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A critical theory of open access: Libraries and electronic publishing

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Abstract

The stranglehold that commercial publishers have over scholarly publishing and the high prices of their journals have led to the so–called “scholarly publication crisis.” Academic librarians and concerned scholars have had to advocate for alternative models of scholarly publishing that challenge the commercial publishers’ control, and the open access movement has taken hold. This article introduces the framework of critical theory into the discourse of open access. Critical theory contextualizes the scholarly publication crisis within the dominant information society framework of increasing commodification of information and enhanced global capitalism. While providing tools for analysis and enhanced advocacy, the critical theory framework links libraries with other advocacy movements related to freedom of access to information and opens up new democratic possibilities for engagement. In particular, electronic publishing is an area in which libraries have the potential to effect changes in a commercially dominated market, thereby contributing to greater equity of information access.

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Libraries in the Information Society

Given the massive popularity and use of the Internet, the old venerable institution of the library has faced challenges in redefining its roles and justifying its existence to the general public. Specifically, the relevance of the library in the ‘information age’ has been questioned, especially since increasingly sophisticated search engines are redefining the meaning of an ‘information institution.’ This level of skepticism and doubt amongst the public and a corresponding peak in anxiety amongst librarians and library leaders became more prominent in the late 1990s, at the height of the Internet revolution. For example, a 1996 report commissioned by the Benton Foundation found that the public in the United States was unaware of a librarian’s job, likening it to that of a bookstore clerk, and that while there was high esteem for the traditional role of the public library, there was little public support for the library as a leader in the digital revolution (Estabrook, 1997).

The role of the library as a leader in the digital revolution is an evolving one, however, that has been advancing with time. ‘Traditional’ roles of the library hinge on the idea of service to the public (St. Lifer, 2001), as well as maintaining and building library buildings, and providing a place where the information needs of the public can be met (Estabrook, 1997). This traditional service role of the library has been demonstrated in statements such as the American Library Association’s (ALA) *Core Values Statement*, in which values such as service, social responsibility, and the public good are highlighted (ALA, 2004). Part of the challenge for libraries in the information age is for them to redefine themselves to meet the needs of the communities they serve, while continuing to deliver core informational and recreational services (St. Lifer, 2001).

One aspect of this redefinition includes an intensification of libraries’ roles in facilitating access to information and technology for the communities they serve. Libraries are in fact playing a significant role in increasing access to the Internet (Molz and Dain, 1999), as they are now central actors in addressing the “digital divide” (B.P. Lynch, 2002).

Perhaps even more significantly, major benefactors such as Bill Gates have made the funding of public libraries and the enhancement of information technology access in libraries one of his major philanthropic goals (Nunberg, 1998). The goal of both the U.S. Libraries and Global Libraries program of the Bill and Melinda Gates Foundation is to provide access to information technology that can improve health, educational, and economic opportunities (Gates Foundation, n.d.). The role of the Gates Foundation in promoting libraries as important technology access points is arguably a significant factor in increasing the relevance of the library in the information age — in 1996 one in four library systems provided public access computing, while today a vast majority of libraries do, and 14 million Americans regularly use computers in libraries (Gates Foundation, n.d.).

In fact, the prominence of libraries in facilitating access to technology is seen in their association with information society policy frameworks. For instance, the International Federation of Library Associations and Institutions (IFLA), composed of national library organizations from around the world, is the *de facto* international 'voice' of librarians, and has made the World Summit on the Information Society (WSIS) one of its major areas of focus (IFLA, 2005b). IFLA participated in the conference as a member of the civil society delegation in both the 2003 Geneva and 2005 Tunis phases of the Conference, and it lobbied government representatives to include language that reflects the importance of libraries, museums and archives to a global information and knowledge society (IFLA, 2005a). IFLA successfully made libraries an important part of the information society vision of WSIS.

Information society policy and ideology, however, is a contested terrain in the context of globalization, treated later in this article. For instance, the technological determinism that permeates the ICT–heavy vision of WSIS obscures some of the cultural, democratic, and public space functions of libraries. In addition, libraries are mentioned mainly as access points to technology in the WSIS documents (Pyati, 2005). The other cultural, social, and educational aspects of libraries are reduced to purely technological concerns and access to ICTs. While the library profession is taking advantage of an opportunity to advance their role in increasing access to ICTs by participating in WSIS, technological determinism and neo–liberalism permeates the information society environment. Libraries are caught in a paradox of the information society — while acknowledging their important roles in providing access to information, the overarching technocratic agenda of the information society can serve to undermine many library goals of information access.

In addition, the discussion of libraries and their emerging forms of technology access in the Internet age often lacks a critical theoretical perspective. To address this shortcoming, I propose critical theory and critical theory of technology (Feenberg, 2002) as useful constructs for understanding emerging and transforming roles for libraries in the information age. This article proposes how frameworks such as critical theory are eminently *practical* for understanding how information institutions such as libraries can combat the dominant reach of informational capitalism. These roles can include an enhanced role for libraries in the publication process, which can encompass tasks as varied as electronic publishing support services, digitization of cultural and academic resource materials, community archiving, as well as other forms of electronic content management. Critical theory also contextualizes the challenges that libraries face in larger socio–economic and political contexts. For example, the so–called "scholarly publication crisis" that academic libraries face is part of the larger information– and "techno–capitalist" movements within the dominant information society.

What is "critical theory?"

Critical theory, while a large area of study, in this article is defined largely in terms of the Frankfurt School of critical theory, which has a specific historical development and trajectory. In this context, the Institute for Social Research (the first Marxist–oriented research institute in Germany), founded in 1923 in Frankfurt, Germany and composed largely of German–Jewish intellectuals, is of fundamental importance. This institute, during the time of its most influential director, Max Horkheimer, attempted to revise both the Marxian critique of capitalism and the theory of revolution in order to address those new social and political conditions which had evolved since Karl Marx's death (Bronner and Kellner, 1989). The term "critical theory" did not emerge until 1937; however, after the majority of the Institute's members had immigrated to the United States after Hitler's victory, the term stuck and was used to define the general theory of contemporary society associated with Max Horkeimer, Herbert Marcuse, T.W. Adorno, Leo Lowenthal, and Frederick Pollock (Bronner and Kellner, 1989). The term represented a "code" of sorts, which belied its roots in Marxist social theory, particularly in a time of increased hostility to socialist–inspired academic and political projects (Kellner, 1989).

Critical theory, in a general sense, is a form of normative social theory that is concerned with progressive social transformation and change, an interrogation of power dynamics in society, the connections between theory and politics, and a focus on the emancipation of those who are oppressed. Critical theory is distinguished from traditional, mainstream social theory through its multidisciplinary perspectives, its attempts to develop a dialectical and materialist social theory, and its goals for socio–political transformation (Kellner, 1989). In this particular discussion, critical theory is highly relevant to a critique of the techno–capitalist and technological determinist forces affecting libraries. It makes connections between larger socio–political and economic contexts with specific and *particular* contexts. The particular in this example is the case of libraries — information institutions that are being challenged to continue their service–oriented models of information provision in the face of the increasing techno–capitalist and market pressures of the information society.

Critical theory offers a multidisciplinary approach to society which combines perspectives drawn from political economy, sociology, cultural theory, philosophy, anthropology, and history, and offers an antidote to the often non–critical quantitative approaches within contemporary social science (Bronner and Kellner, 1989). Critical theory is open to development and revision and offers a well–articulated standpoint for thematizing social reality, but is not a single doctrine

or unified worldview, but is rather a set of basic insights and perspectives (Bronner and Kellner, 1989). Emancipatory concerns within the context of oppressive socio–economic, political, and ideological conditions are at the heart of critical theory.

Critical theory's interrogation of techno–capitalism is of growing importance, mainly because of the increased prominence of culture, technology, media, information, knowledge, and ideology in more domains of social life (Kellner, 1989). It investigates the mediations between different spheres of life, as well as the contradictions between these spheres, producing a "mediated totality" (Kellner, 1989). The contradictions are part of a dialectical tension, which can open up new possibilities and emancipatory alternatives. In this particular context, contradictions and tensions exist between the potential for libraries to become further involved in a capitalist vision of an information society, and the potential for libraries to create democratic and progressive visions of an information society. The next sections explore this idea in more detail, particularly with regard to the roles of academic libraries in the open access "revolution."

Academic libraries: Re–envisioning the Information Society

While libraries have transformed themselves into important technology access points, they are also in a position to articulate broader technology goals and development strategies. This fact is evident in the case of academic libraries — while not having the broad mandate of public libraries, academic libraries are nonetheless important service institutions to their academic and often broader civic communities. In response to various economic pressures (as part of the greater context of the 'information society'), for instance, academic libraries are taking on important roles with regard to the scholarly publication process. The development of institutional repositories and exploration of electronic and open access publishing models have made academic libraries important players in the debate over the future of scholarly publishing (Willinsky, 2006). While academic libraries are not replacing the role of traditional publishers, the role of the academic library in advocating for and supporting technological solutions to support new forms of publishing is significant.

The transformation of the library into an important information technology hub in the age of the Internet is a process that is both old and new. Libraries have been involved in the development of their own technology for many years, with various homegrown systems for library applications developed in the 1970s and 1980s (Morgan, 2002). What makes the new information technology environment in libraries so different, however, is the networked power of the Internet (Morgan, 2002), and the ability to share resources and expertise to better serve the needs of their user communities.

Some of these new roles include an enhanced role for libraries in the publication process, which can encompass tasks as varied as electronic publishing support services, digitization of cultural and academic resource materials, and community archiving, as well as other forms of electronic content management. Libraries have long been in the "content business" — however, rather than merely providing access to content, they are taking more active roles in the development of content itself.

However, while libraries are shaping and defining an information society based on professional ethics of service and principles of information access, an environment of neo–liberalism, information commodification, and technological determinism is pervasive. This environment manifests itself in various challenges the library profession is facing, including issues of copyright and intellectual property for digital resources, skyrocketing prices for scholarly journals, and the threat of increasing privatization of library services, to name a few. For example, the extension of copyright and intellectual property laws poses a threat to traditional fair use policies for libraries, and can serve to stifle creativity and increase the concentration of power of ownership in the digital world (Lessig, 1999). In addition, the scholarly publishing 'crisis' of rising journal prices has forced many academic libraries to make the difficult decision of cutting subscriptions to many journals (Willinsky, 2006).

The expanded role of libraries in the publication process did not come by accident — instead the extreme economic pressures of the scholarly publishing environment has been a major impetus. Commercial publishers dominate the scholarly publication market, and have effectively created a bottleneck in the distribution of scholarly information through highly restrictive copyright rules and exorbitant prices for journals. As will be discussed, the enhanced role of academic libraries in the publication process is directly addressing this bottleneck in the distribution of scholarly content.

To make a comparison, this utilization of Internet technologies to challenge corporate control over information parallels the activities surrounding peer sharing of music. In the case of libraries, the controllers of the 'creative product' are commercial publishers, while in the case of peer sharing of music, multinational media conglomerates control the creative product. In essence, however, the different contexts belie the fact that these struggles are highly similar. The challenging economic environment that academic libraries face will now be discussed in more detail.

The severity of this economic situation, the "scholarly publication crisis," has been one of the defining challenges of the academic library environment over the past decade. The increasing volume and costs of scholarly publications, particularly in science, technology, and medicine, has made it difficult for academic libraries to support the collection needs of their user communities (ARL, 2000). While people outside of the higher education community may not realize the extent of this crisis, it is both shocking and severe, and is a prime example of increasing corporate control over information.

Journal subscription prices are exceedingly high, and the licensing of electronic content can be restrictive and expensive

as well. For example, science and technology journals are particularly expensive — in 2005, the average annual subscription price for chemistry and physics journals topped $2,000, while other journals in the sciences had prices of $1,000 or above (*Library Journal*, 2005). Most major publishers, however, bundle together journals for institutional purchase — the result is that journal packages can cost upwards of $1 million per year for libraries. As a consequence, many libraries have had to cut subscriptions to journals, and eliminate the print holdings of journals (Willinsky, 2006).

To illustrate the extent of this crisis, the top research libraries in North America have been spending increasing amounts of money for fewer publications in the last 15 years — prices of serials have increased by 215 percent, while the Consumer Price Index during this period increased only by 62 percent (Helfer, 2004). A result is that libraries have been forced to cut subscriptions to many journals and are paying exorbitant fees for the licensing of electronic journals. Commercial publishing companies have a stranglehold on the academic publication market — major publishers such as Wiley, Springer, Kluwer, and Elsevier dominate the academic publishing market, with these companies charging more for their material than scholarly society and university press publishers, and at a rate far exceeding increases in library budgets (Helfer, 2004). Elsevier is one publishing company that dominates the science and technology journal marketplace and reaps substantial profits. For instance, in 2003, Cornell University Library's Elsevier journals made up two percent of their collection at a cost of $1.7 million, which is 20 percent of their journal budget (Nowick and Jenda, 2004).

In addition, issues of copyright remain important in the scholarly publishing environment, as witnessed by the exceedingly high prices of course reader materials, as traditional commercial publishing models have often restrictive copyright regulations. Librarians, however, are starting to take action against this environment of increasing information commodification. For instance, academic librarians are taking an active role in educating scholars at their institutions about alternative publishing and author copyright models (University of California Libraries, 2006).

This crisis is based on the successful transformation of knowledge into a capitalized commodity and economic driver (Willinsky, 2006). Major academic journal publishers over the last decade have merged, and the resulting corporate publishing concentration, with its focus on knowledge capitalization and shareholder value, has seen journal prices rise well above inflation rates, and university libraries cannot keep up (Willinsky, 2006). Consequently, many economically less well off libraries and academic institutions have had to massively cut journal subscriptions, with academic libraries in the developing world particularly at a disadvantage.

Interrogating the Information Society

Merely viewing this situation of consolidation and rising prices in scholarly publishing as an isolated event, however, would be shortsighted. The insights of critical theory are especially useful in this regard. For instance, these changes in the economics of scholarly knowledge production need to be viewed within the larger context of techno–capitalist expansion and the increasing commodification of information. This contextualization would be incomplete without a discussion of dominant discourses surrounding the "information society."

Given the massive changes brought about by the Internet, it is commonly assumed that we are living in an "information society." While debate rages about the details and the nature of this information society, a general consensus exists amongst academics, policymakers, and corporate information technology actors that we are living in a society transformed by Internet and network technologies (Webster, 2002). The information society, however, is a contested concept which has a long history that predates the Internet.

It is a term that gained in popularity with the rise of computerization, and also began being used in economic circles, most notably with the work of Fritz Machlup in the United States, who began to define information industries and an information economy (Machlup, 1962). Machlup, in his studies of the U.S. labor force, created the definition of the information worker, and used statistics to show that nearly half of the U.S. labor force was engaged in information work (Cawkell, 1987). Frank Webster (2002) discusses the multi–faceted dimensions of the information society concept, defining it along the lines of technological, economic, spatial, and cultural terms. He argues, however, that it is not certain whether an information society is distinguished by the increasing economic importance of information, the increase in information and communication technology (ICT)–mediated cultural products, or increased access to education and information (Webster, 2004).

Webster (2004) also emphasizes the development of the information society in an environment of neo–liberalism and corporate globalization, where global capitalism has greatly extended its reach and is the only game in town. By neo–liberal, what is meant here is increasing privatization and deregulation of public services (Webster, 2004). A global consensus and movement is continuing to develop around deregulation and a faith in market–dominated policies of telecommunications development.

He places his major critique on the techno–capitalist origins of the information society, and what he describes as its roots in Taylorism and instrumental rationality. Several critics find fault with the construction of an information society that is rooted in technological determinism, global capitalism, increasing corporate power over media and information content, and corporate globalization (Webster, 2002). In fact, the idea of an 'information age' was originally conceived as a scientized society, a vision that legitimated the technocratic ambitions of states and corporations (Feenberg, 1995).

Information society discourses and their associated ideologies and policy formulations also present several important

questions about the future of the Internet. In a basic sense, will the Internet follow a dominant information society path and become increasingly consumed by commercial interests, or will more progressive and democratic forces shape the Internet? The answer to this question depends, to a large degree, on the nature of networked technologies, and the possibilities they open for undermining forces of commodification and increasing corporate control over the Internet. Rather than being a "completed" product, the Internet remains an unfinished project, as its democratization is a work in progress (Feenberg, 2006). Thus, the continued growth of the Internet requires that Internet politics be re–theorized from a standpoint that is both critical and reconstructive (Kahn and Kellner, 2005). The technocratic vision of the information society, with its deterministic and neo–liberal logics, needs to be challenged for more democratic conceptions of the Internet to emerge.

These challenges are occurring in various communities that have formed around the use of Internet technologies. Several communities are at the forefront of various struggles for Internet democratization, and are organized around issues as diverse as medicine, music sharing, open source software, libraries, video games, and online education (Feenberg, 2006). The struggles academic libraries are facing in re–defining publishing in a corporate–dominated information society are part of the on–going battle over democratization of the Internet. Critical theory helps to link the struggles of academic libraries with these other "freedom of information" movements against encroaching techno–capitalist logics.

Library advocacy: The case of open access

A consequence of this challenging economic situation in journal publishing is that academic libraries have had to find creative ways to increase access to scholarly information. As a result, academic libraries are taking the initiative in academic publishing efforts. For example, in a statement by the Association of Research Libraries (ARL) entitled, "Principles for Emerging Systems of Scholarly Publishing," (2000) the increasing cost of scholarly publishing is referred to as a scholarly publishing crisis, and academic libraries are mentioned as sources of potentially new models of scholarly publishing. This statement was produced at a meeting of university librarians in Tempe, Arizona in March 2000. Various recommendations were made to help contain the rising cost of journal subscriptions, including containing the cost to the academy of public research, using electronic capabilities to provide wide access to scholarship, and maintaining a balance in copyright, to name a few (ARL, 2000).

Largely as a result of the harsh economic realities of the scholarly publishing environment, the library community has taken action. For example, the Scholarly Publishing and Academic Resources Coalition (SPARC) is an alliance of academic and research libraries and organizations working to correct market dysfunctions in the scholarly publishing system (SPARC, n.d.). The creation of SPARC in 1997 by ARL was a direct reaction to the untenable economic environment surrounding scholarly publishing. SPARC works on an advocacy level that focuses on broad and cost–effective access to peer–reviewed scholarship (SPARC, n.d.) SPARC's agenda focuses on three strategic pursuits: incubation, advocacy, and education — for instance, the Publisher Partners programs set up partnerships for incubating new journals and converting existing ones to open access (Yiotis, 2005). A major goal of this advocacy is to create more economically sustainable systems for transmitting scholarly knowledge — a result is that libraries would pay less for scholarly information, helping them get more for their money.

The mobilization of libraries to address the scholarly communications crisis has been a joint effort of scientists, scholars, and librarians. In fact, certain scholars, despite the built–in 'publish or perish' models for tenure promotion, have made the reduction of economic barriers for access to scholarly information a top priority. Stevan Harnad, for instance, has become the major advocate for scholars to publish their preprints of unpublished, unrefereed, and original work on globally accessible archives freely available to scholars with network access (Yiotis, 2005). This advocacy, part of a scholarly publication paradigm shift, is enabled by Internet technology with the aim of shifting the control of knowledge resources away from commercial publishers and back to scholars, who are now reclaiming ownership and copyright of their work (Yiotis, 2005).

An economically unsustainable system in scholarly publishing was created in which publishers, through processes of consolidation over the years, became the 'owners' and copyright holders of a vast majority of scholarly information. Universities, which employ many of the scholars providing content to these commercial publisher–owned journals, have to "buy" back this work at high rates, often out of the budgets of academic libraries.

Scholars such as Harnad are challenging this system, and the open access movement has taken hold. The open access movement is about providing unrestricted access to scholarly information — John Willinsky (2006) describes the open access movement in terms of what he calls the 'access principle', which is:

> "... a commitment to the value and quality of research [that] carries with it a responsibility to extend the circulation of this work as far as possible, and ideally to all who are interested in it and all who might profit by it." [1]

He goes on to point out that scholars and researchers have a vested interest in making their scholarship as widely read and available as possible, as a certain 'vanity factor' pervades the academic publishing industry, with a scholar's reputation built on how widely read and cited they are. In addition, he argues that the 'access principle' is part of a long–standing principle of libraries, from ancient times to the small–town libraries that flourished in nineteenth century

America that gave access to knowledge to the common man. Does the open access ethic resonate with the values and ethics of libraries? This is an important question, and it does appear that libraries are promoting their professional values in the open access movement. However, much of the motivation may also be related to basic economic concerns about creating viable, less expensive competing publishing models to conventional commercial models.

Open access can take many forms, and open access electronic publishing is often cited as an example. Internet technologies have allowed the wide dissemination of scholarly research — allowing libraries, scholars, and publishers alike to re–envision models of scholarly publication. Open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions, made possible by the Internet and the consent of the author or copyright holder (Suber, 2004). Open access is compatible with peer review and is not free to produce — it is not focused on whether scholarly literature can be made costless, but whether there are better ways to pay the bills than by charging readers and creating access barriers (Suber, 2004). The two most common forms of open access are open access repositories and open access journals. While a topic that has been gaining momentum in recent years, open access represents a growing consciousness around the need to make knowledge and information as widely accessible as possible (Willinsky, 2006). In fact, the very possibility for open access has been greatly enhanced by the presence of digital technologies (Willinsky, 2006).

Libraries have been active on both the open access repository and journal fronts, as academic libraries see the benefit of alternative publication models since they face both a pricing and permissions crisis. The pricing crisis means that libraries must pay increasingly steep prices for journals, while the permissions crisis means that libraries are hamstrung by licensing terms and software locks that prevent them from using electronic journals in the same full and free way as print journals (Suber, 2003). As Peter Suber (2003) argues, librarians can do a lot to alleviate these crises, as they have the best understanding of the problem and can promote open access publishing in their institutions.

Open access has various implications for libraries, and might entail potentially new roles for libraries. For instance, in the mixed open access–traditional publishing environment, entrepreneurial libraries will find new ways to serve their patrons (Schmidt, *et al.*, 2005). In relation to libraries' expanded roles with relation to institutional repositories, another role that libraries may take is to encourage open access publication by subsidizing authors' fees in open access venues (Schmidt, *et al.*, 2005). Funding open access publication provides a new perspective on the library's traditional role as the institutional purchaser of scholarly information (Schmidt, *et al.*, 2005). Thus, the open access movement provides various sets of opportunities and challenges for libraries, including expanded opportunities for libraries to shape the terrain of scholarly publishing.

The involvement of libraries in supporting new forms of publication is a shift in traditional library roles. While libraries are not replacing publishers, supporting repositories and electronic publishing is making libraries important players in the publication process. For instance, a notable example of academic libraries' greater involvement in publishing is Stanford University Library's operation of HighWire Press, as it has been a major player in improving public access to articles in the life sciences and medicine (Willinsky, 2006).

Libraries have been involved in various open access initiatives such as the development of institutional repositories in the last few years. Institutional repositories allow for scholarly materials in digital format, whether published or unpublished, to be made widely available — in essence, an institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members (C.A. Lynch, 2003). Repositories are a response to the scholarly publishing crisis, and institutional and even supra-institutional repositories have recently become a strategic initiative on many campuses to support the production, dissemination, and preservation of new scholarship that exploits the promise of digital technologies (Hughes, 2004).

Institutional repositories can also host academic journals, as in the case of the University of California eScholarship Repository (Hughes, 2004). The eScholarship Repository at the University of California is intended to be a long–term collaborative enterprise among librarians and scholars on all the University of California campuses (Hughes, 2004). A viable open source software option for institutional repositories is DSpace, developed by the MIT Library and used by various academic libraries around the world. Institutional repositories offer expanded roles for reference librarians, as they are natural partners with institutional repositories because of their service orientation, subject experience as knowledge managers, and communication skills (Rockman, 2005). Open access and institutional repositories are not synonymous; rather, institutional repositories are best seen as an enabling technology for open access (Bailey, 2005).

The case of libraries supporting open access journals is an evolving area. Various commercial electronic publishing software packages exist, as well as some open source software products. A leading open source product is the Open Journal Systems (OJS) journal management and publishing software that was developed by the Public Knowledge Project at the University of British Columbia and is now managed by the Simon Fraser University Library (Willinsky, 2005). An evolving project, OJS has a direct relationship with an academic library for its technical development, support, and hosting (Willinsky, 2005).

OJS has been a successful open source product, with several hundred journals using this software (Public Knowledge Project, n.d.a). Much of the user base for OJS, in fact, comes from the developing world, with over 200 journals in Africa using the OJS software through the African Journals Online program (Public Knowledge Project, n.d.b). This large amount of uptake in the developing world is not surprising given the economic challenges of accessing commercially controlled scholarly information in that part of the world. The open source nature of the product (free to download) certainly makes it an attractive product for users, as traditional corporate models of scholarly publishing can be bypassed. Defining the library's role in this type of electronic publishing project is a work in progress, but can take various forms.

For example, Willinsky (2006) proposes the idea of a publishing and archiving cooperative among libraries, scholarly

societies, and publishing groups. He argues that membership in a publishing and archiving cooperative would enable libraries to participate more directly in journal publishing and archiving to ensure affordable access to research and scholarship. In this cooperative model, libraries would bring their expertise of hosting, indexing, and archiving, while scholarly associations would manage the journal activities — member libraries would pay fees to the cooperative, perhaps based on institution size or on some proportion of the subscription fees they once paid for journals that are now part of the cooperative (Willinsky, 2006). An open source journal publishing software product such as OJS could be utilized in this framework, as well as other electronic publishing software. Since many journals run by scholarly societies are struggling to survive and are moving to commercial publishers for support, perhaps this type of cooperative model might be viable. However, this is just one example of how libraries can take on new roles in transforming scholarly publishing, utilizing the power of Internet technologies to do so.

Conclusion: A critical theory of open access?

As we have seen from the previous section, a shift in the economic environment of scholarly publishing has forced academic libraries to take an advocacy stance and re–define the nature of scholarly publishing. This expansion of library roles in the publication process is made possible by the transformation of the technological environment and the advancement of the Internet. Without the Internet, electronic publishing would not exist, and consequently related developments such as the open access movement and institutional repositories could not be a reality. A process is underway in which libraries are taking advantage of Internet technologies to advance an agenda imbued with their professional value of access to information.

With libraries becoming important actors in technological innovation, it thus becomes important to interrogate libraries' relationship to technology. As discussed earlier, a neo–liberal information society environment of increasing commodification has created daunting challenges for the library profession. In addressing issues of digital copyright and scholarly publishing, libraries are in for a long, uphill struggle, but gains have certainly been made. For instance, the development of SPARC and its advocacy has brought attention to the scholarly publication crisis, and certain major corporate publishers of academic journals have reacted to this kind of pressure by widening authors' rights and allowing the publication of articles in e–print archives (Willinsky, 2006).

I have argued in this article for critical theory as a useful construct to view emerging forms of library advocacy and activism against the encroachment of techno–capitalist logics, with the open access movement as an example. Critical theory consciously links open access advocacy in libraries to other movements which challenge restrictions on access to information. Most importantly, critical theory opens up a discursive space for libraries in the democratization of technological discourses in society. Technology, rather than being part of a determinist discourse that will lead to the "demise" or "irrelevance" of libraries, in fact can be a realm for increased democratic participation of libraries. Critical theory creates a wider space for a progressive re–envisioning of the roles of libraries in promoting enhanced and more democratic forms of information access.

Thus, libraries can be envisioned as active shapers of technology for democratic and progressive ends. In examining the roles of academic libraries in mobilizing and building partnerships with scholars to challenge the traditional scholarly publication process, we are seeing librarians injecting their values into this debate. With libraries taking a more active role in the publication of materials, we are witnessing a shift in the realm of technological expertise into the arena of libraries.

Related to the idea of democratizing technology (Feenberg, 2002), librarians are using Internet technologies to expand their perceived realm of expertise, entering the domain of traditional publisher services, forging new alliances, and advocating for new directions in scholarly information access. While commercial publishers will continue to exist, library forays into the publication arena, whether in the form of supporting electronic publishing and open access initiatives, developing institutional repositories and e–print archives, or digitizing print materials, are changing the publication landscape. Whether consciously or not, librarians are also engaging in a battle against the increasing commodification of information. Librarians, in supporting new forms of electronic publishing, are helping in their own way to combat the hegemony of the dominant information society.

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Note

1. Willinsky, 2006, p. 5.

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