserve information

should translate into a demand that this technological possibility become everyday reality. There should be a means by which libraries can provide everyone legal access to everything that has been published in digital form, while recognizing that some libraries (e.g., tribal libraries) may follow knowledge-keeping practices that balance access with privacy rights for culturally sensitive Indigenous materials.

None of this is, or will be, easy. The legal and financial arrangements needed to realize this vision will take some work. But this first has to be the vision which the library community is working to realize. It is not. The Canadian Federation of Library Associations/Fédération canadienne des associations de bibliothèques, for example, includes in its statement of purpose that it will "champion library values and the value of libraries" and "advance library excellence in Canada" ("CFLA"). Although laudable, neither of these commits libraries to working to make what is technologically possible, real. The American Library Association is similarly indirect. Its mission is to "provide leadership for the development, promotion, and improvement of library and information services and the profession of librarianship in order to enhance learning and ensure access to information for all" (American Library Association A.1.2). This mission commits libraries to providing the information libraries have for all, but it does not commit libraries to aim to provide all information. Somewhat closer to the point are the core values embraced by the International Federation of Library Associations and Institutions (IFLA), which include "the belief that people, communities and organizations need universal and equitable access to information, ideas and works of imagination for their social, educational, cultural, democratic and economic well-being," and that "delivery of high quality library and information services helps guarantee that access" ("More"). But merely "embracing" these values places libraries in the position of only helping to provide universal access rather than making that result an institutional goal.

Instead, Google's vision and mission are a better translation of the library's mission in the digital environment. Google's mission is to "organize the world's information and make it universally accessible and useful." Its analogous vision is to "provide access to the world's information in one click." While this is a clearer, more action-oriented statement of vision and mission, in practice it is not yet clear that Google intends to fully displace library services with respect to information in digital form.

In practice, there is a de facto partnership between libraries and commercial search engines to provide access to the world's information. With respect to information published to the World Wide Web, libraries

have reasonably conceded that they do not have the collective capacity to collect, classify, index, or catalogue the web as effectively as commercially motivated search engines. It is enough to provide internet access to patrons and to stay up to date on the search engine industry to ensure that patrons are using the search service most effective for their needs. However, search engine services do not have a preservation mission. Search engines are designed to provide access to today's web but not yesterday's. Preservation of the web has fallen primarily to the Internet Archive (a digital library and archive, which seek to preserve the World Wide Web through the archiving of websites and web pages) in combination with libraries and archives that focus on particular forms of web content – such as the Library of Congress's agreement to archive Twitter's data (McGill).

With respect to information available through licensed access over the web, search engines generally provide only metadata; this is where the law comes into focus. Whether it is CFLA-FCAB's commitment to "advance library excellence in Canada," ALA's commitment to "access to information for all," IFLA's embrace of "universal and equitable access," or Google's vision of one-click "access," does the concept of access mean leading a student, researcher, or other patron to a publisher/aggregator's paywall? Or does it mean acting as the public's licensing agent to provide access to the information on terms agreed with the copyright owner for resources not in the public domain?

On this question, libraries have taken the lead in negotiating licensed access to copyrighted information. Google certainly has some experience as a licensing agent, primarily through its ContentID service on YouTube, which enables Google to provide licensed access to music embedded in videos and to video content. But Google's search engine, as well as Google Scholar and Google News, generally provides only links to publicly available or paywalled content. Once upon a time in the early days of the web, Northern Light provided access to content published to the web as well as to some licensed content. Those days are gone, and no other search engine includes a licensing service through a premium account or otherwise, so far as I am aware.

The situation we are in, then, is that Google states most clearly the vision and mission aligned to the technological opportunity to provide digital information. Commercial search engines collect and index current content on the web, while libraries and archives focus on preservation. For content available only through license, libraries have taken the lead in acting as the public's licensing agent.

This approach to licensing, however, resembles the library's collection strategy rather than an approach aimed at providing ubiquitous

access to all. The network consciousness for which I argue would inspire libraries to work more collectively – within the limits of competition law – to combine resources and strive for the goal of ubiquitous access. Libraries, of course, already have some experience with this primarily in the research library context with consortial licensing or, in the case of the Netherlands, nationwide licensing. But the scale of collective licensing could be increased.

There are risks here. If, for example, libraries were to seek Canadawide licensing of all e-books and periodicals, would there be one price for all participating libraries or would there be differential pricing? In either case, who would set the price and what would be the basis for decision-making? I do not minimize the legal and economic challenges of finding a fair and sustainable arrangement for licensing the content that requires a license or providing access under the terms of fair dealing or other users' rights when appropriate. But these challenges are not so insurmountable as to deny readers the access that networked technologies make possible. The call here is for the library community to explicitly commit itself to the vision and mission of providing access to all published or collected content – including content that requires a license – to all users and to begin a focused exploration of the legal and policy options that would achieve this mission.

Digitizing and Publishing the Local Collection

A network consciousness should also influence libraries' roles as information producers or publishers. Although libraries' collections are local, the decisions about when and how to digitize and publish these need not be. If all digitization efforts are local only, the risks of duplicative expenditures of resources are manifest. A network consciousness would lead to greater coordination among libraries that possess local copies of the same works to share the digitization and publication load. For example, the costs of digitization and publication need not be borne by the same institutions. To bring analogue works online, one good digital copy is all that is needed. The library that makes that copy need not also be the library that hosts and optimizes that copy for discoverability.

The HathiTrust initiative in the United States is an interesting case of cooperation among academic libraries and a commercial search engine with expertise in digitization. Although not fully reflective of the network consciousness I am advocating, the cooperation that has led to the digitization of millions of volumes of analogue works is a laudable first step on the path to greater inter-institutional cooperation. The research community, and readers with visual disabilities in particular,

have benefited greatly from the efforts of the academic librarians who provided the leadership for this initiative.

It is also important to recognize the immanent network consciousness that has led all librarians who have invested in digitizing and publishing their special collections. Once upon a time, it was precisely the localness of the special collection that required the researcher to travel to the host library to engage with it. For collections of very old works, the fragilities of the analogue medium also imposed a range of constraint on use. By digitizing and publishing these to the network, the library makes the collection less "special" to the place but significantly more valuable to the reading public. (As a fan of the history of the book, I recognize that publishing digital copy is no substitute for access to the original for certain types of research!)

While much is going in the right direction on the digitization front, there are opportunities for greater cooperation and collaboration among libraries to share human and financial resources to digitize, publish, and maintain their collections. Libraries have the opportunity to combine curation of related digitized special collections and to coordinate the digitization and publication of the general collection.

A Way Forward for the Ever-Networked and Ever-Local Library

The internet is old, and yet it is still new. We now take for granted the global connectivity that shared network infrastructure and protocols provide, unless we are broadband poor. But, in numerous domains, embracing the social and institutional consequences of this level of connectivity is incomplete. The argument above is that libraries should develop a more explicit commitment to realizing the potential of the network to accomplish their fundamental missions.

All of the above is said recognizing that even as the possibilities and challenges of network access have become manifest, libraries remained, and remain, intensely *local* institutions. Public libraries in particular have initiated or been asked to provide a range of social services to their local populations, as Crawford and Kosciejew have clarified. These include providing shelter for homeless people, after-school programs for children, and help in navigating a new culture for newcomers. This division of responsibility between the library as a local institution and the library as a network participant is a principal challenge for the modern library. As a public-facing institution, the library must continue to decide which needs of the public, which members of the public, receive priority. As a network participant, the library should serve the network. As a local institution, the library should serve the local public.

NOTES

1 See, for example, 17 U.S. Code, §109 (limiting exclusive right of distribution
   to not include lending of legally acquired copy of a copyrighted work).
2 See Joint Steering Committee for Development of RDA.