Freedom for scholarship in the internet age

by

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Dissertation Submitted In Partial Fulfillment
of the Requirements for the Degree of

Doctor of Philosophy

in the

School of Communication

Faculty of Communication, Arts and Technology

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SIMON FRASER UNIVERSITY

Fall 2012
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Abstract

*Freedom for Scholarship in the Internet Age* examines distortion in the current scholarly communication system and alternatives, focusing on the potential of open access. High profits for a select few scholarly journal publishers in the area of science, technology, and medicine contrast with other portions of the scholarly publishing system such as university presses that are struggling to survive. Two major societal trends, commercialization and irrational rationalization, are explored as factors in the development of distortion in the system, as are potential alternatives, including the commons, state subsidy, DIY publishing, and publishing cooperatives. Original research presented or summarized includes the quarterly series *The Dramatic Growth of Open Access*, an empirical study of economic possibilities for transition to open access, interviews with scholarly monograph publishers, and an investigation into the potential for transition to open access in the field of communication. The similarities and differences between open access and various Creative Commons licenses are mapped and analyzed.

The conclusion features a set of recommendations for open access. Carefully transitioning the primary economic support for scholarly publishing (academic library budgets) from subscriptions to open access is seen as central to a successful transition. Open access changes the form of the commodity with respect to commercial publication, from the scholarly work per se to the publishing service; a major improvement that overcomes the trend towards enclosure of information, but not necessarily the dominance of the commercial sector. A multi-faceted approach is recommended as optimal to overcome potential vulnerabilities of any single approach to open access. The open access movement is advised to be aware of the less understood societal trend of irrational (or instrumental) rationality, a trend that open access initiatives are just as vulnerable to as subscriptions or purchase-based systems. The remedy for irrational rationality recommended is a systemic or holistic approach. It is recommended that open access be considered part of a potential for broader societal transformation, based on the Internet's capacity to function as an enabler of many to many communication that could form the basis of either a strong democracy or a decentralized socialism.
Keywords: open access; scholarly communication; commodification; rationalization; scholarly publishing
Acknowledgements

I gratefully acknowledge the contributions of my committee, Richard Gruneau, Richard Smith, and Andrew Feenberg, and particularly my senior supervisor Richard Gruneau in shaping my research and writing in this dissertation. Thanks are also due to my Dissertation Support Group, especially regulars Benjamin Woo, Darryl Cressman, and Scott Timcke; without their guidance and gentle pressure it would have taken me much longer to complete this dissertation. Thanks are also due to all of the faculty, students, and staff at Simon Fraser University School of Communication, for everything that they have taught me over the past few years and for the collegial atmosphere that has made studying here a genuine pleasure. The support of my employer, BC Electronic Library Network, particularly my supervisor Anita Cocchia, and my co-workers, particularly for the sabbatical year that made a great difference in helping me to get a rapid start on this degree, is much appreciated. The support and encouragement of my children, Dana and Leona, has been invaluable. Thanks also to everyone involved in discussions around open access and scholarly communication over the past decade from whom I have learned much. Everything that is correct and/or well written in this dissertation reflects the contribution of all of these people. Any remaining errors or imperfections are my own.
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Chapter 1. Introduction

Scholarly publishing in western societies has a long and somewhat complex relationship with the economic market. For example, on the one hand, books produced by scholars as far back as the late 15th century were sold commercially and were widely circulated through the market system. By the late 18th century, it was not uncommon for scholarly publications by writers such as Rousseau, Voltaire, and Adam Smith, to have broad audiences across Europe. The lines between journalism, scholarship and popular culture were often more blurred than today, and the existence of widespread censorship in Europe sometimes gave scholarly criticism an exciting “underground” appeal.

On the other hand, there was a strong tradition of specialized scholarly inquiry, organized through growing numbers of scholarly societies and specialized periodicals. This arm of scholarly publishing tended to operate outside the market as a kind of ‘gift economy.’ By gift economy I mean a complex, organic system operating primarily on the basis of traditions of reciprocity rather than monetary exchange. That is, scholarly authors give away their journal articles, and peer reviewers provide their services for free, as part of a system from which all draw (all scholars build on the work of previous scholars), and all are expected to contribute. This does not mean that scholars and peer reviewers are not paid, as this work is typically part of the salaried work of a university professor. Society editors, if they are paid for their labors (many are not), are often paid an honorarium rather than a wage. Monetary exchange is involved in the dissemination of works (payment for subscriptions for journals) to cover hard costs such as printing and mailing journal issues, however this exchange does not cover the bulk of the work involved (doing the research, writing, reviewing and most of the editing).

For much of the nineteenth and 20th centuries the scholarly gift economy operated as a relatively independent alternative to the commercial publication of scholarly works and the dominant scholarly journals tended to operate in the non-profit sector, run by scholars, for scholars and purchased by libraries for scholars. However, in the decades since the Second World War, there has been increasing involvement by the commercial sector in scholarly publishing and increasing concentration in the market,
so that today a very substantial percentage of the world’s estimated 20-25,000 scholarly peer-reviewed journals are published by just four companies: Reed Elsevier, Springer, Wiley, and Informa.plc (also known as Taylor and Francis) (Crow, 2006). Three of these companies (Reed Elsevier, Wiley, and Informa.plc) are publicly traded corporations, while Springer is owned by private equity firms.

All are in the for-profit sector, and the profits are enormous. As reported in the Economist (2011): “Elsevier, the biggest publisher of journals with almost 2,000 titles, cruised through the recession. Last year it made £724m ($1.1 billion) on revenues of £2 billion—an operating-profit margin of 36%”. Springer’s Science + Business Media (2010) reported a return on sales (operating profit) of 33.9% or €294 million on revenue of €866 million, an increase of 4% over the profit of the previous year. In the first quarter of 2012, John Wiley & Sons (2011) reported profit of $106 million for their scientific, medical, technical and scholarly division on revenue of $253 million, a profit rate of 42%. This represents an increase in the profit rate of 13% over the previous year. The operating profit rate for the academic division of Informa.plc (2011a, p. 4) for the first half of 2011 was 32.4%, or £47 million on revenue of £145 million, an increase of 3.3% over the profit of the previous year.

At the same time, revenues available to libraries to purchase the journals of not-for-profit scholarly societies, humanities and social sciences journals, and scholarly monographs, have decreased, so that the high profits of one portion of scholarly publishing is matched by struggles of other, equally important segments of the same overall system.

The widespread commodification of scholarly publishing in the past 50 to 60 years has not occurred without opposition, or without the emergence of alternatives. One of the most significant of these alternatives is open access. The Budapest Open Access Initiative describes the potential of open access as follows:

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal
literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.

This paragraph celebrates an immanent liberating potential for scholarly communication facilitated by the internet. The central challenge for achieving this vision is overcoming the equally immanent potential for increasing enclosure and commodification of scholarly communication that is inherent in capitalist society and can be assisted by the electronic medium, for example through digital rights management.

Struggle between these opposing tendencies at the present time is intense. The following examples are only two among many, included here for illustration purposes only. As of early 2011, the Canadian Access Copyright collective is seeking a multifold increase for rents for copyrighted material, and at the same time a decrease in rights to use these materials, including the assertion that linking to paid-for electronic resources cannot be considered part of normal usage. Meanwhile, and in opposition to this expanding enclosure of knowledge, the Public Knowledge Project has developed free, open source software for journals management (Open Journals System), currently used by thousands of journals around the world, with almost all being fully open access or freely available after a delay period. Nonetheless, alternatives to the expanding commodification of scholarly knowledge are strongly challenged by the inertia of the existing system, which, through an inelastic market (where the supplier enjoys consistent revenues in spite of decreases in the customer’s ability to pay), sucks up all available

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funds through highly constraining and often multi-year academic library licenses. Academic traditions such as tenure and promotion committees’ emphasis on journal impact factors can also present formidable obstacles to change. Journal impact factor favors established journals and publishers. Because impact factor is based on citations and there is generally a delay of at least a couple of years between publication and citation, a new journal would not have an impact factor for at least a couple of years. The journal impact factor is assigned by the private for-profit company Thomson Reuters. Decisions about whether journals are included in Thomson Reuter’s Journal Citation Reports are made by the company; only a fraction of the world’s scholarly journals are listed, and the list tends to favor journals produced by known publishers in the developed world. While many scholars and activists have been working in this area over the past few years, a great many research questions remain unanswered; a list of outstanding research questions can be found in the Open Access Directory.

This dissertation provides a critical examination of the commodification of scholarly publishing in the late twentieth century as a springboard to consideration of the growth of the open access movement as an alternative mode for the distribution of knowledge produced by contemporary scholars in universities and elsewhere.

The dissertation considers key underlying historical trends in western societies and how they have influenced scholarly communication, as well as an examination of the contrasting growth of open access. My analysis also includes discussion of the intersection between open access and Creative Commons, in addition to an economic analysis of key aspects of current trends in scholarly publishing, supplemented by a series of interviews with scholarly monograph publishers. All of this leads to a more focused case study of scholarly publication in the academic discipline of communication.

My work and perspective have been shaped by my background as a professional librarian, as well as years of advocacy for open access and information policy in the public interest. Through my service as a librarian, I have observed firsthand the impact of the trends that I talk about in this dissertation. As an example, in the 1990’s, I worked with an undergraduate student who needed hundreds of dollars worth of interlibrary

4 For example, see the Research Questions section of the Open Access Directory, retrieved Feb. 26, 2011 from http://oad.simmons.edu/oadwiki/Research_questions, a section that I
loans to complete a paper on eating disorders, because the major journals covering this area, being very expensive, were not available in Canada. It was obvious that many students could not afford to do this kind of research, because many institutions, even in a wealthy country like Canada, cannot afford unlimited interlibrary loans for undergraduate students. I began to wonder about the impact on society as a whole if entire areas of human knowledge are unnecessarily inaccessible because of the high cost of the journals. Another time, I remember vividly a vendor telling me that maybe their high-cost journal package “wasn’t for everyone”. Yet, this was a health journal package. What does it mean to say that access to the journal is “not for everyone?” Do some of us not want to enjoy good health? Another example: when university libraries switch from print to electronic subscriptions, sometimes access is restricted to the university’s own faculty and students. This is a substantial loss of access to many others, from alumni, to visiting scholars, to interested members of the public, who have traditionally enjoyed rights to browse university library collections in print.

It was through my role purchasing electronic resources for libraries of many sizes and types, and exploring models and potential models for sharing the costs, that I became aware of the open access movement. The more I thought about the issue, the more I came to believe that the model of shifting funding from purchase for profit, to production for full open access, is not only the best model for disseminating academic knowledge, but is also the most economically sustainable model. For the last decade or so, I have been actively involved in the open access movement, working with colleagues around the world to develop and implement open access policy, business models to support open access, and new roles for librarians for an open access future. While my motivation for conducting the research at hand has grown out of my involvement in the open access movement, I understand that even activists interested in promoting social changes need to base their proposals on sound evidence, and argument. In that sense, while the choice of a research problem, and the critical sensibility that underlies it, have stemmed from my own biography, the study design and analysis of data is guided nonetheless by the canons of scholarly research typically employed in the academic field of communication studies.

The first section of this dissertation situates scholarly communication within the broader context of the trends toward commodification and rationalization in western society in general and in the university context in particular. Selected alternatives to
commodification and rationalization are explored. The next section will feature an overview of open access, including in-depth definitions and articulation of sub-types and related movements, and major open access initiatives. This will be followed by original empirical work on The Dramatic Growth of Open Access, an often-quoted informal study that I have been working on since at least 20045.

This is followed by a macro economic view of scholarly communication that will articulate the potential for transition from an economic perspective, supplementing early major studies that have been conducted in this area6. I then move to a summary and discussion of interviews with ten senior experts in the field of scholarly monograph publishing. The interviews focused on major trends in recent decades, particularly in the areas of technology, commercialization, and bureaucracy, as well as the experts’ recommendations and suggestions for the future of scholarly communication.

My analysis concludes with a case study of scholarly communication in the academic discipline of communication studies.

Scholarly communication is in a time of rapid change. Much has happened between the time this dissertation was written in January 2012 and when it was defended in November 2012. For example, there have been major developments in favor of fair dealing in both the U.S. (HathiTrust, George State Case) and Canada; and the Research Councils U.K. announced a new, stronger open access policy, generating some controversy. With the exception of a section in chapter 4 on open access and Creative Commons, this dissertation covers a time frame up to but not beyond January 2012. Research conducted at different dates in recent years is research conducted on a moving target in terms of numbers. For example, the research reported in chapter 7 was conducted in 2010. Between 2010 and 2012 there were a number of changes, such as the number of journals in media and communication studies listed in DOAJ, and journal ownership changes are frequent. When citing this dissertation the reader is advised to look to sources such as DOAJ for the most recent figures when possible.


For example, see Houghton et al.
Chapter 2. The Commercialization and Rationalization of Scholarly Publication

In the September 2011 issue of the journal Action Research, Tara Leigh F. McHugh of the University of Alberta, and Kent C. Kowalski of the University of Saskatchewan, published an article called “A new view of body image: A school-based participatory action research project with young Aboriginal women”. When faculty or students at either the University of Alberta or the University of Saskatchewan wish to view articles in this journal, access is as simple as going to the journal from a computer authenticated for university access, reading the abstract for free, and clicking on PDF to immediately download the full-text of the article.

Whenever anyone not associated with a subscribing institution tries to access the article, the abstract is still free. However, to access the full text in PDF form, the potential reader is given two options by the commercial publisher, Sage: a) to subscribe to the journal – at rates varying from $91 US for an individual subscription to $719-$799 US for an institutional subscription; or b) “purchase short term access: Pay per Article - You may access this article (from the computer you are currently using) for 1 day for US $25.00” (Sage Journals Online, 2011).

In other words, students and faculty at wealthy universities in the developed world have ready access to the results of this research, because their library subscribes, while for almost everyone outside of these institutions the cost is a significant, if not insurmountable, barrier. A young aboriginal woman using a school computer or public access terminal at a public library, wishing to see the results of this research would be invited to pay $25 for one-time access, for one day, at one computer. School, public, and most government libraries cannot afford access to academic journal subscriptions in the $700 a year range, and so this article is practically inaccessible to teachers, parents, social workers, and government officials even in wealthy regions like Western Canada.
Taking advantage of the access I have through my own university, I can see in the acknowledgements that this research was conducted by doctoral students with support from two of Canada’s research councils, the Canadian Institutes of Health Research and the Social Sciences and Humanities Research Council. The list of people who are invited to pay-per-article at $25 includes the taxpayers who fund the research councils and a significant portion of the university budgets, as well as the staff at the research councils. Outside the wealthy west, the economic barrier is even larger.

It is ironic that participatory action research results are reported in a manner that is inaccessible to participants, those who are motivated to help the participants take action towards better lives, and those who funded the research. This is not the exception, but the norm in scholarship today. Scholars, and those who fund them, generally aim to extend the collective knowledge of humankind and to solve problems, but they often do so by freely handing over the results to a system designed to maximize profit. The remainder of this chapter will provide a brief overview of scholarly publishing, and situate the scholarly publishing system within overall trends towards commodification and rationalization.

The Commercialization of Scholarly Communication: A Brief Overview

Scholarly publishing has had a dual role of commercialism and service to scholarship since its inception. The first scholarly journals began publishing in 1665, with the Journal des Sçavans and Oldenburg’s Philosophical Transactions, the latter intended to serve a dual purpose of expanding access to scholarly knowledge and earning a little money for its publisher (Willinsky 2006, chapter 13).

The appearance of these two early journals within months of each other suggests an abrupt beginning to scholarly journal publishing. However, an argument can be made that the development of serial scholarly publishing was much more gradual in nature, and that this concrete form of the journal represents the process of “black boxing” as described by Latour (1987). Eisenstein (1979, p. 462), in her book The printing press as an agent of change, points out that the printing press was supporting the serial publication of scientific materials (including data) as early as 1500. The formal journal
system advanced the process of refereeing, however this too did not emerge suddenly in 1665. Spier (2002) suggests that the first documented description of a peer-review process may have been in a book called Ethics of the Physician by Ishap bin Ali Al Rahwi (CE 854-931) of Syria. Spier points out that the influence of Francis Bacon’s new method for the generation and assessment of science was instrumental in the development of a discussion group that eventually became the Royal Society of London. It was the letters of the Royal Society that Oldenburg took and published; some would say pirated (Manten, 1980). It was about a century after the Philosophical Transactions were first published before the Royal Society claimed the journal as its own. The referee process that developed in the Philosophical Transactions reflected the debates and discussion of the society as they were already occurring in written form through the letters.

Manten (1980) describes the emergence of scholarly publishing in the context of the beginning of the period of the Enlightenment, a time when the dailies The Tatler, the Spectator, and the Guardian were first published for the enlightenment of cultivated people. Meadows (1980), discussing scholarly societies in the intervening centuries, points out that scholarly societies were primarily concerned with disseminating information among their own members. Manten (1980) describes how private publishing emerged in the 1850’s as learned societies failed to keep up with submitted articles, sometimes resulting in delays of up to five years before an article was published.

Already in the 1600’s:

There were many reasons for the widening gap between teaching and research. First and foremost, the economic prosperity of the new national states of Europe became dependent to a certain extent upon new scientific and technological achievements. As a consequence, the states decided to support research workers with government money. The authorities observed that this money made a more profitable return when spent on the new academies than on the traditional seats of learning (Manten 1980, p. 4).

In contrast with the salaries for research workers, a tradition has developed through which scholars give away their journal articles, their time as referees, and often editing services as well. The origins of this tradition are not clear, although it is
reasonable to assume that the tradition has roots in pre-capitalist artisanal traditions associated with guilds or the ‘free’ labour involved in organizing private voluntary associations of various types. Arguing the latter case, Manten (1980) suggests the system of professionalized scientific research developed from a long-standing tradition of amateurs (Manten, 1980). As Guédon (2001) notes, the journal article from its inception provided an important service for the authors themselves, in establishing the authors’ intellectual property rights (prior claim), even if these typically had more to do with prestige than money. Another possible reason for the origin of this system of voluntary gifting of journal articles and review services is simply lack of financial resources. Meadows (1980) points out that it was not unusual for scholarly societies to barter with each other for access to the journals of other scholarly societies. This strongly suggests that these society journals simply did not have any money with which to pay authors and reviewers.

Today, funded through university salaries and research grants, scholars continue to give away their journal articles and provide peer review, and often editing as well, for free, even to commercial scholarly publishers. This gifting of labour and the results of labour are conducted, not for monetary exchange but rather as a means of contributing to the collective conversation of scholars in a given field. Formal scholarly publications in the form of books and journals play a role in this collective scholarly conversation, forming a storehouse of previously acquired knowledge, and are essential for the individual scholar to earn tenure and promotion. The result is a well of knowledge from which all draw as well as contribute. Royalties are common for scholarly monographs, and so scholars are likely to see monographs as a source of (some) financial reward rather than as a pure gift economy. However, whether the sums involved make sense as a financial incentive seems doubtful in most cases, given the small number of copies of scholarly monographs typically produced today. Some of the senior experts in scholarly publishing that I interviewed in 2012 agreed that the royalties actually paid to authors of scholarly monographs are generally quite low, and one suggested that if this task were examined on the basis of hourly wage, authors might well be farther ahead financially if they put the same amount of time into working a minimum wage job at McDonald’s that is required for writing a book. Textbook and trade publishing are different matters; here, sometimes the royalties are actually quite substantial. Still, the scholarly communication system on the surface is free to the scholar in the developed world as reader. The
journals and books are supplied by the library in a manner that conceals the underlying financial transactions between libraries, publishers, and suppliers.

The mission of the traditional scholarly society publisher is generally aligned with the gift economy and the greater public good. The purposes of a typical scholarly society are to serve scholarship, and often society in a broader sense. If there is a surplus of funds from publishing, this is used to fund other activities that are useful to scholarship, such as subsidizing conferences, educational activities, or graduate scholarships. The still-thriving Royal Society (2012) describes its purpose, since its inception in 1660, as “to recognize, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity”. Aside from its publishing, the Royal Society provides grants to researchers and describes one of its key goals as “science for all” – to restore the interest of young people in science and mathematics, so that people’s lives are enriched and the needs of the economy are met”, for example funding an annual summer science exhibition.

Up until the end of the Second World War, the vast majority of scholarly journals were published by the not-for-profit sector. The Scholarly Societies Project (Parrot, 2009) of the University of Waterloo Library aims to track scholarly societies and their journals from the earliest days, and is a rich source of information about early societies, providing detailed descriptions and linking to websites where available. 30 societies are listed as originating in the years 1323 – 1599, with the numbers of new societies increasing to about 40 – 60 per decade in the 1800’s. The first type of scholarly society publisher to emerge was the general or royal society publisher, followed by more specialized societies. Today, many of the organizations listed are international unions or federations of scholarly societies. Mabe (2003, p. 194) characterizes the period from 1900 to 1940 as one in which almost all scholarly publishing was in the hands of the scholarly societies.

In the decades since the Second World War, there has been a steady increase in involvement by the commercial sector in scholarly publishing. At the same time, growth in the number of scholarly journals has been striking. This is not entirely a new phenomenon. Research on the growth of scholarly journals over the centuries has noted a remarkably constant growth rate of scholarly journals since the 1600’s (De Solla Price, 1963, p. 17), with just a slight increase in the decades immediately after World War II
Mabe and Amin (2001), Mabe, 2003). Mabe (2003) calculates the average annual scholarly journal growth rate at 3.46% per year from the 1600’s to the present day, with an increase to 4.35% from 1946 to 1976 and subsequent fall to 3.26% after 1976.

De Solla Price (1963) points out that this exponential increase in scientific publishing reflects an exponential increase in the number of scientists, in both absolute terms and in relative terms as a percentage of the population. This explains the sense that we have of the immediacy of science – even back in the 1960’s, only about 80 – 90% of the number of working scientists we have record of were working at that time. De Solla Price argues that this exponential curve cannot continue forever, but rather must find some point of equilibrium – if the rate of growth evident in the 1960’s were to continue, within a century he predicted that there would be two scientists for every man, woman, child, and dog on the planet.

As scholarly publishing grows, the difficulties of tracking, indexing, and purchasing the works grows as well – a problem that was already evident when the first scholarly books and journals began to appear, and one that just continues to grow along with the literature. Guédon (2001, chapter 6) describes some of the concepts and tools designed to make it easier for researchers to cope with all of this literature, including the concept of core journals. One of the devices developed to assist with the indexing in the mid-twentieth century was Garfield’s Science Citation Index. From this developed a tool with consequences that had quite a different effect, the journal impact factor, originally designed as a tool for assessing journals that ultimately became a tool for assessing scholars, and one which not only assessed but also entrenched existing core journals.

In addition to continual exponential growth in scholarly publishing, in the decades since the Second World War, there has been increasing involvement by the commercial sector in scholarly publishing and increasing concentration in the market, on a percentage basis. That is, the number of scholarly society journals and publishers continues to grow in numeric terms, but this sector is dropping as a percentage of total scholarly publishing.

As discussed in the introduction, today a very substantial percentage of the world’s estimated 20-25,000 scholarly peer-reviewed journals are published by just four highly profitable companies. The profits continue to grow. In the first quarter of 2012,
John Wiley & Sons (2011) reported profit of $106 million for their scientific, medical, technical and scholarly division on revenue of $253 million, a profit rate of 42%. This represents an increase in the profit rate of 13% over the previous year. The operating profit rate for the academic division of Informa.plc (2011a, p. 4) for the first half of 2011 was 32.4%, or £47 million on revenue of £145 million, an increase of 3.3% over the profit of the previous year.

The U.K. Office of Fair Trading (2002, p. 12) noted that the profitability of commercial science, technology and medicine (STM) publishing was high, not only in comparison with not-for-profit publishers, but also in comparison with other commercial publishers, and that there would be substantial savings for customers if these publishers were to charge average profit rates.

The above-average profits of these large commercial publishers contrast with the present financial situation of universities and the academics who give these publishers their works and services for free. For example, in the U.S., the Association of American Universities (n.d.) has a website section reflecting the 2008 financial crisis, called Universities address the economic recession, which states that "many have taken such actions as furloughs or hiring freezes, pay cuts for senior administrators, and delays of capital projects".

McMillan (2011) comments on discussions at the University of California system in May of 2011, where after three years of furloughs, layoffs, student fee increases and program cuts, the budget was predicted to include a further $500 million in cuts. The American Association of University Professors has a list of “Financial Crisis FAQs” on their website, which states that the current challenging financial situation is being used to justify a number of measures that impact on academics, including “hiring and salary freezes, furloughs, salary cuts, layoffs, nonrenewals, reduction and elimination of academic programs and colleges, revision of curricula, changes in academic policy, elimination of tenure, substantial changes in workload, and more”. Executive Director of the Research Libraries U.K. David Prosser (2011, p. 60) notes the ‘brutal’ cuts to the U.K. higher education sector, including an announcement that over the next few years the state would withdraw altogether from funding teaching in the humanities and social sciences.
The effects of the global financial crisis are being felt to varying degrees everywhere. In 2010, the International Coalition of Library Consortia (ICOLC) reissued its Statement on the Global Economic Crisis, reiterating anticipation of long-term cuts to budgets for libraries and library consortia and a call to publishers for restraint on pricing increases.

Much of scholarly publishing exists in an inelastic market; that is, changes in the abilities of customers to pay have little or no impact. There is no competition in the system, as noted by the U.K. Office of Fair Trading (2002) and the European Commission (2006), among others. One cannot substitute a cheap article on one topic for an expensive one in a must-have science journal that a researcher is depending on for research needed to obtain grants or patents. If the only goal of scholarly communication were profits, this would be a healthy system.

However, from the perspective of serving scholarship, this system arguably leaves much to be desired. The serials crisis has been well documented elsewhere (Association of Research Libraries, 1989), and will not be covered here in detail. In brief, the prices of journals, particularly in the science, technology and medical (STM) areas have been increasing at rates far above inflation over a period of decades, with the result that not even the largest research libraries can afford comprehensive collections anymore, resulting in a loss of access to the scholarly literature for research. The crisis is ongoing, as illustrated by the Research Libraries UK (2010) call to publishers for pricing restraint, stating that if prices are not reduced, some of the largest universities in the UK will need to cancel the ‘big deals’ of some of these journal publishers.

An open letter from the National Science Library of the Chinese Academy of Sciences (2010) illustrates that the crisis is global in scope. If current trends continue, the effects will be particularly strong in the developing world. The National Science Library letter says, “To our dismay and anger, a few international STM publishers, using their monopolistic position, recently demand to raise the subscription prices for their full-text database at a yearly rate of more than 14% for the next 3 years”, and by 2020, to raise the prices for developing countries to the level of those of the developed countries.

While the for-profit sector has taken over a substantial portion of scholarly publishing, particularly journal publishing, there remains a mixed market of not-for-profit
society and learned journal publishers and university presses, which are still involved in publishing over half of the world's scholarly journals (Crow 2006, p. 1). This sector maintains a close affiliation with the mission of scholarship, and their journals are typically cheaper and more cost-effective. For example, Bergstrom and Bergstrom (2006, n.p.) conducted a study comparing journal costs across a range of disciplines, concluding:

For example, in the fields of economics and ecology, the average institutional subscription price per page charged by commercial journals is about 5 times that charged by non-profit journals. These price differences do not reflect differences in quality as measured by number of recorded citations to a journal. For commercial journals the average price per citation is about 15 times that for non-profit journals. Similar price differentials are found across a wide variety of scientific disciplines.

The trend toward commercialization and consolidation in scholarly publishing was particularly acute in the early days of the transition to an online environment, roughly the 1990’s, as smaller and not-for-profit publishers did not have the resources to compete with the larger publishers. Today more affordable options are available. For example, many academic libraries and library consortia now offer free or low cost journal hosting and support services for local faculty and students. The Union of Democratic Communication’s Democratic Communiqué, formerly a print-based subscription journal, is now online and open access, using the free, open source Open Journal Systems hosted by the Florida Centre for Library Automation. This opens up the potential for a more competitive environment for smaller publishers, and, arguably, a renaissance of scholar-led publishing (Edgar and Willinsky, 2010).

While the profits of a few commercial STM journal publishers have grown to above average rates in recent decades and continue to grow even at a time of global financial crisis, other areas of scholarly publishing have experienced decline. Thompson (2005, p. 63) documents how the rise of powerful commercial players in STM has “squeezed the budgets of university libraries with dire consequences for academic publishers...”. In the 1970’s, a scholarly monograph publisher would typically print 4 – 5,000 copies of a hardback; by 2005, due to declining sales of monographs, this figure was reduced about tenfold, to about 400-500 copies (Thompson 2005, p. 93-4). One result of declining sales is that some disciplines or subdisciplines are less attractive to
scholarly monograph publishers. Many scholarly monograph publishers are aiming to survive by moving into other areas such as textbook or trade publishing (Thompson 1980, p. 139).

Brown (2010) explains the dilemma of the university press in the U.S., perceived as outside of the core mission of the university, subsidized for the common good, receiving little by way of attention, opportunities to participate in planning, and resources. When the press is successful, subsidies are cut back. When the press runs a deficit, it is expected to cut back. Yet, Brown notes how the university press can balance a scholarly mission with profit in a way that the commercial press cannot. The university press is more likely to publish important scholarship that may not be of value in a commercial sense. As Thompson (2005, p. 17) notes, young academics need to publish specialist knowledge, while publishers are looking for books with broad appeal. In this sense, the ultimate goals of universities and the commercial sector may clash – for example, the university has a stake in looking for more cost-efficient ways of publishing to enable publication of more scholarship and new formats, while the focus of the commercial publisher is to maximize revenue.

Harley, Acord, Earl-Novell, Lawrence, and King (2010, p. xiv) express concerns about a monograph crisis which may be driving scholars in specialized subfields toward more readily marketable areas of scholarship, and making it difficult for scholars to publish in areas deemed by university presses to be less commercially viable. Withy, Cohn, Faran, Jensen, Kiely, & Underwood 2011, p. 3) note that the crisis of monograph publishing threatens many of the intellectual characteristics most valued by the scholarly enterprise itself: concentration, analysis, and deep expertise.

To summarize, scholarly publishing today is characterized by a small number of STM journal publishers enjoying above average profits in an inelastic market that reaps growing profit margins even at a time of severe cutbacks for the universities where most of the content sold by these publishers is written, reviewed and read by academics, at no cost to the publishers. Scholars and their university libraries are challenged by high and increasing prices and resulting loss of access to needed works. Meanwhile, other areas such as monograph publishing are experiencing crisis due to declining sales as an increasing share of library budgets go to the packages of the STM journal publishers.
There are profound impacts of this system that undermines the ability of scholars in some specialties to publish their work, especially if the work is of extended length.

Productivity, or capture of science & scholarship by expanding capitalism

The ongoing expansion of profit seeking in scholarly publishing is best understood as part of a broad process, rather than something restricted to a small area of cultural life. Marx recognized this by noting that the key to capitalist production:

is not merely the production of commodities, it is, by its very essence, the production of surplus-value...The only worker who is productive is one who produces surplus-value for the capitalist, or in other words contributes toward the self-valorization of capital. If we may take an example from outside the sphere of material production, a schoolmaster is a productive worker when, in addition to belabouring the heads of his pupils, he works himself into the ground to enrich the owner of the school (Marx 1976, p. 644).

The point is, according to Marx, that the production of commodities in capitalist societies is much more than a purely economic process. Insofar as it becomes connected to the systematic production of surplus value, commodity production can influence all areas of life. Polanyi (1957) adopts this idea from Marx in arguing that one distinguishing feature of the market economy from all other economies is the extent to which it subsumes society. Prior to the emergence of the market economy, all societies had economic aspects, and many had markets, however markets and economy were subservient to other social relationships and needs. Polanyi notes how labour emerged as one of three fictitious commodities of the market economy, along with land and money. It is the transformation of labour and land, human society and the means of production, into commodities that creates the conditions that subsume human society, and even the earth itself, into the economy.

Marx and Engels emphasize the dynamism and destructiveness of this relentless push toward commodification. Modern capitalism is a growth machine based on the insatiable pursuit of surplus value, creating powerful competitive dynamics that lead to ongoing revolutions both in productive techniques and in social relations. The making of modern western societies has featured a continuing expansion of paid labour and commodity production into more and more areas of human life, with far-reaching effects.
To live in modern capitalism, as Marx and Engels suggest, in The Communist Manifesto, is to live in a time when “all that is solid melts into air” and “all that is holy is profaned.” It is important to understand in this regard that the expansion of science in the postwar era has occurred as part of a broader expansion of the commodity form into new spheres of Western social life. According to the Marxist economist Ernest Mandel, (1980:249), “invention” has become “a branch of business” only in “late capitalism.”

It should come as no surprise that scholarly publishing has been drawn increasingly into these dynamic and unsettling market relations. For example, De Solla Price describes a break between the period of ‘Little Science’, before the Second World War, and ‘Big Science’, after the war. According to De Solla Price, “…the most abnormal thing in this age of Big Science is money” (1963, p. 92). While the number of scientists was doubling every 10-15 years at that time, in constant dollars, expenditures on science were doubling every 5 ½ years, so that the cost per scientist was doubling every 10 years. De Solla Price calculated that the cost of science was “increasing as the square of the number of scientists” (p. 92). De Solla Price asks, if the first half of the century in the U.S. belonged to the lone, long-haired genius scientist, whether the period after World War II belonged to the scientist “honored in Washington, sought after by all the research corporations of the “Boston ring road,” part of an elite intellectual brotherhood of co-workers, arbiters of political as well as technological destiny”? (1963, p. 3).

Knowledge as property: the creation of a fictitious commodity

Today, we need to add a new fictitious commodity to Polanyi’s list, noted above: knowledge. The short-term nature of high profit rates from technological innovation is based on the classic notion that knowledge is a perfect public good, nonrivalrous in nature (if someone else knows what I know, this does not diminish my knowledge) and nonexcludable (Hess and Ostrom (2007, p. 8) and Drahos and Braithwaite (2002, p. 215), among others. However, while knowledge in intangible form is nonexcludable, the tangible forms of knowledge, whether as books, scholarly journals, or bytes, are excludable. And exclusion is a temptation:

From the point of view of individual profit making, knowledge is the ideal object of propertization since it is non-rivalrous in supply. The same knowledge can be endlessly
recycled to many generations of consumers, each new generation having to pay for its use. The incentives for individuals to seek profit through a redefinition of the intellectual property rules that form the basis of the knowledge economy are great (Drahos & Braithwaite 2002, p. 216).

What Polanyi calls the “great transformation” comes about when the point of the commodity is market exchange, rather than market exchange being a means to circulate commodities that are useful to society. When the primary purpose of knowledge in the form of scholarly journals and books is profit for shareholders rather than sharing knowledge among scholars and societies, this is the kind of radical reconfiguration of social needs described by Polanyi in The Great Transformation.

The term “intellectual property” is relatively new, having entered into popular discourse only in the 1970’s (Vaidhyanathan 2004). The purpose of intellectual property, according to Vaidhyanathan (p. 87), is to create artificial scarcity. On this point, Boyle (2003, p. 12) refers to a second enclosure movement, of the “intangible commons of the mind”, characterized by a remarkable expansion of property rights, including business patent methods, the Digital Millenium Copyright Act, and the European Database Protection Directive, while at the same time old limits to intellectual property rights are under attack.

Hess and Ostrom (2007) situate the enclosure of knowledge within a broader context of new technologies which have made resources which were once open enclosable; not just knowledge, but also the deep seas, the electromagnetic spectrum, and outer space. While there is some truth to the statement that new technologies have enabled new enclosures, it would be more accurate to state that human beings have developed and/or shaped technologies in order to enable new enclosures. Feenberg (1992, 2002) and Bijker, Hughes and Pinch (1987) explain how technology is socially created. Numerous examples and cases study are provided by these authors. For example, Feenberg (2009) discusses the Minitel computer network developed by the French government to provide directory and other official communication. Minitel was hacked almost immediately after it became available and was repurposed for instant messaging, which quickly became its primary use. This is important to understand when examining scholarly communication. For example, while digital rights management
(DRM) is a technological tool, it is one that was developed specifically to artificially create new forms of enclosure.

Mosco’s (1989) concept of the “pay-per” society explains technologies such as DRM in the context of an expansion of commodification. That is to say, the purpose of DRM is precisely to permit enclosure for the purpose of capitalist profit, which similarly increases corporate control. Mosco claims that “pay-per” is a society-wide trend, one that is facilitated by information technologies; he claims that it is more accurate to refer to our present societal state as the “pay-per” society rather than through other terms such as the post-industrial or post-modern society. Information is both a commodity and a means of control in the pay-per society. Things that were once outside the scope of financial transactions have become increasingly controlled by the logic of “pay-per,” increasing the powerlessness of the poor. The $25 charge to view one article for one day from one computer discussed at the beginning of this chapter illustrates pay-per in the context of scholarly knowledge. This is a remarkable contrast with the traditions of public access common to many academic libraries, where anyone could walk in and read print materials onsite at no cost.

Drahos and Braithwaite (2002) situate the gradual enclosure of information through intellectual property rights within their concept of an incomplete project of information feudalism, a movement away from capitalism. Superficially, Drahos and Braithwaite’s information feudalism is very similar to Mosco’s pay-per society, however it is interesting to note that their overall visions of the implications are very different. While Mosco’s pay-per society is an intensification of capitalism, Drahos and Braithwaite present information feudalism as a threat to capitalism; for example, they state: “Ironically, information feudalism, by dismantling the publicness of knowledge, will eventually rob the knowledge economy of much of its productivity” (Drahos and Braithwaite 2002, p. 219).

In other work, I have written about the potential impact of usage statistics as an economic factor (basically the pay-per model) on scholarly communication (Morrison, 2005). Usage statistics can be a useful tool, for example helping authors to gauge readership or libraries to confirm that their access is actually working. However, when reliance on usage statistics as a central factor in making decisions about purchasing or cancelling journals becomes a widespread practice (as is the case at most libraries
today), there are potentially serious implications for reading, and even for what kind of research is done, that merit consideration. Usage-based pricing inevitably tends to discourage use. If every download of an article incurs a cost, it will be tempting for universities with limited funds to implement reading limits for undergraduates, discourage research assignments, or refuse to provide service to walk-in users. If journals and books are assessed on the basis of usage, it is likely that researchers will find it difficult to publish in less popular fields, regardless of importance. For example, while the importance of the environment is broadly understood in our society, the potential readership of scholarly literature on any one of the species under threat of extinction will be limited (excluding the famous and cute species such as whales as koala bears). Since academics need to publish in order to work, this could have an impact on what subjects are studied. Harley et al. (2010, p. xiv) note “concerns that publication challenges in specialized subfields [of history] may be driving scholars toward more readily marketable areas of scholarship”.

The non-scholarly content industries (music, movies, etc.) “have been clear about their intentions to charge for every bit of data…and crush libraries by extinguishing fair use” (Vaidhyanathan 2004, p. 53). Some people and companies in the scholarly publishing industry have also worked to enforce the enclosure of knowledge. For example, Van Leeuwen (1980, p. 266) notes that the common interests of international scientific publishers in fighting copyright policy was the chief purpose of a resolution proposed by Robert Maxwell of Pergamon Press in July 1968 at the International Publishers’ Association. This resolution was the start of the International Association of Scientific, Technical and Medical Publishers (STM).

Copyright and legal affairs remain key issue areas for STM. For example, STM’s CEO Michael Mabe, in a submission from STM to a consultation on the European Institute of Innovation and Technology, Mabe (2011, p. 2-3), argues that publishers require exclusive copyright so that the substantial investments they make in scholarly communication can be recovered, ostensibly to serve the public interest. Mabe does not address the question of how best to ensure that the public which provides the funding for most academic research, the authors, peer reviewers and research participants, benefit from the results of the research.
Two consequences of the movement of capital into the sphere of science are outlined by Mandel (1980). The first is the growth of scientific intellectual labour, reflected in an explosion in universities after World War II, and including an increasing proletarianization of intellectual labour. That is, “the more higher education becomes a qualification for specific labour processes, the more intellectual labour becomes proletarianized, in other words transformed into a commodity…”, and the more the price of this commodity tends to be forced down to its conditions of reproduction (Mandel 1980, p. 263).

The creation and popularity of the Edufactory group and journal, connecting activists within universities worldwide who are protesting growing proletarian conditions, supports Mandel’s prediction. The Edufactory Manifesto (2008) begins “As once was the factory, so now is the university”. Some scientists may be celebrated and influential in Washington and the Boston Ring Road, as De Solla Price claims. But, today, typical science graduates are far more likely to be chasing down ever more elusive and precarious academic positions while simultaneously attempting to pay down mounds of unforgivable debt. For example, quoting the Federal Reserve Bank of New York, the U.S. Department of Education and private sources note that student debt in the U.S. is anticipated to hit the trillion dollar mark before the end of 2011 – debt that can’t be shed in bankruptcy (Cauchon, 2011). Cauchon claims that “the credit risk falls on young people who will start adult life deeper in debt, a burden that could place a drag on the economy in the future”.

Brophy (2011, n.p.) explains the situation for today’s graduate students thus:

Graduate students, faced with diminishing prospects of a secure job in the academy are increasingly confronted with their status as relatively cheap and plentiful labor in the provision of undergraduate education, a factor that creates growing affinities with those whose service work keeps the lecture halls clean, the courses running on time, and the cafeterias pumping out food.

This creeping proletarianization of the professoriate has underwritten an increase in struggles in the post-secondary sector around the world.

The second consequence noted by Mandel is the crisis of the classical humanistic university, above all for directly economic reasons, resulting from a shift in
the main task of the university from developing men of judgment and property to developing intellectually skilled wage-earners (Mandel 1980, p. 261). In the case of the United States, Basken (2008) quotes Diane Auer Jones, who resigned as assistant secretary for post-secondary education in the U.S., as saying “the Education Department is controlled by advisers who have insufficient regard for the liberal arts and instead are intent on judging colleges largely by their ability to provide economically measurable talent for industry”. As discussed above, Prosser (2011) points out that part of the current situation in 2010, a time of healthy profits for large scholarly commercial publishers, was plans to eliminate funding for humanities and social sciences in the U.K. university system altogether.

Irrational Rationalization?

In addition to commodification, publishing is also subject to an accompanying process of market-based rationalization. Developing intellectually skilled wage earners is an excellent example of behaviour carefully planned to achieve rationally calculated goals. Aspects of the system of scholarly communication described in this chapter exemplify modern times combining formal (calculating) rationality with substantive (goal-oriented) irrationality, a concept first articulated by Max Weber (1968, p. 24-5, 85). Weber defines formal rationality as “the extent of quantitative calculation or accounting which is technically possible and which is actually applied” and substantive rationality as “the degree to which the provisioning of given groups of persons (no matter how delimited) with goods is shaped by economically oriented social action under some criterion (past, present, or potential) of ultimate values…, regardless of the nature of these ends.” Weber (1968, 85). The problem arises when society focuses on the instruments of formal rationality, quantitative calculation or accounting, rather than the substantively rational purposes of human action, such as achieving desirable social goods. Leiss (1994, chapter 1) calls this the “cunning of unreason” and describes the essential problem of rationality as the fact that human beings are not rational. Lukačs (1967) wrote about the commodity form becoming dominant in capitalist society as one example of the process of rationalization, and predicted the increasing rationalization of scholarship through increasing specialization.
A participant with a long history working in senior positions for university presses provided the following example in a recent interview (Anonymous, 2011): many university departments expect scholars to publish books in order to achieve tenure. It is common for scholars to seek to turn their theses into a published book as a means of achieving the goal of tenure. In recent decades, academic library budgets have been diverted from purchase of monographs to the purchase of journal packages in STM, as described above. In roughly the same time period, academic theses have become more readily available in universities, at first through electronic packages of theses such as the Proquest Dissertations and Theses database, and more recently through provision of open access theses through institutional repositories. Lacking funds to purchase every scholarly monograph of interest, university libraries instruct vendors to eliminate books developed from theses from approval plans, on the grounds that these are duplications. This erodes necessary financial support for a system that universities are relying on as part of the tenure process. It also leads to gaming of the system, with publishers deliberately obscuring the connection between the thesis and book, through such means as eliminating acknowledgements of participants in the thesis process, such as supervisors and committee members. This practice arguably is in contrast with the academic ethos calling for citation of sources. Each element of this process is rational in and of itself. However, these rational processes work towards incompatible goals. Colloquially, another way of expressing this is to say that the process as a whole simply does not make sense. That is, universities are relying on this system for tenure decisions, and, at the same time, defunding the system. Thompson (2005, p. 175-6) describes the paradoxical situation that universities are basically outsourcing tenure decisions in disciplines focused on monographs to academic presses, and especially to university presses, during the very same period of time when university economic support for scholarly monographs and university presses is diminishing.

Universities, as a whole, are the source for the above average profits of a small group of commercial STM journal publishers, even when universities themselves are facing brutal cuts. The means to this dysfunctionality for universities exemplify instrumental rationality, defined by Weber (1968, p. 24-5) as behaviour that is “determined by expectations as to the behavior of objects in the environment and of other human beings” which are “used as “conditions” or “means” for the attainment of the actor’s own rationally pursued and calculated ends”.

To return to the McHugh and Kowalski article at the beginning of this chapter, it is perfectly rational for the authors to seek to publish in a journal that will be highly regarded by tenure and promotion committees, serving the instrumental value of career advancement. However, publishing in a journal that is not accessible to people who could use the information discovered through this research, is contrary to the value of helping people that is implicit in this kind of research – substantive irrationality, where behavior that is formally / instrumentally rational is not compatible with our basic values.

Sage, Elsevier, Wiley, and other commercial publishers are behaving rationally in pursuing actions to maximize profit, the purpose of existence of their organizations. Universities in times of decreasing revenues quite rationally seek to contain costs through such means as cutting subsidies to university presses. To see how individually rational approaches add up to a system that is arguably dysfunctional for the universities it is meant to serve, it is necessary to consider the whole picture rather than individual elements.

Another aspect to the increasing tendency to formal rationality of assessing scholarly work involves a focus on quantity over quality. For example, Thompson notes how more competition for academic jobs means that scholars are expected to publish two books instead of one to obtain tenure; this rush to publish is in contrast with the time it takes to write scholarly books (Thompson 2005, p. 176-7). Harley and Acord (2011) note that one of the results is a growing glut of low-quality publications, and recommend that we “encourage scholars to publish peer-reviewed work less frequently and more meaningfully. Limit the quantity of work that can be reviewed to remove the incentive for over-publication” (p. 7), including eliminating the requirement of two published books to achieve tenure.

The Georgia State copyright case is one illustration of the irrationality of the current system. The case involves publishers seeking higher rents from use of their works by universities; it is ironic that two of the publishers prominently involved are university presses, Cambridge and Oxford. As Kevin Smith, one of the interviewees in an article in The Chronicle of Higher Education (2011, May 30) puts it:

As it becomes clear that the three publishers who have initiated the lawsuit in search of higher profits are willing to attack the very heart of the system by which
scholars live, academic authors will rightly feel betrayed. The plaintiffs are, after all, asking the judge to fundamentally change the copyright rules for higher education. If the rules in the proposed injunction were widely accepted, fair use in this field of endeavor, supposedly favored, would actually be more restricted than in any other activity. Yet the works at issue in the lawsuit are mostly written by scholars for the use of other scholars and students. If those uses become impossible or exponentially more expensive, which today is the same thing, academic authors will need to reconsider whether they are receiving sufficient benefits for the free labor they contribute to scholarly publishing.

Cambridge and Oxford, unlike U.S. university presses, return a profit to their universities (Thompson 2005, p. 87). This is an example of a system developed through rationality that becomes irrational – a system meant to help universities harms them instead. This illustrates what Marcuse (1964) and Leiss (1994) discuss as the tendency of instrumental rationality, designed to dominate nature, in the end, dominating man. In scholarly communication, the quest for simple metrics to assess quality in academia (the impact factor, # of books published, by which presses), initially meant to help achieve the goals of the academy, has instead become the goals in themselves.

It is important to consider the tendency toward rationalization in our society along with commodification. There is some overlap in the two tendencies, and it can be difficult to distinguish between the two, but the roots are different and the remedies may well be different, too. Both are often present in the same situation. The nonprofit university press is a good example, subject to expectations of cost-recovery (rationalization), which in turns leads to pressure to focus on the market value of scholarly materials (commodification). Because university presses operate in an openly competitive market, there is no clear remedy to the substantive irrationality of this system, Still, some university presses continue to find a variety of ways to combat commodification, for example by advocating for subsidies, or developing more self-consciously commodified product lines designed to provide income to subsidize the publication of scholarly monographs.
Chapter 3: Alternatives to the market

The last chapter emphasized the extraordinary commodification of scholarly publishing in the second half of the twentieth century, resulting in growing constraint on the public dissemination of knowledge. The commercial scholarly publishing system both builds on, and challenges, the gift economy of scholarship. For example, commercial publishers benefit from the free gifting of scholarly articles by their authors and peer review services, while the tradition of scholar-led publishing is losing ground to the commercial sector, shifting the priority of much of scholarly publishing from dissemination of new scholarly knowledge to profit-making. The expanding enclosure of scholarly knowledge and communication since the 1970’s was covered in some depth in the last chapter. By contrast, this chapter provides a brief history of alternative visions of knowledge and communication that have provided a consistent source of opposition to the organization of communications for profit.

The Idea of Communication as a Public Good

The struggle between enclosure of knowledge and information, and the channels through which these can be communicated for private profit or, alternatively, for an imagined public good, is not new. Schiller (1996, p. 3-4) writes:

In the 19th-century United States, criticism of communication institutions and practices was rife and often sharp. The widest and most significant antipathetic current, during the century’s final decades, streamed through labor organizations and oppositional political movements. Lodging repeated protests against the accelerating integration of major media – both the press and the wireline systems of telegraphy and telephony – into the expanding circuits of corporate capital, a broad span of reform groups proposed various collectivist and mutualistic alternatives for the ownership and operation of communications.
This tendency toward enclosure in the nineteenth century was not limited to the press and the physical communication media of the time, but also appeared in an area that we would now refer to as intellectual property, the patent. Schiller (1996, p. 16) claims that the “postbellum decades had seen an unprecedented intellectual and economic enclosure, as a result of the exercise of the corporate patent monopoly…”

One new medium of the nineteenth century inspired a similar sense of the euphoria to what is now possible with the instantaneous communication that we see more recently with the Internet. Writing about the telegraph, the “lighting lines”, which were the first form of instantaneous electronic communication across distances, Czitrom (1982, p. 10) argues:

some became intoxicated with what the telegraph would bring to the future. Always they spoke of a twin miracle: the grand moral effects of instantaneous communication and the wonderful mystery of the lightning lines themselves. “Universal communication” became the key phrase in these exhortations. The electric telegraph promised a unity of interest, men linked by a single mind, and the worldwide victory of Christianity.”

However, in the U.S. the purpose served by the telegraph developed quite differently from this vision. Schiller (1996, p. 8) writes about the development of the telegraph as a social link “joining families and friends in joy and disaster” in other countries, while in the U.S. even a half-century later more than 90% of the use of the telegraph was for business purposes, due to the exorbitant rates. Schiller notes that the main difference between the U.S. and other countries, with respect to the development of the telegraph, was whether the telegraph was part of the Post Office.

In the nineteenth century many people viewed the Post Office as the model of a universal communication system, providing a universal, affordable (if not free) service equally available to everyone, from individuals to businesses. The concept of “postalization” soon became a generic means for referring to universal service; “the demand for postalization of telegraphs quickly came to encompass telephones or, simply, ‘means of communication’” (Schiller 1996, p. 15). A number of bills were introduced into the U.S. Congress between 1866 and 1900 aiming for a “postal telegraph” to counter the monopoly of the privately owned Western Union. The options
presented included a government owned and operated system and a government chartered and subsidized private system (Czitrom 1982, p. 25-29).

Other forms of media have generated similar discussion around whether their control and purposes should be corporate or public in nature. For example, Kellner (1990, p. 30) gives the example of the assignment of radio frequencies in the U.S. in the 1920’s. Radio was beginning to be seen as an important social force, and there were concerns about monopolistic tendencies as the largest commercial players tended to take up the most desirable frequencies. (Barnouw 1968, 250) notes that at one of the Washington Radio Conferences it was “resolved, that it is the sense of the conference that radio communication is a public utility and as such should be regulated and controlled by the federal government in the public interest”.

The difficulty here lies in determining what exactly constitutes that “public interest.” For example, most business groups in the U.S. saw no inherent contradiction between private commercial interests and the “public interest.” Indeed, it was often suggested that the public interest was actually best served by a laissez faire business philosophy. Belief in the free market ran deeply, even in the case of some of the activist political groups of the era. Commenting on the turn of the century Populists in the United States, Williams, as cited in Schiller7, states:

the Populists’ plan to nationalize the railroad, telegraph, and telephone systems was “merely carrying the logic of laissez faire to its classic fulfillment. Given the absolutely essential role of an open and equitable marketplace in the theory and practice of laissez faire, they concluded that the only way to guarantee the cornerstone of the system was by taking it out of the hands of any entrepreneur”

Capitalist production needs shelter from the self-regulating market. However, beginning in the 1890s, a competing view of communication as a vital force in

democratic community life became increasingly popular. In this regard, Czitrom (1982, p. 91-121, p. 91) draws attention to the collective work of Cooley, Dewey, and Park:

In the 1890’s, a trio of American thinkers began the first comprehensive reckoning with modern communication in toto as a force in the social process. Charles Horton Cooley, John Dewey, and Robert Park each ascribed enormous significance to the sum of recent advances in media technology, and each placed the implications he saw at the center of his larger social thought. Together, they construed modern communication as an agent for restoring a broad moral and political consensus to America, a consensus they believed to have been threatened by the wrenching disruptions of the nineteenth century: industrialization, urbanization, and immigration."

In his book, The Public and Its Problems, Dewey (1927), saw the potential of the public8 to form a Great Community in the United States, through education, which he saw as essential to democracy. A famous passage by Dewey from his Democracy and Education reads:

Society not only continues to exist by transmission, by communication, but it may fairly be said to exist in transmission, in communication. There is more than a verbal tie between the words common, community, and communication. Men live in community in virtue of the things they have in common; and communication is the way in which they come to possess things in common.” (Dewey 1915, p. 4)9

The verbal tie between the words common, community, and communication, extends backwards in time to the Latin origin of the word:

the most archaic sense of the word [communication is]: a noun of action meaning to make common to many (or the object thus made common). The notion of common participation suggested a communion, and the two words shared the same Latin root, communis (Czitrom 1982, p.10-11).

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8 Dewey saw the public as emerging only from conflict.
In other words, Dewey’s connection of communication and community reflects a revival of the original concept, rather than the invention of a new idea. Dewey and Park both experimented with creating new forms of newspapers, ones designed to inform readers, in contrast to the corporate controlled newspapers of the times, which were widely perceived as serving the interests of affluent elites.

My point in this brief discussion of non-market conceptions of communication is to highlight how opposition to the private enclosure of ideas, information, and communication, is nothing new. Rather, it is a struggle that has taken many forms over the centuries. There are different conceptions of what the purpose of the struggle is, ranging from freeing communication from corporate interests; to serving the purposes of democracy, and creating Dewey’s Great Community; to providing a generic infrastructure to equally serve the needs of all capitalists, thus fulfilling the vision of laissez faire. Mechanisms to support universalism in communication or “postalization” in its various forms generally posit government involvement, whether through “public” services owned and operated by the government or services chartered and subsidized by the government. However, there are certainly other conceptions of “public” communication that do not involve governments. For instance, Schiller (1996) points to the important role played by labour organizations in the fight for postalization of the telegraph, and notes that the Brotherhood of Telegraphers proposed that the telegraph be constituted as a collaborative system under their control (p. 14).

Virtual communities

The work of more contemporary scholars points to signs of the potential emergence of something similar to Dewey’s “Great Community” in the virtual communities springing up on the Internet. For example, Bakardjieva (2009) presents the results of a study of Internet users in Calgary, where she found that one of the common uses of the Internet by a wide variety of participants was subactivism, that is activism that is rooted in the everyday life of the participants, e.g. taking part in a local fund-raising project, parent volunteering, writing to the Prime Minister, “disseminating information” or what some would call lobbying.
Similarly, Feenberg (2009) describes the enabling of virtual communities, whether the focus of the community is political, cultural, or otherwise, as a major emancipatory feature of the Internet, and one that is often overlooked. Previous communication technologies have tended to enable either one-on-one communication (telephone) or mass one-way communication (television, radio); the way that the Internet makes it easy for groups of people to connect for all manner of social purposes is a unique contribution, and an important one, as community and communication are essential to human beings.

Salter (2003) situates the potential of the Internet for informal political discussion in the notion of peripheral communication in Habermas’ core / periphery dichotomy of the public sphere. The informal sphere corresponds to civil society, and is a means by which issues that arise in the private spheres of lifeworld can be amplified into the core public sphere (this is very similar to Bakardjieva’s (2009) concept of subactivism). The underlying structure of the Internet that facilitates this community development, and hence supports new forms of political activism, is its decentralized nature, providing for many-to-many communication making it easy for all participants to contribute (c.f., Abbate, 1999).

A number of writers foresaw the social potential of the new media at an early date, including Enzensberger (1974), who discussed the possibilities for media as emancipatory from a socialist perspective, particularly new media with the characteristics of decentralization, with every receiver a potential transmitter. Enzensberger claims that it would be naïve to think that the hardware or software on its own can accomplish emancipation. Older communication technologies, including radio and television, could have been developed for two-way communication; that they were not reflects a social choice, based on the capitalist system. Enzensberger claims that effective use of the medium requires organization, and fully effective use requires a socialist system. However, according to Enzensberger, the Marxism of his day lacked a theory of the media and the political left seemed unable to use the media effectively. Marxists and socialists had mounted effective criticisms of media but failed to see the emancipatory potential of media technology. For instance, one democratizing potential foreseen by Enzensberger comes with audiovisual technology. Film and television carry the potential to allow those who may not be comfortable with writing to actively participate in public life, as well as to document their working conditions.
More recently, a number of writers have described the effective use of the Internet by New Social Movements (NSMs), such as the anti-globalization movement. Salter (2003) notes that NSMs take advantage of the Internet to disseminate information cheaply and efficiently, in a manner that allows for ongoing interaction. Similarly,

van de Donk, Loader, Nixon, and Rucht (2004) describe early research on the use of the Internet by social movements. They found that social movements were using the Internet as early as the 1990s. Indeed, one study conducted in 1997/98 found that 2/3 of the social movements under analysis had websites. The authors’ conclusion was that it was the larger social movements that were most likely to take advantage of the Internet; this is in contrast to Bakardjieva’s findings of commonplace subactivism. (The difference may reflect increasing comfort with the Internet by the population at large in the interim--5 years is a long time in Internet history).

This is not to say that the internet was only being used by activist groups associated with virtual communities, or social movements, of the political left. Kahn and Kellner (2005) emphasize that the internet is contested terrain, and that the successful use of the internet by social movements on the left is matched by political activism on the right. However, Kahn and Kellner suggest that there is potential for micro-groups to connect with each other using the internet, perhaps creating a bridge over the divisions among the left in recent decades, due to factors such as the turn to identity politics. One possibility for such connection would be the formation of umbrella groups that can play a role in allowing diverse groups to communicate. Salter provides an example by noting the work of the Association for Progressive Computing, which acts as an umbrella organization facilitating the work of other social movements (for example, through its ActionApps), in addition to its unique focus of lobbying for future shaping of the internet for progressive purposes. In any case, as Feenberg (2009) argues, virtual communities are forming online and this is significant because “community is the primary scene of human communication and personal development” (p. 80).

Yet, is a virtual community in any meaningful sense of the word really possible? Borgmann (2004) examined virtual communities mediated by the Internet, such as the Whole Earth ‘Lectronic Network (The WELL). The WELL was one of the earliest online communities, which started up as a dial-up bulletin board service in 1985 and is still active; some of the members went on to meet face-to-face and developed communities
that spanned the virtual and material environments. Borgmann is pessimistic about the possibility of real virtual communities, concluding that the internet can serve as an instrumental means that can support communities through extending communication at a distance, but that virtual communities are impossible. One of the key challenges he sees to virtual communities is the increasing commodification of the internet; he suggests that effective virtual communities need a non-commercial server, and a staff to provide support. This view is reminiscent of Enzensberger (1974), who saw organization and a fully socialist system as necessary for full development of the capacities of new media.

Barney (2004) is similarly dubious about the possibilities of forming real virtual communities. Physical communities need physical spaces in which to meet, and physical things (such as tables) around which to gather. Sclove (1995) notes that the physical infrastructure needed for community development may be lacking even outside of the internet; suburbs do not have convivial meeting places, and fast food chains discourage lingering. Borgmann and Barney (2004) raise an important question about what community is; the answer to this tells us about what communication is for. Throughout the twentieth century, a number of writers have challenged what they perceive as the one-sided positivistic / rationalistic emphasis of modern society and they have raised some interesting possibilities for a more holistic society and world-view. For example, the French anthropologist Marcel Mauss (2002, p. 69) highlighted the importance of “gift relationships” in human societies as something from the past that can help to offset the dreary economic and social routines of modern life. As Mauss explains:

…we can and must return to archaic society and to elements in it. We shall find in this reasons for life and action that are still prevalent in certain societies and numerous social classes; the joy of public giving; the pleasure in generous expenditure on the arts, in hospitality, and in the private and public festival. Social security, the solicitude arising from reciprocity and co-operation, and of the occupational grouping, of all those legal entities upon which English law bestows the name of ‘Friendly Societies’ – all are of greater value than the skimpy life that is given through the daily wages doled out by employers… Mauss (2002, p. 69)

Writing in the 1980’s, Rudolph Bahro (1984) promoted a somewhat similar critique of modern life, based on the environmental imperative of finding new ways to
live. Bahro argued that we need to quit the approach of ever-expanding growth and learn to live within our means; otherwise we are heading for ecological catastrophe. Not only is this the way to ongoing human survival, according to Bahro, it is also the means to achieving maximum individual growth. In this regard, Bahro advocates the subordination (but not elimination) of technology. His view is that our aim has to be the ‘reconstruction of God’ – in other words, the kind of regulation which can only come from the re-creation of spiritual equilibrium, with those levels of nature neglected by Marx where human consciousness comes into contact with the external world. This is a radical environmental communism in opposition to the party and state-based forms of socialism and communism that existed in Bahro’s time.

In my view, Bahro’s (1984) view of radical communism bears some resemblance to Sclove’s (1995) vision of strong democracy. An analysis of the commonalities of strong democracy and communism is one means of approaching the task of overcoming the divisive duality of democracy / communism in order to move towards a more holistic society. Some of these commons elements are the overarching themes of modernity, industrialization, and bureaucracy and the common political discourse of power belonging to the people. The commons is an emerging discourse of particular relevance.

The information / knowledge commons

The first section of this chapter provided a brief outline of the historical nature of the struggle between enclosure of communication in its broadest, most inclusive sense of knowledge, information, and the struggle to maintain a sense of communication as a public good or vital element of community. This section outlines a new form of these struggles, against a “second movement of enclosure” of the commons in the realm of communication.

By the phrase “second movement of enclosure” I mean to reference the older enclosure of commons land in England in the early years of capitalist industrialization. In this regard, I am persuaded by Boyle (2003) that we are living through a second enclosure movement today, only now an enclosure of the “intangible commons of the mind” rather than the tangible common land and resources found throughout European feudalism. Boyle argues for the affirmative construction of the “public domain” in the
areas of knowledge and communications. There is a tension in his view between the older idea of the public domain, as a term used historically for physical property (land), and the more recent interpretation of public rights introduced into copyright law with the Berne convention. Boyle suggests looking at the environmental movement as an example of how to go about creating the public domain as an effective counter-concept to this new enclosure movement, pointing out how early writers on the environment first promoted the concept of the environment as a public good, or public resource, with activists then garnering support. Boyle touches on a related concept, that of the public trust doctrine; going back to the time of Roman law, the idea of the “public trust” is that some things cannot be owned either by private citizens or the government, such as access to rivers or beaches; the government can only hold these in trust for the citizenry.

Bollier (2007) and Hess and Ostrom (2007) describe the rise of a new commons paradigm in the 1980’s, at first focusing on environmental issues, such as common management of things like land and fisheries. Bollier (2007) notes a steady rise in the scholarly literature on the commons since the publication in 1990 of Elinor Ostrom’s landmark book, *Governing the Commons*. Hess and Ostrom (2007) describe the “striking suddenness” (p. 3) of the popularity of the concept of the “knowledge commons” beginning in the mid-90’s, as people began to note commons-type issues with the internet (such as overuse, pollution and degradation, and issues with sustainability). Hess and Ostrom (2007) outline two intellectual histories of the commons, with ideas of the knowledge (or information commons) flowing from both. In addition to the first enclosure movement, which involved commons lands in Britain, in the United States the concept of the commons was associated with free speech and democracy, the town hall. Benkler, another theorist of the commons, discusses computer interoperability, open sciences, and collaboratories in this second sense.

Hess and Ostrom (2007) outline two categories for commons resources: subtractability (also called rivalrous / nonrivalrous), and exclusion. Knowledge is not subtractable (nonrivalrous); an idea (or a scholarly work in electronic format) can be shared with no loss to the sharer. Knowledge has traditionally been considered the quintessential public good because it was considered nonexcludable. However new technologies such as digital rights management have made exclusion a possibility.
Knowledge has been called a “cornucopia of the commons” (Bollier, 2007), that is, the more knowledge is shared, the more valuable it is. By contrast, Hess and Ostrom cite Michael Heller on the “tragedy of the anti-commons” in the knowledge arena, that is, “the potential underuse of scarce scientific resources caused by excessive intellectual property rights and overpatenting in biomedical research” (Heller, 1998).

In *Free Culture*, Lessig (2004) presents the case for the Creative Commons (CC), as one solution to the problems with increasing enclosure of creative works of all kinds through repeated extensions of copyright terms and expanding limitations on reuse of works, presenting cases where these limitations prohibit creativity, such as movies that cannot be made or distributed because of the sheer cost and complexity of rights clearance. CC enables creativity by providing people with a means to indicate that they wish to share their work, and to specify the conditions for doing so, using a simple web-based system that involves creating a license with a few simple clicks. CC provides a means of waiving the automatic, extended copyright that otherwise applies to all works created by countries that are signatory to the Berne convention and/or the World Trade Organization. Creative Commons is a step toward a vision of the global knowledge commons where humankind’s collective knowledge is readily available to anyone, anywhere, supporting a society where the priorities are community and environment, meeting human and social needs, a society where priorities are decided collectively, whatever form such a society might take.

It will take considerable time to fully develop our understanding of what a future commons should or could be. In my view, it is important to have a broad-based conversation about the commons, rather than prescriptive approaches (see Morrison, 2011). One reason for suggesting a broad-based, long-term conversation is so that alternative world-views, such as traditional knowledges, can be included. For example, a world-view that takes into account that human beings are a part of, and dependent, on

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the ecosphere, rather than stewards or owners of the earth, is a view that aligns well
with some indigenous perspectives, but not western approaches. Indigenous
perspectives offer an important point of reference for understanding the rationale for
shifting perspective, from the idea of humans as owners of the earth as property, to
humans as a part of an interdependent ecosphere. From the air we breathe to the
weather that we experience, the physical environment arguably provides the greatest
examples of the continuing relevance of the idea of “public” goods and resources. That
lesson was not lost on theorists such as Dewey, Park and Cooley, early in the twentieth
century, who sometimes adopted the metaphor of ecology in their discussions of culture
and society. Communications, for these theorists, was an indissoluble aspect of the
cultural and social environment that human beings inhabit. In that sense, communication
was necessarily a “public” resource, almost by definition. The enclosure of
communication by private interests carried the threat of undermining the social and
ecological balance of democratic public life.

The vision of a “knowledge commons” outlined by the Budapest Open Access
Initiative (BOAI), discussed in the introduction to this dissertation, is a contemporary
example of an initiative that surely would have drawn the approval of Dewey, Park and
Cooley. Once more, my point here is to situate this seemingly contemporary initiative in
the context of an older critical tradition. A similar vision, focusing on the area of medicine
and the life sciences was articulated in 2001 by the Public Library of Science in the
Open Letter to Scientific Publishers, signed by thousands of researchers around the
world, which states:

We support the establishment of an online public library that would provide the
full contents of the published record of research and scholarly discourse in
medicine and the life sciences in a freely accessible, fully searchable, interlinked
form. Establishment of this public library would vastly increase the accessibility
and utility of the scientific literature, enhance scientific productivity, and catalyze
integration of the disparate communities of knowledge and ideas in biomedical
sciences.

The authors of the Public Library of Science Letter and BOAI emphasize that key
to development of a knowledge commons is open access to scholarly literature, a
concept that will be discussed in depth in the next chapter. The vision presented in the
Public Library of Science Letter is still not broad enough. The case study by McHugh and Kowalski cited at the outset of chapter 2 illustrates what is currently lacking. The primary purpose of the research, and of the resulting article, would be to help the young women who participated in the study, not to make money. Once this is understood, it becomes obvious that the article is more valuable to the “public” if it is readily accessible to all researchers, young aboriginal women, social workers, teachers, and government officials, rather than restricted to researchers at wealthy universities.

**State and organizational subsidies and support**

I noted earlier that the Post Office was one of the most popular models for universality in communication in the late nineteenth and early twentieth centuries. The popularity of “postalization” as a potential solution to the advent of new communication technologies offered a powerful rationale for the idea of government involvement in communications, either through government operation or government charter and subsidy.

Like the post office, Universities and / or university research in many regions are subsidized by the public, and grant funding often supports scholarly publishing as well. Some of this support goes directly to scholarly publishing. For example, the U.S. National Institutes of Health Public Access Policy Frequently Asked Questions (2012) website details how applicants can use grant funds to pay publication charges (e.g. traditional page or colour charges). Similarly, Canada’s Social Sciences and Humanities Research Council (2012) has an Aid to Scholarly Journals program, providing funding to Canadian social sciences and humanities on a competitive basis. Provençal (2011) reported that in 2011 77% of Canadian Association of Learned Journals members applied for this program and 75% received funds. Canada Heritage has long had a role in funding publication of Canadian scholarly monographs through university presses and SSHRC’s Aid to Scholarly Publications Program.

Some state support goes to universities in the form of indirect costs. These indirect costs are used to support the overall functioning of the university, including university libraries which pay for subscriptions and purchase of monographs. For
example, Simon Fraser University (2012) describes the typical indirect cost portion of grants as generally 25% of overall grant direct costs.

Non-state funding agencies can also play a role in subsidizing scholarly publication outside the marketplace. For example, the U.K.’s private medical research charity organization The Wellcome Trust (2012) has supported scholarly publication by paying fees for authors wishing to publish in open access journals, creating a new journal called eLife, and partnering in the development of UK PubMedCentral, which is involved with dissemination and preserving research articles.

Institutional subsidies are another form of non-market support for scholarly publishing. As discussed in chapter 2, many university presses benefit from institutional subsidies. Provençal’s (2011, p. 16) report states that 34% of members of the Canadian Association of Learned Journals received cash (not in-kind) support from a university department or administration, and 7% received cash from a university publications fund.

In addition to direct or cash support, institutions can provide indirect, in-kind support. This has been the tradition with the university press, with the contributions going to the university system as a whole, as the authors of any university press are usually primarily from other institutions. The traditional role of university presses is now supplemented at many universities by growing involvement of university libraries in scholarly publishing.

Hahn (2008) reports on a survey of Association of Research Library members which found that the majority of respondents either were involved in publishing activities, or had plans to get involved in publishing, within the next few years. Library publishing services described are different from traditional university press publishing services in that libraries tend to focus on electronic-only publishing, to focus on technical support and hosting rather than editing, and to favor open access business models. Library publishing services are more likely to focus on journals, although some also publish monographs and conference proceedings. Unlike university presses, library publishing services are not isolated in their institutions, but rather tend to be part of larger initiatives that include similar activities such as digital repository services. Similarly, Taylor, Morrison, Owen, Vézina, and Waller (2011) found that most university libraries in Canada were hosting open access journals as of spring 2010, with more planning to
offer such services in the near future. In addition, non-profit scholarly societies continue to subsidize the journals that they publish. Provençal (2011, p. 16) reported that 17% of members of the Canadian Association of Learned Journals received cash subsidies from their societies.

**Collaborative solutions: cooperatives and society publishers**

Scholarly societies have been publishing for centuries, and societies continue to be involved in publishing about half of the world’s scholarly journals. Operating on a model that draws heavily on the gifting of scholarly labour has made it possible for many of these journals to operate on a non-profit basis, although it has become harder to survive without ongoing subsidies from governments. One possible response to the financial pressure faced by non-profit academic publishers is to form cooperatives that will provide academic publishers the kind of economy of scale available to the larger commercial publishers. Indeed, Brown (2010) recommends exactly this solution across universities for university presses.

Crow's (2006) discussion paper for the Scholarly Publishing and Academic Resources Coalition (SPARC) on publishing cooperatives provides in-depth analysis of the potential for, benefits of, and logistics for starting publishing cooperatives. For example, by pooling resources through a cooperative, typical small scholarly societies publishing one to three journals can benefit from professional management expertise, access to capital, and shared marketing. One example of a publishing cooperative is BioONE, through which 126 publishing partners share risks, technology, and marketing opportunities. Created in 1995 by a group including publishers, libraries, and the Scholarly Publishing and Academic Resources Coalition (SPARC), the mission of BioONE (2012) states:

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.
BioOne explores economic models and strategic partnerships that balance the needs of all stakeholders, and currently demonstrates this balance by offering financially sustainable information services in the biological sciences. BioOne supports best practices that increase operational effectiveness and technological standards that integrate its content with a global network of scholarly exchange.

For publishers, BioONE provides a source of revenue, including a portion of subscription revenue and operating surplus.

Project MUSE (2012) is a cooperative that functions in a different manner. Founded in 1995 as a non-profit collaboration between scholarly publishers and libraries, MUSE is produced by John Hopkins University Press in collaboration with John Hopkin’s University’s Milton S. Eisenhower Library. Project MUSE provides a common platform and marketing for journals for 120 university presses and other not-for-profit publishers. Late in 2011, Project MUSE developed the University Press Consortial Collection (e-books), marketed internationally through the International Coalition for Library Consortia.

**DIY Scholarly Publishing**

Willinsky (2006) and colleagues in the Public Knowledge Project have been instrumental in making library and scholar journal publishing a possibility through development of the free, open source journal publishing platform Open Journal Systems (OJS). Edgar and Willinsky (2010, in press) conducted a survey of over 900 journals using OJS and found that many were led by independent scholars; they conclude that OJS may be facilitating a renaissance of scholar-led publishing.

In his blog The Occasional Pamphlet, Shieber (2012), describes a case study of the *Journal of Machine Learning Research* (JMLR), a relatively new open access journal formed when most of the editorial board of the Kluwer-owned *Machine Learning* decided to resign and set up their own journal. At that time, there weren’t many journal hosting options, and so the editorial board, being computer scientists, went about creating their own journal management system, still in use as of 2012. The JMLR ranked at the top in impact factor for its field when it first received an impact factor; currently, JMLR ranks 8th, while the commercial *Machine Learning* is down to 33rd. Shieber describes the JMLR as a very efficient journal; it has never had any direct revenue, although it has
received a couple of donations totaling $7,000. JMLR does not charge for subscriptions, accept advertising, or charge article processing fees. With in-kind support in the form of computer hosting by universities, volunteer labour from the editorial board, and efficiencies created by the automated system which eliminates much of the clerical labour involved with print publishing such as sending out and tracking manuscripts, a journal like this can operate with no revenue.

JMLR is a fully open access journal, as are about half of the journals using Open Journal Systems and many of the journals participating in BioOne or taking advantage of library publishing services. Of the many alternatives to the enclosure of scholarly knowledge for private profit, the alternative that appears to hold the greatest potential for non-profit scholarly publishing is open access. However, the problem of enclosure persists in spite of such alternatives. The vast majority of scholarly publishing is still locked up in subscription based journals, most owned by large for-profit commercial scholarly publishers. Nonetheless, it is important to consider the open access alternative in greater detail, a topic that forms the subject of the next chapter.
Chapter 4: Open access as solution to the enclosure of knowledge

What is open access?

Open access is a simple concept. As expressed by Suber (2010, n.p.), in his Open Access Overview: “Open access literature is digital, online, free of charge, and free of most copyright and licensing restrictions”. Still, like many a simple concept, there is much more to open access than this definition suggests. For one thing, there are numerous sub-concepts within the overall concept that make it difficult to separate open access from related and often overlapping movements and trends. Examples of such overlapping trends are open source, free software, open data, open education, open research, creative commons, and open government. A further complication lies in the muddying influence of a powerful and wealthy publishers’ lobby that is opposed to the idea of open access. To fully understand open access discussions it is essential to know something about this lobby and its tactics. One example, as reported by Giles (2007) in Nature, is the Association of American Publishers’ hiring of a prominent spin doctor, Eric Dezenhall, known as the ‘Pit Bull of Public Relations’. Giles reported, according to e-mails leaked to him, that several executives from Elsevier, Wiley, and the American Chemical Society, met with Dezenhall, who subsequently sent some strategy suggestions, to focus on simple messages such as “public access equals censorship”, and “attempt to equate traditional publishing models with peer review”. Late in 2011, Bill HR 3699, the Research Works Act, was introduced in the United States by Representatives Issa and Maloney (2011). This bill would roll back many of the important gains made by the open access movement, and prohibit the U.S. government from requiring open or public access to the published results of research that it funds. Links to extensive commentary and counter-advocacy can be found through the Open Access Tracking Project (2012). The point here is simply to note that because Open Access is viewed as a threat by powerful commercial interests in publishing it has become a politically contested terrain.
The scholarly, peer-reviewed journal article initial focus of the open access movement. The reason for this focus is that the peer reviewed journal article has traditionally been given away by scholars, avoiding the complexities of royalties associated with scholarly monographs. A movement for open access to scholarly monographs has emerged more recently.

From 2002-2003, a series of international meetings were held in Berlin, Bethesda and Budapest. The purpose of these meetings was to bring together like-minded individuals and organizations with a common desire to make scholarship freely available online, and to work out a common term and definitions. The Budapest Open Access Initiative (2002), the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003), and the Bethesda Statement on Open Access Publishing (2003), all include very similar definitions of open access, so that collectively this is referred to as “the BBB definition” of open access. There is more to the Budapest, Berlin, and Bethesda (BBB) statements than defining open access; each statement includes strategies for, and commitment to, implementing open access. Following is the first and most succinct of the definitions of open access, from the Budapest Open Access Initiative (2002):

By “open access” to this literature, we mean its free availability on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

The only element considered missing from Budapest is immediate open access, addressed in the subsequent Bethesda statement. For instance, when publishers make back issues freely available, they are expanding access, but this is not full open access. To avoid confusion, it is best to refer to this approach as free access to back issues.

There are two ways of providing open access. Publishers can make a work open access as part of the process of publishing. This is sometimes called open access
journals, open access monographs, or gold open access. Or, a work can be placed in an
archive or repository in order to provide open access; this is sometimes called self-
archiving or green open access. These two approaches are compatible. An article can
be published in an open access journal, and also deposited in an open access archive.

There are two key aspects of free in the major definitions of open access, and
there are two corresponding sub-definitions of open access, reflecting this distinction.
Suber (2008b) coordinated the discussion that led to the distinction between gratis and
libre open access.

• gratis open access: free to read / free of charge

• libre open access: free to read / free of charge, and free of at least some
copyright and licensing restrictions / free for re-use

In practice, there are many variations on these themes. There are items that are
free to read online, but not to download or print. There are documents that are free to
read, print, or distribute, as long as the usage is not commercial in nature. Derivatives
are allowed with some open access works, but not others. This distinction is important.
Scholarly communication is in transition. The majority of scholarly journals, whether
subscriptions-based or open access, are neither fully closed nor fully open. Most
subscription-based journals allow authors to self-archive, and many provide free access
to back issues. Open access journals range from “just gratis,” to “fully libre,” with many
access can be seen as a continuum. Libre open access may be optimal from the
standpoint of information dissemination, but it is much better to have a work that is free
to read than one with a toll to access that you cannot afford to pay.
The global reach of open access

*Figure 1: percentage of journals in DOAJ by region 2012*

Figure 1 illustrates the global reach of open access journal publishing. Of the journals listed in the Directory of Open Access Journals as of January 2012, 40% are from Europe, 23% from North America, 16% from South America, 14% from Asia, 3% from Africa, and 4% from other areas such as the Caribbean and Central America. A detailed breakdown of DOAJ journals by region and country can be found in the Appendix A. *Open access journals by country and region.*
Figure 2. Open access repositories by continent (OpenDOAR)

Source: OpenDOAR (2012). Repositories by continent.

Figure 2 illustrates that the global division of open access repositories by continent is very similar to that of open access journals. The largest portion of repositories are found in Europe, followed by North America. Asia is the third largest source of repositories, followed by South America, reversing the third and fourth positions for journals.

Some of the global benefits of open access are covered by the section of the Budapest Open Access Initiative (2002) quoted at the very beginning of this thesis. To reiterate, the Budapest initiative emphasizes how “the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds” is a valuable public good. More broadly the Budapest initiative emphasizes how the removal of barriers to this literature will “accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich.” The authors of the Budapest initiative state their hope that this will “lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.”
A study by Kirsop et al. (2007) illustrates the difference open access makes for the developing world. Bioline International is an organization dedicated to helping scholarly publishers in the developing world publish high-quality journals in the electronic environment. Downloads from about 60 Bioline International open access journals reached 2.5 million in 2006. On a per-usage basis, this is much greater usage than that reported for the publisher-mediated program HINARI, which provides limited access to developing countries for the subscription journals of the developed world on a charitable basis. The 2006 article downloads for HINARI was about 3 million for about 3,000 journals. Without open access or charitable programs, both of which aim to increase access without the exchange of fees, access to the scholarly literature in most developing countries would be virtually nil. Charity programs like HINARI are a significant improvement over no access to the scholarly literature. However, open access facilitates a model of equity in which everyone has access to all of the scholarly literature, and the ability to contribute.

Open access and Creative Commons

Chapter 2 introduced the Creative Commons as a component of the commons, one of the potential alternatives to increasing enclosure of information for commercialization. The vision of Creative Commons (CC) is “nothing less than realizing the full potential of the Internet — universal access to research and education, full participation in culture — to drive a new era of development, growth, and productivity”. (Creative Commons, 2011). At first sight, it seems somewhat ironic that the vision of an organization generally assumed to advance free culture, as defined by Lessig (2004), reads rather like a capitalist’s dream. One might ask why not promote a new era of sharing and collaboration, arguably a primary function of CC licensing, instead of an emphasis on development, growth, and productivity? But the point here is more subtle. As a contested political and economic terrain open access does not fall conveniently into

11 This section was revised and updated after the dissertation defence, hence reflects more current debate in this area (up to November 2012) than is the case for the rest of this dissertation (substantially completed by January 2012). This note is included to explain any discrepancy in the time frame for this section compared with the remainder of the dissertation.
a stereotypical “left versus right” political spectrum. Indeed, in the same way that the turn of the century Populists in the U.S. wanted public control of telegraphy to better serve the capitalist goals of innovation and growth, Creative Commons has also embraced a view of the free dissemination of information as a potentially valuable tool to stimulate widespread economic growth. Founded in 2001, the official goal of Creative Commons is to overcome the barriers created by traditional copyright to the kinds of sharing of information made possible by the Internet. CC provides an easy means for authors and other creators to license works for sharing in a way that is easy to read and comes in forms designed for human reading (both text and icons), machine reading (e.g. one can do a flickr search and limit results to CC licensed materials), and legal code.
Figure 3. Creative Commons licenses

**Attribution CC BY**
This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

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This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to “copyleft” free and open source software license.

**Attribution-NoDerivs CC BY-ND**
This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.

**Attribution-NonCommercial CC BY-NC**
This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don’t have to license their derivative works on the same terms.

**Attribution-NonCommercial-ShareAlike CC BY-NC-SA**
This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

**Attribution-NonCommercial-NoDerivs CC BY-NC-ND**
This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can’t change them in any way or use them commercially.

We also provide tools that work in the “all rights granted” space of the public domain. Our CC0 tool allows licensors to waive all rights and place a work in the public domain, and our Public Domain Mark allows any web user to “mark” a work as being in the public domain.

From: Creative Commons (2011) http://creativecommons.org/licenses/ CC-BY
There is much overlap between Creative Commons and open access. Some open access advocates consider the CC attribution only, or CC-BY license, to be equivalent to the Budapest definition of open access. That is, the work must be appropriately cited and attributed, but otherwise all other uses, including commercial uses, are allowed. For example, the Scholarly Publishing and Academic Research Coalition (SPARC) Europe and the Directory of Open Access Journals (2011) require the CC-BY license for a journal to be given the SPARC Europe Seal for Open Access Journals. The Budapest Open Access 10 document, released in October 2012 states: “We recommend CC-BY or an equivalent license as the optimal license for the publication, distribution, use, and reuse of scholarly work”; “we recommend CC-BY for all OA journals”; and “when possible, funder policies should require libre OA, preferably under a CC-BY license or equivalent”.1 The recommendation by this group of leaders of the open access movement that research funders require libre OA, preferably CC-BY, suggests that it would be wise to thoroughly analyze the consequences of such a decision, particularly in light of the summer 2012 decision of the Research Councils U.K. (2012) to adopt an open access policy requiring researchers to use a publisher CC-BY option where one is available.

The Open Access Scholarly Publishers Association’s Why CC-BY2 webpage presents a succinct explanation of the popular arguments for encouraging use of CC-BY. The next section examines these arguments in detail.


2 Open Access Scholarly Publishers Association Why CC-BY? No date of publication is given; the first comment on this webpage, which might be considered controversial, is dated October 23, 2012, suggesting that this page was posted recently, perhaps after the BOAI10 recommendation of CC-BY as the optimal license for open access. Retrieved November 23, 2012 from http://oaspa.org/why-cc-by/
Arguments for and against CC-BY

The OASPA Why-CC-BY? page highlights the human genome project as an illustration of the potential for advancing knowledge through open sharing of knowledge and data. A key problem with this argument is that the human genome project, which ran for thirteen years, was completed in 20033, while the first Creative Commons licenses were issued in 20024. The human genome project demonstrates that the benefits of open sharing are not dependent on creative commons licensing; it does not support an argument that CC-BY is needed for open access.

The OASPA Why CC-BY? page claims that there is an “emerging consensus on the adoption of CC-BY”. This is supported by the BOAI10 recommendation of CC-BY. However, the evidence does not support this. In June 2012, just months before the release of the BOAI10 recommendations and publication of the OASPA Why CC-BY? page, Suber (2012) refers to two open access mandate policies (University of Liege and University of Oregon Library Faculty) as moving to libre open access with the adoption of the CC-BY-NC-ND license. Only 28% of the journals listed in DOAJ use any kind of CC licenses, and only 11% use CC-BY. Outside of the full open access publishing represented by the journals listed in DOAJ, use of the CC-BY license is much less common. Faculty permissions style open access policies (discussed elsewhere in this chapter), such as the Harvard and MIT policies, specify “not for a profit”, evidence that permitting commercial use is not unanimously supported by scholars. It would be accurate to say that CC-BY users represent a small subset of open access initiatives. It is not accurate to state that there is an emerging consensus on the use of CC-BY.

The OASPA Why CC-BY? page presents the reasons for avoiding the more restrictive Creative Commons elements no derivatives (ND), no commercial use (NC), and sharealike (SA), as follows:

4 Creative Commons. History. Retrieved November 23, 2012 from http://creativecommons.org/about/history
No Derivatives. Derived use is fundamental to the way in which scholarly research builds on what has gone before. One of the many benefits of open access publishing is that elements such as figures from a published research article can be reused, with attribution, as part of teaching material, or in other published works, without needing to request permission of the publisher. Similarly, article translations, image libraries, case report databases, text-mining enhancements and data visualizations are all examples of how additional value can be created by allowing derivative use. (OASPA, Why CC-BY?).

Comment: The first sentence conflates copyright, which covers expression of ideas, and ideas per se which are not covered by copyright.5 The pre-authorization of the creation of derivative works through Creative Commons licenses is very different from the tradition of scholars building on the ideas of other scholars. The remainder of this paragraph on the OASPA page highlights one benefit of using less restrictive CC licenses to pre-authorize the creation of derivatives, that is the creation of new works incorporating portions of other works. It is easier to publish a new work including figures, charts, pictures and so forth from other works if the works in question have used CC licenses that eliminate most of the permission checking. This is a bone fide benefit for scholars and publishers.

However, this argument fails to consider the negative consequences for scholars and scholarship created by pre-authorizing the creation of derivatives. A poor translation could have a negative impact on a scholar’s reputation, whether through the quality of the writing or through other scholars misquoting an inaccurate translation. In some cases, scholarly works include significant input from others, and sometimes works or portions of works created by other; there can be ethical reasons to avoid pre-authorizing the creation of derivatives through less restrictive CC licenses. For example, to return to the participatory action research study on body image with young aboriginal women at

5 World Intellectual Property Organization. Copyright and related rights: frequently asked questions states “Copyright protection extends only to expressions, and not to ideas, procedures, methods of operation or mathematical concepts as such”. Retrieved November 23, 2012 from http://www.wipo.int/copyright/en/faq/faqs.htm#ideas
the beginning of chapter 2, this article includes a page from a local newspaper featuring an article written by one of the young women. The copyright on this page belongs either to the newspaper or to the young woman, or both; if the researchers wished to publish the article in such a way as to allow anyone in the world to create derivatives, they would have needed to address this in the processes of clearing research ethics procedures and in obtaining informed consent from the young women and/or the newspaper.

*No Commercial use.* There are two key problems with a no commercial use restriction. The first is that the definition of what constitutes commercial use is necessarily fuzzy, and so any license which restricts commercial use creates a haze of doubt around various uses that may or may not be at risk of being considered commercial, and in doing so acts as a general discouragement to reuse... More importantly, perhaps, scientific research is not funded by taxpayers and companies purely to serve as a resource to further academic discussion and debate. A major justification for the large-scale research investment is that it will produce new knowledge, the application of which will help to develop and enrich our society. Enabling the commercial sector to have access to and freedom to reuse the findings of published research (as exemplified by the human genome project) is a natural way to seek to achieve these ends. (OASPA, Why CC-BY?)

Comment: A major study conducted by Creative Commons in 2009 found that there were differences in interpretation of the CC noncommercial element.6 Hagedorn et al. (2011) note that the CC noncommercial license refers to “commercial advantages” which are not defined either in CC or in most national laws, and points to a wide range of interpretations of noncommercial, from Wired Magazine’s interpretation that using images in advertising in a for-profit journal is noncommercial, to interpretations that any use involving monetary exchange, even for cost-recovery such as recovering costs of

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printing works, is commercial use and hence prohibited by CC-NC. The Creative Commons study cited above also found that most online users in the U.S. had little understanding of copyright. It is accurate to state that using the NC restriction discourages some re-use of works, including in some cases where the scholar does not wish to discourage re-use. However, if the Creative Commons noncommercial clause is somewhat vague and subject to a variety of interpretations, it does not follow that scholars should give away their works on a routine basis for anyone to sell or use for any commercial purposes whatsoever.7

Not using the NC restriction would in some cases allow for re-uses of works or portions of works in ways that would not be suitable from the perspective of an author, journal or publisher. For example, if there is money to be made from selling an article by an entity other than the original publisher (with whom the author has an understanding), an argument can be made that the author is entitled to royalties. This is a particularly compelling argument for scholars whose employment is precarious and may pay less than a living wage.

The rights of research subjects are pertinent here. The economic rights for the story written by the young aboriginal woman published in the Sage article discussed above belong either to the young woman, or to the newspaper which published the article in the first place, not to just anyone.

One reason for journals to consider using the noncommercial CC license element is that all journals need resources to survive. Reserving commercial rights gives open access journals an opportunity to negotiate for revenue. For example, a commercial company might wish to include an open access journal in an aggregated package of journals. It is customary for such companies to pay subscription based journals to

7 From late in 2011 to early 2012 I participated in a Creative Commons led discussion about the noncommercial clause in preparation for development of version 4.0 of Creative Commons. Myself and others discussed the merits of the existing language and proposed alternatives that would clarify noncommercial. One of my key points is that educational use should not be considered commercial. The end result was that Creative Commons decided to retain the noncommercial clause with the language exactly as is. That is, any attempt to clarify noncommercial simply introduced new possibilities for misinterpretation. This confusion no doubt reflects a variety of views in society about what constitutes commercial use. Although this is hard to pin down, the noncommercial clause is very popular among Creative Commons license users.
include their content in the package, and this could be a needed source of revenue for open access journals as well. Another example is the opportunity for the journal to obtain advertising revenue – allowing commercial use means that a competitor could compete for this source of revenue using the journal's own content. An open access journals system that includes opportunities to financially sustain journals is a stronger system than one that insists that journals give up all such rights through insisting or strongly encouraging ubiquitous CC-BY licensing as the OAPSA Why CC-BY? Page does.

OASPA’s arguments about deriving benefits from public research expenditures repeat the error of conflating copyright, which covers only expression, with ideas. Anyone can read a scholarly work and be inspired to create applications to benefit society without invoking copyright. This paragraph only refers to scientific research and well-funded researchers. What about the researchers who struggle without funding? What about humanities and social sciences researchers? It does not make sense for an open access publishing system to develop to accommodate the publication needs of only a subset of scholarly authors.

Share-Alike. Material distributed under a share-alike license can be used to create and distribute derivative works, but only if those works are shared under the same Share-Alike license. Such licenses are sometime referred to as Viral licenses, as “the licenses spread a continuing use of the licenses in its derivatives”. However, while such licenses can be extremely helpful in building up a collection of content, they also have downsides in terms of the limitations they place on reuse. For example, material distributed within a Share-Alike article could only be combined and redistributed with other share-alike content. In contrast, CC-BY content can be combined with any content, and redistributed according to the terms of that other content, as long as CC-BY’s own attribution requirement is respected. This makes CC-BY something like a Universal Donor blood-type in that it has maximal compatibility. (OASPA, Why CC-BY?)

Comment: share-alike is a restriction; it is correct to say that CC-BY, with less restrictions, means greater potential for re-use of a work. This is a positive benefit of CC-BY. However, here again there is no reflection on the potential benefits of sharealike to scholarship. This paragraph ignores a flip side of the argument; if CC-BY content is the ubiquitous donor, the CC-BY journal is not a ubiquitous recipient. That is, material
that does not use the CC-BY license cannot be accommodated in a work that is fully CC-BY licensed. To illustrate: a chart from a CC-BY journal can be included in a CC-BY-SA journal, but a chart from a CC-BY-SA journal cannot be published by the CC-BY journal as CC-BY. There is a solution to this, including content with different copyright restrictions by indicating the restrictions on the element itself. This solution applies to journals using any or no CC license.

Here are two hypothetical examples of why I consider a CC license including the sharealike element to be a stronger open access license than one lacking this element. The CC-BY license would permit the development of new tools using data mining built on top of the original open access works. These tools could be developed on a commercial basis, and locked behind a paywall. There is nothing in the Creative Commons legal code obligating the creator to make their works freely available (a major difference from open access). An author who gave away his or her work as CC-BY might not be able to afford the commercial tool developed from this giveaway. If journals and/or scholars in the developing world were to adopt this license en masse, it is quite possible that scholars in the developing world would trade off one small advance by making their work more openly accessible, but end up even further behind as scholars in the developed world have access to tools built on their work not available to them. Similarly, scholars in the developing world giving away medical images could find that these images become part of a for-pay commercial point-of-care tool that is not affordable in their home country. Sharealike would address the problem identified in both these situations, as the tools created from the authors’ works would have to be made freely available.

The sharealike provision would tend to prevent this situation from occurring, by clearly stating to potential users that enclosure of downstream copies is not acceptable, and by providing a legal remedy should this situation occur. Tools built on open access CC-BY-SA would also have to be freely shared.

**Potential dangers of CC-BY**

One critique of the approach that I am using with these two examples is its hypothetical nature, and lack of real world evidence. The point is well taken, but one of
the key arguments is that there are potential dangers with adoption of CC-BY en masse. This is largely a future rather than a present vulnerability of open access with mass adoption of CC-BY. If all of the journals listed in DOAJ used CC-BY licenses, this would increase the feasibility of using these journals as tools to create commercial options. However, most journals in DOAJ currently do not use CC licenses at all. For example, Suber and Sutton (2011) found that only 15% of the scholarly society journals listed in DOAJ used CC licenses, compared with 24% of DOAJ overall in an earlier study by Shieber that they cite; of these, many use licenses other than CC-BY. It is a much more difficult task to determine rights in this situation than would be the case if all the journals used CC-BY licenses.

While on the surface the CC-BY license reflects the Budapest open access definition, there are substantial weaknesses of the license that make it less than optimal for sustaining the vision of what open access is meant to achieve, such as the “sharing of the rich with the poor and the poor with the rich”. CC licenses are a very useful tool for open access, but that there is no firm evidence suggesting that CC licensing is necessary for open access, and no one license that is clearly a good fit for all scholarly works. The strongest open access license is CC attribution-noncommercial-sharealike (CC-BY-NC-SA). The noncommercial element, while problematic within the context of the present version of CC licenses, can protect works from commercial exploitation, and the sharealike provision introduces an element of copyleft, ensuring more open access downstream.

One problem with CC-BY as a default for open access is the open invitation to anyone to use scholarly works for commercial purposes. CC-BY allows a commercial company to copy works and sell them. They cannot legally remove the open access originals, but they have no obligation to ensure that they remain available. Journals start and stop all the time, as the need for a particular journal changes, the editor moves on to other interests. If the open access copy of a journal disappears, and there is a commercial version, it is possible that the only way to access some open access journals in future will be by purchasing commercial versions. With widespread adoption of CC-BY, commercial capture for resale purposes would be much more tempting, and it is possible that the commercial interests would take steps to eliminate the free competition.
Here is a hypothetical example of what could happen with ubiquitous CC-BY. If all of the works in the PubMedCentral database were licensed as CC-BY, then any commercial entity could copy the entire database and sell the works that it contains. Such an entity could then lobby the U.S. government to eliminate public funding to PubMedCentral. If this lobbying were successful, then a fully CC-BY medical research commons could be re-enclosed for capitalist profit overnight. A recent announcement by flatworldknowledge, an open access textbooks publisher, illustrates this potential; after five years of providing free access to textbooks online using a CC license (albeit not CC-BY), flatworldknowledge has announced that it will stop providing free access to textbooks as of January 2013.

Journals and CC licenses: selected cases

One conundrum with any CC license that involves restrictions is determining who is retaining rights: in the case of a scholarly journal article, is it the author or the journal that is retaining rights? The copyright notice of the Co-Action Publishing’s open access Journal of Aesthetics & Culture (2011) provides one of the clearer examples, saying:

Authors contributing to Journal of Aesthetics & Culture agree to publish their articles under the Creative Commons Attribution-NonCommercial 3.0 Unported license, allowing third parties to share their work (copy, distribute, transmit) and to adapt it, under the condition that the authors are given credit, that the work is not used for commercial purposes, and that in the event of reuse or distribution, the terms of this license are made clear.

Authors retain copyright of their work, with first publication rights granted to Co-Action Publishing. However, authors are required to transfer copyrights associated with commercial use to the Publisher. Revenues from commercial sales are used to keep down the publication fees. Moreover, a major portion of the profits generated from commercial sales is placed in a fund to cover publication fees for researchers from developing nations and, in some cases, for young researchers.

In the case of the *Journal of Aesthetics and Culture*, while CC licensing is used, it is clear that both author and journal retain certain rights. In the journal’s Editorial Policies there is mention of commercial reprints and advertising. This indicates what the journal is retaining commercial rights. However, this must be inferred, and is not part of the license. A future editor (or journal owner) could change practices with respect to commercial rights.

The journal *Cellular Therapy and Transplantation* (CTT), practices what may be the optimal policy for an open access journal for CC licensing, requiring authors to use a CC license, but leaving copyright with the authors and allowing the author to select the CC license of their choice from among the full set of CC license options. (Thanks to CTT’s Claudia Klotenzberg for pointing to this example)9.

**Articulating the commons**

The policy of encouraging authors to choose their own CC license is one that fits best with a vision of a project of involving as many of us around the planet, for years to come, in a conversation on articulating the commons (Morrison, 2011a). The reason that I believe that this project is necessary and desirable is because the western / developed world approach to intellectual property is arguably part of a very limited world-view. When it comes to consideration of the “natural world” in particular, we would be

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9 The CTT Copyright Notice says:

E. Copyright Notice for Authors and Sponsors (from the CTT Author Guidelines page):

With CTT, Authors retain the copyright of their contributions. This means that Author(s) are free to decide what they wish to do with their contribution. CTT Authors choose a Creative Commons Licence for their contribution so that every reader can see what rights are going along with this specific article.

If an article is published in CTT, the Authors of an article have granted CTT the right to publish it. By agreeing to have the final version published, Authors declare that, in their contribution, rights of third parties have not been infringed on anywhere in the document, including tables and graphics. If Authors wish to republish the article, they are kindly asked to mention CTT as the place of first publication.

Sponsors who wish to solve copyright issues concerning a CTT article: please talk to the Authors since it is them who are the copyright holders of their contributions.
better off broadening conversation to include non-western perspectives, such as the worldviews of indigenous peoples. Consider, for example, the wisdom contained in this traditional world-view, from Charles Royal on Maori creation myth, as quoted in Greg Young-Ing [2006]:

The natural world is not so much the repository of wisdom but rather is wisdom itself, flowing with purpose and design. We can say that the natural world is a mind to which all minds find their origin, their teacher and proper model. Indigenous knowledge is the fruit of this cosmic stream, arising organically when the world itself breathes through and inspires human cultural manifestation... Leading from this view of the world being alive, conscious and wisdom filled is the obvious conclusion that all that we need to know, all that there is to know and all that we should know already exists in the world, daily birthed in the great cycle of life. That is, human cultural production is a natural organic expression arising from the contours, shapes and colours of the environments in which we dwell.

Mauss’ (2002) research on the gift found that gifts in a wide range of societies come with strings, or some expectation of reciprocity, whether explicit or implicit. Ostrom’s (1990) research on the commons found that successful commons involve mutually agreed upon rules and sanctions for breaking the rules. Both these sets of research suggest that a sustainable open access knowledge commons might need some strings attached rather than the simple one-way gift of scholarly work implied in the BBB definition of open access or as expressed through CC-BY.

A global broadening of the conversation around the commons and “intellectual property” is a major undertaking which is likely to take decades; inviting
authors to think about their rights, even through such simple matters as making a decision about a Creative Commons license.

Another complication with CC licenses and scholarly works is that in the case of research data, the attribution element is considered problematic. With large-scale data mining and combination of datasets, attribution stacking becomes unwieldy and a barrier to the kind of scientific progress illustrated by the human genome project. For this reason, the Panton Principles (for example) states that “data related to published science should be explicitly placed in the public domain” 10.

To summarize this section, open access and Creative Commons have much in common, but open access does not map precisely to any one Creative Commons license. There are advantages and disadvantages to scholars with the use of any CC license. CC is an imperfect tool, but a useful one to facilitate communication between creators and end-users about what permissions are available with an open access work. Given the complexities of mapping CC licenses with open access, it might be that the default open access policy that comes with Open Journal Systems which states “Open Access Policy: “this journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge” 11 is adequate for libre open access. Articulating the commons, including questions of appropriate licensing, is a long-term societal project in need of in-depth analysis, which could benefit from consideration of traditional knowledges and the research of Mauss and Ostrom on the gift and the commons.

Open access archives (green OA)

There are more than two thousands open access archives listed in the Directory of Open Access Repositories (OpenDOAR), a service that “provides a quality-assured listing of open access repositories around the world” (OpenDOAR, 2011). OpenDOAR is

adding repositories at a rate of about one per day. This figure comes from my Dramatic Growth of Open Access series (Morrison, 2004 -), as do other figures in this chapter unless otherwise specified. The methodology for this series, links to ongoing data series and commentary, can be found in Appendix B.

The Bielefeld Academic Search Engine (BASE) is a search engine designed to cross-search open access repositories using the Open Access Initiative-Protocol for Metadata Harvesting. A BASE search currently encompasses over 30 million items, a number that is growing by about 2 million per quarter. It would be very difficult to determine exactly how many open access journal articles are covered in a BASE search, and as in some instances it is only metadata, not the actual object, that is freely available. There are many types of objects in repositories, including data and historical records as well as scholarly articles, and there is some duplication. However, it would be safe to say that there is a lot of material available through open access archives, and the amount is growing at a substantial pace.

*Figure 4. BASE growth rate compared with average for scholarly publishing*

This figure contrasts the actual BASE growth rate from 2009 to 2011 with what BASE growth would have looked like at the 3.5% average growth rate reported by Ware and Mabe discussed in chapter two. The 2010 growth rate for BASE was 15%, while in 2011 the growth rate was 30%. In other words, the BASE growth rate for 2011 was an order of magnitude greater than the average growth rate for scholarly publishing.
Repositories can be based at an institution, or organized by discipline. Following are a few examples that illustrate a diversity of approaches that may be conceived to reflect several different models for building a knowledge commons.

PubMedCentral (PMC), hosted by the U.S. National Library of Medicine, is the world’s largest open access repository. A search of PMC from Entrez PubMed, NLM’s free version of Medline, for free fulltext yields over 3 million items. PMC expands access by including works that are publicly or openly accessible, but PMC does more. One of the purposes of PMC is archiving of the medical literature in electronic form. Preservation of the medical literature has long been a mandate of the U.S. National Library of Medicine. PMC carries this function into the online environment. PMC archives materials in XML format, for preservation purposes. An advantage of XML is that it allows PMC to facilitate linking, from Entrez PubMed to PMC and back, from one article within PMC to another, and to other U.S. National Library of Medicine resources such as the Genome database.

PMC is designed to become an international collaboration of digital archives specializing in medicine and allied health sciences. The vision is one of every country contributing the results of their own research, and hosting a local archive of the whole of PMC. So far, international PMC’s are operational in the U.K. (UKPMC) and Canada (PMC-Canada). Discussions and/or testing are in progress on the creation of more PMC archives in other countries, including China, Japan, South Africa, and Italy (PubMedCentral, 2007).

arXiv.org is an e-prints server for physics, mathematics, computer science, quantitative biology and statistics. Launched in 1991 by Paul Ginsparg, arXiv is the world’s oldest and second-largest open access archive. The main arXiv server is hosted by Cornell University Library, with 18 mirror sites in 15 countries. Self-archiving in some areas of physics, such as high energy physics, is nearly 100%. arXiv is heavily used; connections statistics of over a million per day on the main server alone are not unusual. arXiv builds on a preprints culture in physics. arXiv e-prints are what physicists tend to read, while relying on the final published version for certification purposes.

RePEc, Research Papers in Economics, is a large collection of papers in economics, distributed in many institutional repositories. Economics is a field that shares
with physics a long history of sharing of working papers prior to publication. RePEc relies on a model of international volunteer collaborators. E-LIS, the open archive for library and Information studies, follows a similar model.

There are hundreds of institutional repositories around the world, mostly in universities. The Association of Research Libraries (2006) conducted a survey that found that more than 30% of ARL libraries had an institutional repository in 2006, and it was anticipated that more than 55% would have an operational IR by the end of 2007.

Searching for the largest repositories through OpenDOAR reveals the global reach and wide variety of the institutional repository movement. The numbers can be misleading, as some archives are fully open access, while others feature a mix of freely available metadata and open access items. Dspace@Cambridge contains a variety of materials, including a substantial dataset of small molecules. The Aristotle University of Thessaloniki Repository includes tens of thousands of theses, articles, papers and photos from students and faculty at the university. DSpace at Vidyanidhi, an institutional repository for the university at Mysore, contains more than 50,000 doctoral theses. The National Taiwan University Repository provides access to the research output of the university, more than 45,000 items.

SHERPA RoMEO Publisher copyright policies & self-archiving provides a summary of permissions normally provided for self-archiving in publishers’ copyright agreements. This is a useful tool for authors looking for suitable venues to publish in when they would like to make their work open access, and for authors and archives staff alike to look up publishers’ policies. A list of publishers offering paid open access as an option is available as well.

As institutional repositories are relatively new, key issues are education, promotion, content recruitment, copyright / author’s rights, and open access policy (see policy section below). There are also emerging issues with development of the technology so that it will be easy to use and attractive for users.

Occasionally, deposit of one item in multiple repositories is seen as an issue. For example, an author may wish to deposit in both an institutional and subject repository; in some cases, authors may have more than one institutional repository with which they
are affiliated. Also, a document with multiple authors may be placed in many repositories. While multiple deposits are not necessary due to the availability of searching across repositories using the OAI-PMH protocol, multiple deposits are desirable from the point of view of preservation, following the principle that multiple copies decreases the likelihood that documents will become inaccessible in the future. There are workload issues with multiple deposits, but these may be mitigated with the full deployment of tools such as SWORD and support.

Open access journal publishing (gold OA)

As of 2011, there are over 7,000 fully open access peer-reviewed scholarly journals listed in the Directory of Open Access Journals (DOAJ), and the number of titles is growing by about 4 per day. DOAJ is a vetted list managed by librarians at Lund University in Sweden. Potential titles are vetted for open access status. To be included, a journal must be fully open access; no embargo period is accepted. The journal must also practice peer review or an equivalent form of quality control, such as control by an academic editor. Journals must be active to be included, publishing at least 5 peer-reviewed articles per year, and generally journals must publish at least an issue or two before they are included. DOAJ weeds titles that no longer meet the criteria.

Figure 5: DOAJ titles growth 2004 – 2011 contrasted with average 3.5% growth rate
Figure 5 contrasts the actual growth of DOAJ from 2004 to 2011 with what DOAJ growth would have been at the average scholarly publishing rate of 3.5% annually. Cumulatively, DOAJ increased more than fivefold over this period, while at the average growth rate for scholarly publishing of 3.5%, the cumulative growth would have been only 22%.

Frantsvåg (2010) reports that most open access publishers are very small, with 90% producing only one journal. More than 9,000 journals around the world use the free, open source software Open Journal Systems, developed by the Public Knowledge Project, for journal publishing. About half of these journals are fully open access, and almost all are at least partially open access (for example, by making back issues available for free). Edgar and Willinsky (2010), as noted in the previous chapter, describe this situation as a renaissance of scholar-led publishing.

The Public Library of Science (PLoS) is a small but well-known open access publishing outfit, developed initially for the purposes of open access advocacy and well as publishing. PLoS aims to compete at the top end of prestigious academic publishing, and has been very successful. Four of the PLoS journals are already at the top in their fields by impact factor, a very impressive accomplishment for such new journals.

The commercial sector has played a major role in open access publishing since its inception. The world’s largest open access publisher is BioMedCentral (BMC), a commercial company, with about 200 titles. In 2008, BMC was acquired by Springer, the world’s second-largest scholarly journal publisher. Hindawi is another relatively large commercial open access journal publisher. Hindawi entered the scholarly journals market at a time when academic libraries had no funds available to purchase subscriptions; to some extent, open access was simply a business decision for Hindawi.

Traditional commercial publishers have been making moves towards open access for some time. Initial moves often seem timid or designed to prove that open access is not attractive to authors by deliberately making the open access option unattractive. For example, some of the hybrid subscription / open access models involve charging high article processing fees and offering little in return, such as Elsevier’s sponsored article option, which makes articles free to read if the author pays a fee – but only at the Elsevier website.
In recent months, many traditional scholarly commercial publishers, including most of the largest companies, appear to have made serious commitments to compete in what they must see as an emerging open access market. PLoS began by aiming to compete with *Nature*. Today, it appears that Nature is aiming to compete with PLoS. Nature’s new journal *Scientific Reports*, released in 2010, appears to be a clone of PLoS’ innovative *PLoS ONE*, a general open access journal aiming for rapid publication of all research articles submitted that meet the criteria of sound research. *PLoS ONE* became the world’s largest scholarly journal in 2010, when the journal published 6,749 articles (Morrison, 2011c). *Scientific Reports* not only follows the same publishing model as *PLoS ONE*, it even has exactly the same article processing fee. *Nature* has also expanded its open access choice options (where authors have the choice of paying to make their articles open access), as well as offering more fully open access journals. The *Nature* (2011) Publishing Group (NPG) Library Gateway states: “NPG is actively expanding the open access options it offers to authors, with new open access journal launches and open access options on many subscription journals. The first of these models were introduced in 2005, with the addition of open access options on 11 journals in 2009. Further open access options on a number of journals have been introduced in 2010 and 2011”.

*Springer Open* (2011) is an ambitious effort to provide open access journal offerings across all disciplines; *Springer Open* claims that it will give scholars “the opportunity to publish open access in all areas of science”. Wiley has launched a similar initiative called *Wiley Open Access*. Taylor and Francis announced a major expansion of their open access offerings in October 2011, including *Taylor and Francis Open*, which they say will include a “new series of fully Open Access titles from 2012 in major subject areas” (4-traders, 2011).

Laakso, Welling, Bukvova, Nyman, Björk et al. (2011) conducted a study of the growth of open access journals from 1993 to 2009, and described three phases of growth: The Pioneering years (1993–1999), the Innovation years (2000–2004), and the Consolidation years (2005–2009). Taking into account moves by commercial scholarly publishers into what looks like an effort to seriously compete for an open access marketplace, such as those described above, I argue that the present time can be described as the beginning of the Competition Years for open access publishing.
There are positives and negatives to this increase in commercial involvement in open access publishing. On the plus side, while commercial involvement keeps scholarly publishing within the scope of capitalism, the commodity form changes from the article per se to the service of publishing. This service is temporary, leaving the article itself to become a part of the body of knowledge freely accessible to all. That’s a very strong plus. Another positive is that entry by traditional publishers into competition for an open access marketplace weakens their efforts to lobby against open access. It is hard to make a strong argument for open access being less valuable when you are competing for open access authors.

One negative is that the possibility of new revenue through article processing fees, one of the business models for open access publishing, is attractive to new publishers with a primary goal of profit. Some of these publishers provide high quality services and are valuable additions to the field of scholarly publishing. An organization called the Open Access Scholarly Publishers Association (OASPA) has been developed, and ensuring quality is one of its goals. The OASPA (2011) *Member Code of Conduct* is instructive in that it suggests some of the issues that must have come up; it states, for example, that “Members should not indulge in any practices or activities that could bring the Association or open access publishing into disrepute” and that “Any direct marketing activities publishers engage in shall be appropriate and unobtrusive”, a code that is obviously directed to spamming.

Electronic books are a relatively recent development compared with electronic journals, and so it is not surprising that open access monographs are only beginning to appear. Another reason for the delay is the initial focus of the open access movement on the scholarly journal articles that authors traditionally give away, in comparison with monographs where royalties to authors are the norm. One major project is OAPEN (2011), Open Access Publishing in European Networks, which describes itself as a “collaborative initiative to develop and implement a sustainable Open Access publication model for academic books in the Humanities and Social Sciences.” Another example is Open Humanities Press.
Open access policy

There are more than 200 open access policies as of 2012. Open access policy is almost invariably focused on green, or open access archives, rather than open access publishing, for two reasons. The first is that open access policies apply to the researcher (or scholar), not the publisher. The second is that green policies support wider choice for the researcher, who can comply with the policy by publishing in either an open access or a toll-based journal, and self-archiving a copy of their article for open access. Green open access policies are consistent with the practices of the majority of publishers.

Research funding agencies, particularly in the medical area, have been early adopters of open access policies. From the point of view of a research funding agency, open access just makes sense; more researchers can read and build on the results of the funded research, advancing discoveries in the areas that are of priority to the research funding agency. The results of funded research are more visible, enhancing accountability. Often, funding agencies have very limited access to subscriptions to scholarly journals, so open access makes the research more accessible, even to staff at the funding agency.

Medical Research Funding Agencies’ open access mandate policies

U.S. National Institutes of Health Public Access policy

The U.S.’ National Institutes of Health (NIH), the world’s largest medical research funder with a funding portfolio of about $30 billion per year, was among the first funding agencies to develop a voluntary open access policy, with the Public Access policy of 2004 (U.S. N.I.H. 2008a). It should be noted that Public Access is not equivalent to OA. One of the most important lessons from the NIH early adoption was the importance of making open access required, not voluntary; under the voluntary policy, compliance was dismal – only 4% in the first year. This has been remedied, with a strong public access mandate policy coming into effect in April of 2008. Early indications are that making the policy a requirement has been very successful. According to the U.S. NIH (2008b), the total public access for 2005-2007 before the policy was 19% of all NIH-funded articles
(12% author manuscripts, 7% publishers' final PDF). Estimated compliance from April to August 2008 was 56% (30% author manuscripts, 26% publishers' PDF).

The NIH requires researchers to deposit a copy of their final peer-reviewed manuscript in PubMedCentral on acceptance for publication. Open access can be delayed for a maximum of 12 months. Many publishers are voluntarily assisting authors in complying with the policy, making deposits on behalf of authors. Several hundred journals are voluntarily contributing all of the journal contents to PubMedCentral, some immediately, and others after a delay period.

The immediate deposit / optional release strategy is key to a successful open access policy. If there is an embargo, authors are much more likely to be able to find their final peer-reviewed manuscript at the time it is accepted for publication, rather than months or up to a year later. For the research funder, it is also possible to monitor compliance with an embargoed article without waiting until the end of the embargo period. That is, if the researcher is submitting an application for further funding during the embargo period, proof of compliance with the requirement for public access can be established. The NIH Public Access policy reflects gratis rather than libre open access, although the NIH does encourage libre OA.

The Wellcome Trust, a private charitable organization, is the largest medical research funder in the U.K. The Wellcome Trust was an early adopter of a very strong policy, Open and Unrestricted Access to the Outputs of Published Research. Wellcome-funded researchers are required to deposit a copy of their work for open access in UK-PubMedCentral as soon as possible, but no longer than 6 months after publication. While the U.S. NIH allows up to a 12-month embargo period, a maximum of 6 months is emerging as an international standard. The Wellcome Trust also makes available a fund for article processing fees for open access. Libre open access is encouraged, and when Wellcome Trust funds are used to pay for OA article processing fees, it is required.

Many other funding agencies in the medical area have adopted open access policies, including the U.K.’s Medical Research Council, Canada’s Canadian Institutes for Health Research, the Howard Hughes Medical Institute, and Ireland’s Health Research Board, to name just a few.
The arguments for open access are easy to understand in the area of medical research where the public interest is most obvious. The same arguments apply in every area where public funds are spent on research that is published. Open access serves the interests of the public that funds the research, by speeding up discovery and giving the public rights to access the results of the research that they have funded (taxpayer access). The exception is classified research (which is not published). In my view, the public interest arguments are just as compelling in the areas of environmental science, education, or other social sciences, as they are in medical research.

In 2006, a bill called the Federal Research Public Access Act (FRPAA) was introduced in the U.S., which would require every federal department with a funding portfolio of $100 million or more (11 departments) to develop a public access policy. Efforts are currently underway to re-introduce FRPAA or similar legislation. In 2011, the U.S. Office of Science and Technology Policy issued a “Request for Information: Public access to peer-reviewed scholarly publications resulting from federally funded research”. Along similar lines, France’s Agence Nationale de la Recherche (ANR) (National Research Agency), a general science funding agency, with a 2007 budget of 825 million Euros, implemented an open access policy in 2007 requiring deposit of results of all ANR funded research in a national archive, HAL, at the earliest possible opportunity.

In the UK, all the Research Councils have committed to developing open access policies, and six of the seven councils already have policies in place. The UK Natural Environment Research Council requires that a copy of the published peer-reviewed results of any research they fund be deposited at the earliest opportunity in an e-prints repository; datasets must be deposited in one of their data centres. The SHERPA project maintains a list of Research Funding Agencies’ Open Access Policies, called SHERPA JULIET. There are over a hundred institutional and departmental open access mandates in many countries; a current list can be found in the Registry of Open Access Material Archiving Policies (ROARMAP).

Australia’s Queensland University of Technology was among the first to implement a strong university-wide policy, which states: “Material which represents the total publicly available research and scholarly output of the University is to be located in the University’s digital or “E print” repository, subject to the exclusions noted.”
“Exclusions” include material to be commercialized, or of a confidential nature. The effectiveness of the policy can be seen by a spike in deposits in 2004 (available from the Queensland website), just after the policy took effect.

There are at least two types of institutional open access mandate policy. One type of policy is top-down policy, in which the institution requires that its faculty make their work open access. The Queensland policy is an example of top-down policy. Another type, pioneered by Harvard, is the faculty permissions mandate policy, in which faculty members’ grant to the university nonexclusive rights to disseminate their work for open access. From my perspective, the latter is the optimum for scholars and hence for scholarship, because in addition to expanding open access, this approach also asserts the rights of scholars to their own work. The first development along these lines was the unanimous adoption of an open access resolution by the faculty of the Harvard Faculty of Arts and Sciences, as reported by Mitchell (2008):

In a move to disseminate faculty research and scholarship more broadly, the Faculty of Arts and Sciences (FAS) voted Tuesday (Feb. 12) to give the University a worldwide license to make each faculty member’s scholarly articles available and to exercise the copyright in the articles, provided that the articles are not sold for a profit.

It is important to note that the “not sold for a profit” phrase leaves the door open to charging on a cost-recovery basis. The policy adopted unanimously by the faculty of the Massachusetts Institute of Technology avoids this caveat, clarifying that the articles are to be disseminated openly. In my opinion, the MIT open access policy (2009) is the best one to date, and is repeated here in full:

**MIT Faculty Open Access Policy**

Policy adopted by unanimous vote of the faculty on 3/18/2009:

The Faculty of the Massachusetts Institute of Technology is committed to disseminating the fruits of its research and scholarship as widely as possible. In keeping with that commitment, the Faculty adopts the following policy: Each Faculty member grants to the Massachusetts Institute of Technology nonexclusive permission to make available his or her scholarly articles and to exercise the copyright in those articles for
the purpose of open dissemination. In legal terms, each Faculty member grants to MIT a nonexclusive, irrevocable, paid-up, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, provided that the articles are not sold for a profit, and to authorize others to do the same. The policy will apply to all scholarly articles written while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy. The Provost or Provost’s designate will waive application of the policy for a particular article upon written notification by the author, who informs MIT of the reason.

To assist the Institute in distributing the scholarly articles, as of the date of publication, each Faculty member will make available an electronic copy of his or her final version of the article at no charge to a designated representative of the Provost’s Office in appropriate formats (such as PDF) specified by the Provost’s Office.

The Provost’s Office will make the scholarly article available to the public in an open-access repository. The Office of the Provost, in consultation with the Faculty Committee on the Library System, will be responsible for interpreting this policy, resolving disputes concerning its interpretation and application, and recommending changes to the Faculty. The policy is to take effect immediately; it will be reviewed after five years by the Faculty Policy Committee, with a report presented to the Faculty.

The faculty calls upon the Faculty Committee on the Library System to develop and monitor a plan for a service or mechanism that would render compliance with the policy as convenient for the faculty as possible.

I argue that the MIT policy is the best access policy to date and this raises the broader question of identifying the features of such a policy in a more generalized fashion. In my view, a good open access policy has several key elements:

- open access is required, not requested. There are publishers who oppose open access, and will take advantage of any loophole to make it difficult for their authors to comply with a policy.
• calls for archiving (green) open access. This is inclusive of open access publishing, as an article published in an open access journal can also be deposited in an open access archive

• immediate deposit / optional delayed release – if an embargo or delayed is permitted, authors should deposit as soon as their article is accepted for publication. It is much easier for authors to find the appropriate copy at this point in time, and much easier to check on compliance

• keep embargoes to the minimum necessary – 6 months is an emerging standard internationally, and include language to review the policy with a view to decreasing or eliminating the embargo

• include support for implementation whenever possible, such as commitment to build an institutional repository, or support for open access publishing, effective procedures for monitoring and rewarding compliance

Summary

Open access is scholarly literature that is digital, online, free to read and free of most copyright and licensing restrictions. Open access can be green, when authors self-archive their work for open access, or gold, when the publisher makes the work open access. Open access can be gratis (free to read) or libre (free to read and to reuse). Open access can apply to the works themselves, or to the process of making works open access. When a publisher or journal provides free access to back issues, this is best described as free back issues. Once the articles themselves become free, it is appropriate to refer to the article (but not the journal or the publisher) as open access. There are interrelationships between open access and many other “open” movements and initiatives, such as Creative Commons. Although open access is a simple concept, fully articulating what it means in a way that ensures a sustainable knowledge commons will take further analysis.

The growth of open access is dramatic. There are millions of open access items in institutional and disciplinary repositories, and over seven thousand fully open access,
peer-reviewed scholarly journals. Open access is one means of fighting the enclosure of knowledge that has seen considerable success over the past few years. The commercial sector is highly involved in open access publishing, a tendency that is increasing, however even in this situation, with full open access publishing, the commodity becomes the publishing service, freeing the work.
Chapter 5: Economics of Scholarly Communication in Transition

Prices that libraries pay for subscriptions vary widely among journals; for physics and mathematics publications the cost per character varies by as much as a factor of 40 (Barschall, 1986).

This seemingly innocuous sentence is the beginning of Barschall’s *The cost of physics journals*. Scholarly publisher Gordon & Breach, reported in this article to be the most expensive of physics publishers, did not react well to this statement. They sued Barschall and the publishers of this and a related article, as well as the American Institute of Physics (AIP), and the American Physical Society (APS), in four countries, refusing to follow normal scholarly practice of publishing a refutation in the journals where the initial results were published. The lawsuits lasted for over a decade. Barschall, AIP, and APS were exonerated after Barschall’s death, as recorded by Lustig (2001). Gordon & Breach no longer exists, having been acquired by Taylor & Francis, now owned by informa.plc, but Barschall’s articles are still readily accessible from a Stanford University and Yale University (1997) website which also details the court cases.

Today, despite some considerable opening up of information sources over the past decade, there are still plenty of challenges to locating information. Most scholarly journals are now sold in bundles, often through license agreements that contain nondisclosure agreements, making the kind of per-journal comparison done by Barschall very difficult. Financial information for shareholders of large commercial companies is readily available, but not necessarily easy (or even possible) to parse out for economics analysis, and financial information for privately owned scholarly publishers is not necessarily available at all; this is generally seen as confidential, proprietary Information. Amalgamated Information is available through a company called Outsell – but the price is $1,295 for Mark Ware’s latest 22-page report on *Scientific, Technical and Medical Information: 2011 Market Forecast and Trends report* (Outsell, 2011). Thanks to the
courage and persistence of Barschall, AIP, and APS, it appears to be possible to do research in this area without fear of being sued.

Academic library budgets sustain scholarly journal publishing

That academic library budgets sustain scholarly publishing is a key point in understanding the economics of scholarly journal publishing. Universities, and, to a lesser extent, research organizations, have long been the main producers and the main consumers of the scholarly journal literature, with the revenue flowing through their organizational libraries to publishers. With electronic media, “the contradiction between producers and consumers is not inherent; on the contrary, it has to be artificially reinforced by economic and administrative measures”, as Enzensberger pointed out in 1974 (p. 106). In terms of scholarly publishing, these artificial measures are the academic reward system which artificially props up the entrenched commercial scholarly publishing industry by requiring publication in high impact factor journals, and the inelastic market that keeps the commercial interests engaged due to above average profits, as we saw in chapter two.

Michael Mabe (2011), CEO of the International Association of Scientific, Technical and Medical Publishers (STM), recently affirmed that about 80-90% of the $8 billion in revenue that goes to producers of the world’s peer-reviewed scholarly journals comes from library subscriptions, as reported by Ware and Mabe (2009, p. 16). Ware and Mabe’s analysis is based in part on research by the Research Information Network (2008), which found that journals publishing revenues are generated primarily from academic library subscriptions (68-75% of the total revenue), followed by corporate subscriptions (15-17%), advertising (4%), membership fees and personal subscriptions (3%), and various author-side payments (3%).
Because universities are both the primary producers and consumers of scholarly journals, this suggests the possibility of transitioning economic support from the demand (subscriptions) to the supply (publishing services or journal production) side. There are two basic models for accomplishing this transition, with a number of variations. One model involves taking on production services (university / library press model). The other model involves paying for production services, such as open access article processing fees.

There are significant challenges to making a transition of this nature. Currently, academic library budgets are largely tied up with subscriptions to “must-have” journals, leaving little flexibility to shift support to open access. The vast majority of journals are still sold on a subscriptions basis. A global shift to open access publishing requires
publication outlets in sufficient numbers and of sufficient quality to meet the needs of all scholars. A global shift from demand to supply side takes global commitment and participation on the part of libraries, scholars, and publishers alike. Despite the challenges, there are many signs that this transition is already well underway, such as the *Dramatic Growth of Open Access* reported in the previous chapter, and the library publishing operations mentioned in the second chapter. One of my central arguments is that a prudent transition of academic library budgets from support for subscriptions journals to support for open access publishing will be key to a successful transition to open access.

Academic library budgets would not be the sole source of revenue in an open access future. As noted in the Research Information Network (2008) report, 15-17% of revenue for scholarly journal publishing comes from corporate subscriptions. These corporate subscriptions will include some research organizations, and it makes sense to assume that these will contribute to paying for the production of the results of the research that they conduct. Research grant funds can often be used to pay for open access article processing fees. The Wellcome Trust has created a fund especially to pay for such fees. Many research funding agencies have long provided researchers with an option to use funds for dissemination of results. For example, the U.S. National Institutes of Health (2005) calculated that it made available about $30 million annually to its grantees for publication and page charges. The Canadian Institutes of Health Research has long had a policy that funds could be used for dissemination purposes. Library and university based publishing outfits can take advantage of local infrastructure such as servers and internet connectivity. As Edgar and Willinsky (2010) note, there are also substantial sources of subsidy funding available to many scholarly journals.

**Affordability**

A healthy scholarly journal publishing system, in addition to providing open access, must be affordable. As discussed in the second chapter, the background to the transition to open access is a growing, entrenched commercial scholarly publishing sector earning significant revenue and profits. This section will address some of the
major elements necessary to ensure that scholarly journal publishing will be affordable into the future.

To calculate the affordability of different options for scholarly journal publishing, one needs to know, at least approximately, how many journals and articles are produced on an annual basis. Björk, Roosr and Laurie (2008) calculated that the 23,700 journals listed in Ulrich’s as of 2008 published approximately 1,350,000 peer-reviewed journal articles in 2006. These are the figures and timelines used for the calculations in this chapter, recognizing that both journal article production and revenues have increased since that time.

It takes resources to publish a peer-reviewed scholarly article, such as time spent editing and coordinating peer review, hardware, software, and connectivity for an online journal. The costs in dollar terms vary a great deal. Willinsky (2006) explored the costs per article of scholarly publishing in some depth and found a cost range from zero to $20,000 per article. Willinsky (2006, p. 69) quotes Gene Glass, founder of the online-only Education Policy Analysis Archives (EPAA) in 1993 as describing EPAA’s budget as “Zero, nada, no budget, no grad assistant, no secretary.” This is possible in scholarly publishing because of the large percentage of the work that is done on a voluntary basis by scholars paid through university salaries, and in-kind support that is generally available at universities, such as computers, software, and connectivity.

This is a marked contrast with the scholarly journal publishers’ annual collection of about $8 billion US in revenue. Of this amount, as noted above, about 68-75% of the

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12 As of 2011, by my calculations Ulrich’s lists approximately 26,000 active, academic / scholarly journals (Appendix C), approximately a 10% increase over 2006. Assuming that there is no difference in the average number of articles published per journal, an estimate of just under 1.5 million peer reviewed articles published per year seems reasonable. Ulrich’s list contains predominantly English-language titles, and may reflect a western bias. For example, Chinese academic journals are likely underrepresented in Ulrich’s. According to Jie (2010): “China has almost 9,500 academic publications that generate about 2.5 million papers per year, according to Shen's figures. But there are 30 million teachers, lecturers, students, technicians and researchers seeking publication”. It is assumed that this is of limited relevance to the present exercise, as any bias in Ulrich’s coverage is likely matched by a bias in purchasing. That is, this analysis is predominantly a western-based, developed world analysis.
total ($5.4 - $6 billion) comes from academic library budgets. The substantial profits of
the large commercial scholarly publishers, typically in the 30-40% range, suggests that
there is more than enough funding in the current system from the academic libraries
alone than is necessary to fund the costs of publishing. I argue that this amount is more
than sufficient to fund reasonable publication costs for all of the world’s scholarly peer-
reviewed journal articles, but not necessarily the levels of profits that certain publishers
are accustomed to collecting.

A key metric to assess efficiency in an open access environment is the average
cost per article. From 2004 to 2005, I conducted an ad hoc thought experiment called
The Imaginary Journal of High-End Chemistry, exploring the necessary costs of
publication through listserv and blog postings, incorporating feedback from scholarly
publishers, librarians, and chemists (Morrison, 2005). The basic argument was that $500
per article should be sufficient to cover the necessary costs of online-only, fully open
access publishing, even assuming well-paid staff working in a costly environment
(Vancouver, British Columbia).

In 2004, The Wellcome Trust published the report, Costs and business models in
scientific research publishing. After reviewing the literature on costs of scholarly
publishing and discussions with senior staff at a range of publishers (including
commercial publishers), the Wellcome Trust concluded: “A conservative estimate of the
charge per article necessary for author-pays journals lies in the range $500–$2500,
depending on the level of selectivity used by the journal, plus a contribution to overheads
and profits” (p. 2).

Today’s actual article processing fees (APFs) of successful, established fully
open access publishers supports these predictions of The Wellcome Trust and from The
Imaginary Journal of High-End Chemistry. The profitable Hindawi charges fees closer to
the low end of the range. For example, the APF for Hindawi’s Economics Research
International is $400. BioMedCentral's average APF is $1,895, in the middle of the
range. PLoS fees range from $1,350 for PLoS ONE to $2,900 for PLoS Biology. This is
just over the top of the Wellcome Trust range - but then seven years has intervened
between the publication of the report and now. It is important to note that the Wellcome
Trust cost estimates assume a largely commercial scholarly publishing system. Edgar
and Willinsky (2010), surveying the group of journals using Open Journal Systems, mostly published by independent scholars, found an average cost of $188 per article.

The importance of cost per article in determining whether an open access scholarly publishing system is feasible from an economic standpoint is implicit in the conclusions of Walters (2007). Walters studied the economic implications of a switch to open access for a range of institutions from small colleges to a large research university with two models, a PLoS model and a model assuming maintaining current revenue streams for scholarly publishers.

Walters found that all institutions would save money with a PLoS model, with an average cost per article of $1,500. Walters also found that this model shifts the proportion of costs, so that the large research university pays a higher share of the cost than with the present system. However, the savings from the PLoS model are so substantial (only 15% of the revenue that goes into scholarly journal publishing at present, by Walters’ calculations), that even the large research university saves about half its journal costs with this model. The other model Walters looked at assumed maintenance of current revenue for publishers; with this model, most institutions would still enjoy savings by Walters’ calculations, however the total cost would increase for the large research university library.

My focus is transforming the scholarly publishing system, towards a system that responds to the needs of scholars for information rather than the needs of investors for profits. I will not explore the model which projects current revenue for publishers, but rather focus on the potential for a more affordable future for scholarly journal publishing.
Figure 7: comparison of current costs per article in U.S. $

<table>
<thead>
<tr>
<th></th>
<th>Current library spend / article</th>
<th>$188</th>
<th>$400</th>
<th>$1,350</th>
<th>$2,900</th>
<th>$4,326</th>
<th>$5,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Journal Systems</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Hindawi Economics Research International</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>PLoS ONE / Nature Scientific Reports</td>
<td></td>
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<tr>
<td>PLoS Biology</td>
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<tr>
<td>Elsevier Cell Press</td>
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</table>

Figure 7 compares current library spend per article with several open access per-article costs. The estimate of $4,326 current library spend per article is calculated on the basis of the $5.8 billion estimated annual academic library spend per article, divided by the estimated 1,350,000 peer-reviewed articles per year calculated by Björk, Roosr and Laurie (2008) for the 23,700 journals listed in Ulrich’s as of 2008. This amount is contrasted with several current per-article costs for open access journals, as discussed above. The costs on a per-article basis for many fully open access journals are considerably less than the current library spend. Elsevier’s (2012) Cell Press, a hybrid “open access” choice (technically a “sponsored article” choice, not really full open access), is an outlier with a cost that is higher than the current average library spend.
Table 1: Global costs and library cost savings with transition to open access

<table>
<thead>
<tr>
<th></th>
<th>Cost per article</th>
<th>Global cost 1.35 million peer-reviewed articles ($ millions U.S.)</th>
<th>Global library cost savings ($ millions U.S.)</th>
<th>Global library cost savings in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Journal Systems</td>
<td>$188</td>
<td>$254</td>
<td>$55,862</td>
<td>96%</td>
</tr>
<tr>
<td>Hindawi Economics Research International</td>
<td>$400</td>
<td>$540</td>
<td>$5,300</td>
<td>91%</td>
</tr>
<tr>
<td>PLoS ONE / Nature Scientific Reports</td>
<td>$1,350</td>
<td>$1,800</td>
<td>$4,017</td>
<td>69%</td>
</tr>
<tr>
<td>PLoS Biology</td>
<td>$2,900</td>
<td>$3,915</td>
<td>$1,925</td>
<td>33%</td>
</tr>
<tr>
<td>Current library spend / article</td>
<td>$4,326</td>
<td>$5,840</td>
<td>$0</td>
<td>0%</td>
</tr>
<tr>
<td>Cell Press</td>
<td>$5,000</td>
<td>$6,750</td>
<td>-$910</td>
<td>-16%</td>
</tr>
</tbody>
</table>

Table one illustrates that, given realistic average per-article costs, academic libraries, by working together globally, could fully fund the scholarly peer-reviewed journal system – and save money, too. The columns illustrate the essential point about cost per article being a key metric to assess the affordability of the system. At the Open Journal Systems average cost per article of $188, the total cost globally would be $253 million. Academic libraries could fund this amount from current budgets and still achieve a global cost savings of $5.5 billion annually, or 96% less than current spend. This largely scholar-led system would be by far the most cost-effective means of transitioning to open access.

The $400 fee of Hindawi’s Economics Research International shows that highly significant cost savings are compatible with cost-efficient for-profit publishing.
At the *PLoS ONE* (or *Nature Scientific Reports*) average cost of $1,350, cost savings would be about 70% with a global transition. At the *PLoS Biology* rate of $2,900 per article, the total cost to academic libraries would be $3.9 billion, a cost savings of $1.9 billion annually, or 33% less than current spend. On the other hand, if the average cost were the *Elsevier – Cell Press* fee of $5,000 per article, this would *add* close to one billion dollars in library spending, or a 16% increase in global library spending on scholarly journals.

This table illustrates the importance of cost per article as a key metric in transitioning to an affordable open access scholarly publishing system. Libraries could support a largely scholar-led journal publishing system at a very small fraction of current spend, as illustrated by the Open Journal Systems average cost of $188 per article. Significant cost savings could be achieved at rates currently charged by for-profit Hindawi, or the not-for-profit Public Library of Science. However, average costs in the $5,000 range as currently charged by Elsevier’s *Cell Press* would increase the cost of the system as a whole.

In 2008, Greco and Wharton recommended an open access model for university presses, suggesting an approach similar to article processing fees, with a $250 submission fee, an additional peer review fee of $250 to send books successful at the submission stage out for peer review, and another approximately $10,000 or so for final typesetting, copy editing, and so forth, for a total of approximately $10,500. An interviewee (Morrison, 2012) with decades of experience in university press monograph publishing provided me with a ballpark first copy cost estimate for an electronic open access monograph of $15,000.

Pinter (2011), a publisher with decades of experience and founder of Bloomsbury Academic Press, calls for libraries, publishers and consortia to work together to fund open access monographs, citing a first copy cost of $10,000. Pinter’s model assumes that publishers would earn additional revenue streams, through sales of print on demand or specially formatted e-books.

If cost savings from a flip to open access at an average rate of $1,500 per article were redirected to fund monograph publishing, this would provide up to $3.8 billion annually to fund open access monographs. This amount would be enough to pay for the
creation of 250,000 open access monographs per year. That would be a quarter of a million more monographs available to everyone, everywhere, added every year. I see libraries as playing an essential role in hosting and preserving these monographs, and ensuring that they are both findable and accessible on a long-term basis. This would be a marked contrast with the current situation where each scholarly monograph sells on average 400 copies.

**Issues and challenges with switching to production-based economics**

Many of the issues and challenges with respect to journal articles are described by Shieber (2009). Open access journals face an inequitable situation, with the majority of library budgets being committed to subscriptions journals. Hybrid journals are problematic for libraries due to double-dipping, that is, journals charging both article processing fees and for subscriptions. There is a need to establish a suitable cap for open access article processing fees, although Shieber suggests it may be more appropriate to establish caps by author rather than by the article. Beall (2011) has written about the problem of what he calls predatory open access publishers. That is, the article processing fee approach to open access publishing has opened a door for new publishers, including some that appear to be running outright scams, collecting money for article processing fees without actually conducting peer review. In addition, some have been known to use unethical business practices, such as listing people on their Editorial Boards unbeknownst to the person listed and spamming potential authors and reviewers. Funding agencies are supportive of open access; many have policies requiring open access to the results of research that they fund. Funder generosity in allowing funds to be used to support open access publishing is welcome, however over-generosity could be problematic. For example, if a funder committed to paying open

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13 While I consider Beall’s list a valuable service, I would like to note that I do not agree with his assessments of all the publishers listed. For example, Beall places Medknow Publications on a suspect list; Medknow’s publication program began with long-established and highly regarded peer-reviewed scholarly journals from India. My comments can be found in Morrison (2011b).
access article processing fees up to $3,000, it is likely that many publishers would set their fees accordingly. Corporate publishers would have a duty to their shareholders to adjust fees accordingly, as charging less would result in less than optimal profits to the shareholders. The result could easily be a standard open access article processing fee that would be higher than what is actually necessary for publishing. This would tend to result in a systemic increase in costs, and would impact authors and other funding agencies less able to match the payment. For this reason, I advocate that funding agencies adopt one of the following policies:

- Allow grantees to use funds for dissemination of research without specifying how funds are to be used. This gives the grantee an incentive to look for affordable alternatives to keep other funds free for other purposes.

- Cap the eligible fee for open access article processing at an affordable amount. For example, PLoS ONE has shown that it is possible for a San Francisco-based professional publisher to produce peer-reviewed articles at $1,350 per article.

- Create funds to subsidize journal publishing along the lines of Canada’s Social Sciences and Humanities Research Council’s Aid to Scholarly Journals program.

Perhaps the biggest opportunity or challenge is the need for collective action. Taylor, Morrison, Owen, Vézina, and Waller (2011), in a survey of libraries and university presses that asked about economic models for support for open access publishing, found that the model most likely to be supported (and not opposed by any respondents) was a library consortial approach.

The business models for scholarly communication in print format are very familiar and easy to understand. Scholarly articles are bundled into journals and sold as annual subscriptions. Scholarly monographs are sold by the copy. In both cases, the copy belongs to the purchaser, who is free to keep, lend, sell, or give away the copy. A copy can only be read by one reader at a time. If the library’s copy of the book is on loan, the would-be reader either has to wait for the library’s copy or find another one. The
university library retains copies of both books and journals and assumes responsibility for preservation.

Scholarly communications (journals, books, and emerging formats) in the online environment come with a different set of opportunities and challenges. The default "purchase" has changed from sale to leasing or licensing, increasing the danger of information enclosure discussed in chapter two. Rather than selling subscriptions to individual journal or book titles, it is easy to sell bundles, and many publishers do. One example is the "big deal" of for-profit STM journal publishers that, as we saw in chapter two, is capturing a disproportionate share of the money available for scholarly communication and is a major factor in the serials crisis. The not-for-profit sector has reacted and created aggregations of its own, such as Project Muse. Aggregations can involve journals of many publishers, and even many different types of publishers, for example the general journal packages sold by companies like EBSCO and ProQuest.

The tendency towards aggregation is happening on the purchasing as well as the sales sides. A library can purchase a site wide license to a bundle of journals for access by any student, faculty or staff member, whether on or offsite. This can impact the individual subscriptions of a publisher, and even the memberships of a not-for-profit society publisher that has traditionally considered receiving a copy of the publication as a membership benefit. A whole class can download and read an article or book at the same time. A library consortium can purchase a copy of a book, journal, or package, for access by students, faculty and staff at every research library in a country. Library consortia occasionally make purchases at an international level, coordinated by The International Coalition of Library Consortia. While a few publishers have flourished in this environment, others are struggling to figure out the economics for survival. Obviously, selling one copy of an eBook for sharing by the whole world at a price that made sense for a single print copy just won’t work. There are many successful models for selling scholarly communication in electronic format, such as differential pricing based on size and/or type of an institution, whether measured by Carnegie classification or student numbers. However, if there are no funds left in library budgets after paying for the big deals of the large STM publishers, other publishers may face cancellations.
These dual tendencies towards aggregation on the sales and purchasing sides suggest an immanent potential of scholarly information in the online environment towards something like ubiquitous or open access. With open access, one copy can be placed online for access to anyone, anywhere with an internet connection. As Sutton (2011) expresses it, free may be inevitable for scholarly communication. It is the process of enclosure that initially takes effort and energy, developing the paradigm of intellectual property and means of enclosure such as digital rights management.

It appears as though the tendency towards aggregation by both publishers and libraries is converging towards open access. If all of the works of a publisher, the “big deal” are available to researchers at every university in a country, this may seem similar to open access, and occasionally people will refer to this as open access.

Elsevier (2011) even has a term for this: universal access. The basic idea is that if everyone who can afford to subscribe or pay-per-view to Elsevier’s resources does, and this is supplemented by a little bit of charitable access, then everyone has access. On the surface, this sounds plausible. At many libraries, the online environment has meant greatly expanded access. Many a small library has greatly expanded their journal offerings in the online environment.

The major problem with this is who owns the information. Elsevier is a corporation, an organization with a mission of maximizing profits to shareholders. As long as Elsevier continues a policy of full copyright transfer by authors, Elsevier is free to define the payment terms of its universal access. That is, everyone can have access – provided that they are willing to pay on Elsevier’s terms. Or, Elsevier could abandon this approach altogether in favor of another seen as more profitable. If Elsevier is generally selling site wide licenses to libraries rather than pay-per-view, it is much more likely because this is how Elsevier reaps the most financial benefit, not because pay-per-view is less compatible with universal access. As discussed in chapter two, in 2010 Elsevier made £724m ($1.1 billion) on revenues of £2 billion. What if a wealthy country or group of countries (or even a group of oligarchs) were to offer Elsevier £3 billion annually to provide them with exclusive access to the works owned by Elsevier?

My perspective is that commercial “universal access” is problematic at best, and it seems more consistent with longstanding conceptions of communications in the public
interest to build a knowledge commons accessible to all. There may well be a role for the commercial sector here, but the role should not be that of ownership of the scholarly works.

Scholars, libraries, publishers, and consortia are involved in a wide variety of collaborative efforts to transition scholarly communication to a model that emphasizes greater accessibility. Following are just a few examples designed to illustrate the breadth and scope of these initiatives. RePEC (2011), Research Papers in Economics, describes itself as “a collaborative effort of hundreds of volunteers in 75 countries to enhance the dissemination of research in economics”. The Stanford Encyclopedia of Philosophy (SEP) is a project led by philosophy scholars, who created their own high quality subject encyclopedia, with entries invited by subject experts and kept up to date. SEP has been working towards creating an endowment to fund ongoing open access, assisted by The International Coalition of Library Consortia (2005), among others.

Libraries have formed a Compact on Open Access Publishing Equity (2011), as a means of beginning to address the problem of supporting open access while library budgets are still tied up in subscriptions. The Synergies (2011) project has brought together libraries and university presses across Canada to develop a common platform and support for online hosting of Canadian academic journals, particularly in the humanities and social sciences. In addition, a group of open access publishers has formed an association called the Open Access Scholarly Publishers Association (OASPA). BioOne and Project Euclid are cooperative societies whose publisher members benefit from the economies of scale made possible by working together, as described by Crow (2006). Both BioOne and Project Euclid feature a mix of fully open access journals and publishers, subscription-based journals, and in-between models such as journals that make back issues freely available.

The arXiv initiative, developed and much used by researchers in physics, mathematics, and several other disciplines, is hosted by Cornell University Library, has 18 mirror sites around the world, and is presently in the process of finessing a sustainability strategy involving support by the institutions that are the heaviest users of arXiv. As of October 2011, 129 institutions from 16 countries had pledged support of $382,000 in contributions for 2011 (arXiv 2011). arXiv hopes to eventually receive
support from the 200 institutions around the world that are the heaviest users of the service.

SCOAP3, the Sponsoring Consortium for Open Access Publishing in Particle Physics, is a global collaboration designed to transition library subscriptions in high energy physics to open access. As of December 2011, SCOAP3 has obtained sufficient library commitments for this task, and is in a tendering process with publishers.

OAPEN (2011) describes itself as a collaborative initiative to develop and implement a sustainable Open Access publication model for academic books in the Humanities and Social Sciences. The OAPEN Library aims to improve the visibility and usability of high quality academic research by aggregating peer reviewed Open Access publications from across Europe. OAPEN is only one of a number of European-union wide cooperative open access initiatives.

Houghton and colleagues have conducted major macroeconomic analysis of the potential for transition from subscriptions to open access at the country level, first in the U.K. (Houghton et al, 2009a), and more recently in the Netherlands (Houghton et al, 2009b), and Denmark (Christoffersen, 2009), indicating significant cost savings from a transition to open access in all countries studied. These studies included a broad range of factors involved in scholarly communication, including unpaid activities such as reading and reviewing. The significance of these studies is that they illustrate the financial advantage of even a unilateral move by one country to open access, including countries such as the U.K. where a favorable balance of trade is enjoyed due to high profits of local publishers. The amount of savings varied with the method of providing open access, with the gold approach or open access publishing providing the smallest savings, green or self-archiving greater savings, and the greatest savings were anticipated with a more radical transition of the whole scholarly publishing system to one involving publishing through institutional repositories with a peer-review overlay.

We are beginning to see signs of a more radical transition, away from the format of print. Odlyzko predicted the impending demise of the journal as long ago as 1994, but while the trend away from print is strong, things have not quite progressed as rapidly as predicted. In the history of communications technologies it is often the case that a new technical trend does not always completely eliminate the communication made possible
by the previous technology. The 8 track was made obsolete by the smaller audio cassette, which in turn was made obsolete by the compact disc, which is now pushed toward obsolescence by iPods and the online delivery of music. However, the analog vinyl record is making something of a comeback in music circles. Similarly, while the trend is clearly away from print in academic publishing it is very possible that print publications of some type or other will continue to find a niche in the world of scholarly research.

One striking shift in scholarly publishing of particular importance to the economics of scholarly publishing is the rise of the megajournal. PLoS pioneered this approach with PLoS ONE in 2006. Rather than filtering articles for scope or interest to readers, a practice that makes sense when journals are issued in print and so must be bundled into issues of a predictable size, PLoS ONE accepts all sound science, articles that pass peer review, in any discipline. This approach introduces important efficiencies into scholarly publication. Generally, the practice has been for authors to submit a paper to first one journal, then another if rejected by the first journal, sometimes for several rounds. Each rejection is costly for the rejecting journal, and adds overall to the time of scholarly editors and reviewers, as many articles end up being reviewed more than once. It is likely the efficiencies of PLoS ONE that have made the $1,350 article processing fee (in contrast with the PLoS Biology fee of $2,900) a possibility. In 2010, PLoS ONE became the world’s largest journal, publishing close to 7,000 articles that year (Morrison 2011c). In 2011, PLoS ONE doubled its output, publishing close to 14,000 articles. One of every 60 articles indexed in PubMed is now a PLoS ONE article. PLoS ONE also appears to have inspired a number of new megajournals (Konkiel, 2011). Size is only one of the innovations of PLoS ONE, which also features post-publication peer review and article-level metrics.
Figure 8 Number of articles published in PLoS ONE per year, 2006 – 2011.

Source: Morrison (2004-) The dramatic growth of open access.

Authors in the developing world are expected to publish in the top international journals; from an economics perspective, this is not optimal for the developing world, as discussed by Merrett (2006). Local publishing would be more affordable, as it would allow scholars and universities to take advantage of a lower cost of living. Local publishing would also provide academic leadership and business opportunities for the developing countries. Local journals would also be more receptive to research on topics of local interest, such as illnesses that are common in the developing world but rare in the developed world. For those developing world authors who do wish to publish in international journals, the International Network for the Availability of Scientific Publications (INASP) has created a program called AuthorAID, which helps developing country writers with their writing.

Summary

There is more than enough revenue if library acquisition budgets were redeployed to fund an open access scholarly publishing system. Transitioning the major source of support for scholarly journal publishing, library journal subscriptions, will be key to a successful transition. A prudent transition seeking affordable scholarly journal publishing has the potential to provide academic libraries with significant savings, which could fund redistribution of economic support for scholarly publishing, particularly to reinvest in scholarly monograph publishing. A key metric in understanding affordability in
scholarly publishing in an open access environment is the cost per article or cost per book. Cooperative solutions have been emerging in scholarly publishing for some time, and will be important in the transition to full open access. The most cost-effective approach to the transition will involve a more radical transition away from the print format. There signs that such a transition is beginning, with the rise of the megajournal pioneered by PLoS ONE.
Chapter 6: The changing economic and technical environment for scholarly monograph publishing: views from the industry

From late fall of 2011 to early 2012, I conducted a series of 10 interviews with senior people in scholarly monograph publishing, seeking in-depth information from this sector on the two major social trends explored in this dissertation, commodification or commercialization of scholarship and irrational rationality, as well as recommendations for improvement to scholarly monograph publishing. This chapter presents the results of these interviews and discusses the implications in this context of the social trends and potential alternatives explored in chapters two to four. Potential respondents were selected using a snowball approach, beginning with some of my acquaintances and those of my senior supervisor. The majority of participants were from the not-for-profit sector. Half of the respondents had decades of experience working in the university press sector, in one case going back to the 1960’s. All are still working in this sector, although one is semi-retired and working as a consultant rather than full-time. One respondent works for a not-for-profit publishing organization, and another for a government agency, for a total of 7 respondents from the not-for-profit sector. The remaining three respondents are from the commercial sector. Two are serial entrepreneurs, having started and then sold or closed a number of publishing houses over a period of decades. One was a senior manager at a large commercial scholarly monograph publisher.

A few of the respondents had less experience, from about a decade to about 3 years. Four respondents are working in publishing environments that are primarily focused on open access monograph publishing. My respondents reported that they had often moved over their careers, from one publishing outfit to another, most often among the university presses; some also moved from the not-for-profit to the commercial sector and vice versa. One of the respondents reported deliberately staying within the not-for-profit sector for philosophical reasons in spite of better compensation available in the
commercial sector. Most of my respondents are now managers; many reported working their way up through the ranks, beginning with a variety of positions including copyeditor, typesetter, technology production manager, marketing, and acquisitions, moving up through middle to senior management positions. All are knowledgeable in their fields, and many have written about scholarly publishing and/or have served in senior positions in publishing associations. I did not ask my respondents about their ages, however the invitations were sent on the basis of experience, and responses to a question about background would suggest a roughly middle-aged group. Respondents were from five developed nations, the U.S. (4), Canada (2), U.K. (2), Netherlands (1), and Germany (1). Eight of the respondents were men, and 2 were women.

**Trends question: what trends have you seen in recent decades?**

*Decline in sale of monographs*

The interviews were organized into a series of questions about changes in the industry. Nine of the ten respondents mentioned a decline of scholarly monograph sales as a key trend, if not the key trend, over the past few decades, and almost all respondents specifically talked about decline of sales to libraries. One respondent noted that 90% of commercial press’ scholarly monographs are sold to libraries, and 70% of scholarly monographs published by university presses, even though in recent decades there has been an increase in the portion of sales to the trade market and directly to scholars. But the major trend line in the industry has been away from library acquisitions of scholarly monographs. As one of the respondents put it:

I started at [X] in 1967 it was typical for the average monograph to still be selling close to 3 thousand copies to libraries alone, and over the period of time up until the mid 1990’s that had already dropped down to about 500 copies, 5 to 7 hundred, by the early 2000’s, presses were beginning to see it drop down even further to around 3 to 4 hundred copies. I think that most presses would say now sales to libraries probably are going to be not much more than a hundred to a hundred and fifty copies and your sale of the hardback and scholarly monograph sales overall are not going to much exceed 300, 350 copies.
This trend of shrinking of the academic library market is seen as causing considerable strain on scholarly monograph publishing. In the words of another respondent:

At the end of the 1960’s and 1970’s, university presses could count on academic libraries to buy enough copies of any good, peer-reviewed monograph to make it economically feasible to publish on a break-even basis. This is no longer the case, and we as academic publishers have had to scramble to adapt to the new conditions.

Still, despite these trends, another respondent noted that scholarly monograph publishing for at least two commercial presses in Europe continues to be profitable. Another respondent noted that some university presses, in particular Cambridge University Press and Oxford University Press, are profitable as well.

But, these cases may be atypical. Indeed, a substantial number of the industry professionals who I interviewed were more likely to talk about threats to scholarly monograph publishing. For example, four respondents spoke about the increasing portion of library budgets going to STM journal publishers as the major cause of a shrinking of the market for scholarly monographs. As one respondent put it:

I became concerned about this and indeed [X] University Press, my employer, became concerned about this as long ago as the late 60’s when it first became obvious that libraries had begun devoting more of their resources to paying for journal subscriptions and less of their resources to buying monographs and that produced what people even way back then were calling a crisis in the system.

On this point, another respondent noted:

The biggest factor [in the decline of sales of scholarly monographs] was the growth of the big journals publishers – starting with Maxwell’s attempt to take over the world – Pergamon – over 20 years had absorbed a lot of journals, sucked a lot of money, taken over by Elsevier.

Respondents also noted the trend of libraries to shift funding to resource sharing and technology as something that has a notable impact on the revenue available for purchase of monographs. In addition, some noted decreased public investment in U.S.
universities as a factor in the declining sales of scholarly monographs, and especially in the humanities, reflecting a lagging in support for humanities in general.

One respondent noted a “huge decrease in small and medium-sized independent companies [which is] bad news because small companies usually run by people who are innovative / creative, give good attention to the authors”.

Reactions to decline in sale of monographs

Many of the responses to the first question about overall trends and the question specifically focusing on commercialization can be characterized as a variety of strategies employed by publishers in reaction to the decline in sale of monographs. One such strategy is getting out of monographs publishing altogether to focus on more lucrative fields. A couple of respondents noted that they had observed a number of commercial companies employ this strategy over the past few decades. In the words of one respondent, “more and more publishers are exiting monographs publishing, [there is] not much money [in it], each project is small as compared to texts, reference works”. One respondent commented that it was the small not-for-profits that tended to continue publishing scholarly monographs. Another respondent noted that some publishers continued to publish scholarly monographs, even though this area was not profitable for them, as a necessary complement to journal publishing: “like a grocery story having to sell cornflakes even if they only make a penny a box, [so that they can] sell other stuff that does make money”.

Another strategy employed or considered by a number of publishers involved diversifying the title lists, for example supplementing scholarly monograph publishing with publishing of works seen as more profitable, including trade books, reference works, textbooks, and regional books. In the words of one respondent:

a trend that was beginning to show up [in the late 1980’s / early 1990’s] and affect the publication of scholarly monographs... what was happening in the trade publishing world was trade publishers were relying more and more on publication of what was called the blockbuster book, ... the book that was going to have sales potentially of millions of copies, and they would put all of their marketing effort into that ...which meant that they were less willing to publish
what was called the midlist trade book and that is the kind of book that was often put out in those days by Basic Books and Free Press and so forth, serious nonfiction books that were often written by professors. Those books then no longer found such a hospitable reception in the trade sector...university presses of course were excited to have those available because the sales of those books would be double, triple, or even more the sales of the typical scholarly monograph and so presses would snap up those midlist books and trade publishers.

This respondent went on to point out that this is a worrisome trend; if scholarly publishers are getting into publishing trade books, then fewer scholarly monographs will be published:

They initially began simply to expand the overall number of books published but [I] was pointing toward the future because I was already aware of a trend of presses not expanding the size of their lists any more, but instead, substituting the publication of midlist trade books for scholarly monographs and ...a survey of the largest university presses at that time ...indeed confirmed my impression that those presses were not going to expand the size of their lists but were indeed going to pursue that strategy of substituting publication of midlist books for scholarly monographs and that really was a worrisome trend because obviously that meant that fewer scholarly monographs were going to be able to find homes at university presses.

This trend was not worrisome for all publishers; one respondent noted that a result of the drive for profitability of university presses was that “the most admired publishers were the ones who espoused the model of the bottom line, separated themselves from the university, and did trade books as well as scholarly monographs”.

Another respondent commented that this is a false approach, as it is just as easy to lose money on trade books as scholarly monographs:

For a while, there were some who thought if you did trade publishing, profits would subsidize the monographs – BUT – it is as easy to lose money on trade publications, PLUS university presses aren’t really set up to market trade
publications. University presses DO publish regional trade books... Overall, though, trade books is a false approach.

One press had considered getting into trade books, then abandoned this approach as a conflict with their primary mission of scholarship. A respondent who worked at that press noted: “at the start of our environmental scan, we started with the idea that we are publishing things that no one reads, why not get into trade books BUT – we are scholarly [so we discarded this approach].”

A number of marketing strategies have been employed to seek additional sources of revenue. One such strategy was the development of dual paperback and hardback editions, with the original idea being that the paperbacks would be much cheaper and be purchased by graduate students, and it was hoped that they would be picked up as textbooks. Eventually this strategy changed, as libraries began to purchase the cheaper paperbacks rather than hardbacks, and the prices of the paperbacks rose so that they were no longer attractive to graduate students. Two respondents noted that many scholarly monographs are now only published in hardback, with popular titles published in paperback as well.

One respondent discussed how their university press has flipped the percentage of copies sold to libraries and scholars from 75% of copies being bought by libraries to 75% being bought by scholars, and expressed concern about this shifting the burden to scholars. All other respondents, however, talked about library sales as being the primary source of revenue for scholarly monographs.

The changes noted above lend themselves to a stronger emphasis in scholarly book publishing on marketing, sales, and business model development. One strategy of some commercial publishers has been to focus on making sure that the books produced are used in the digital, online environment, a paradigm shift, according to one of my respondents, that university presses seem reluctant to make. This respondent gave an example of how his publishers’ technical staff work to make sure books are more findable: “if you have a book chapter called “introduction”, you can’t find it on the web, [and so you] tell editors to give chapter names that tell what’s in the chapter”. Another aspect of marketing for this respondent is the importance of convincing authors to publish with this company, that there is value added for the author. A book that has been
made easier to find by the work of the publishers’ technical staff described above will increase the likelihood that the author’s work will be found, cited (enhancing the author’s prestige and prospects of tenure and promotion), and purchased, resulting in increased royalties for the author.

Cost cutting is another strategy mentioned by several respondents, beginning early on with the use of computers to facilitate the production side of publishing. One respondent reported cutting some of their marketing costs through such means as dropping the services of a marketing consultant firm, putting ads in conference programs rather than attending major conferences, and doing a lot more e-mail target marketing themselves; their strategy of limiting their publishing to specific areas facilitated these cuts. This university press was able to manage a national media campaign for a special book without outside help. Another area of cost cutting was warehousing. One respondent talked about “squeezing wherever costs could be cut” such as discounts to suppliers and libraries, and even “cuts to things like copyediting, proofreading, things we don’t want to cut”. In another instance, the strategy of the university press where one of my respondents worked was to narrow the range of topics published, to specialize in a few select areas rather than publishing across the full range of scholarship.

Is the system working?

Scholarly monograph publishing has been financially squeezed in the past few decades; but is the system still working? Several of the people who I talked to indicated that there are fundamental problems with the system. On this point, one respondent noted that “academics have to publish, [but] publishers can’t find enough money, which means that there are a limited number of books that can get published – not a balance between supply and demand”. Another respondent suggested that this is:

one of [the] places where most university presses are between God and Mammon. Certain kinds of work require a substantive exposition – 80 – 100,000 words, which forms a monograph – universities have all these people doing work, [so they have a] vested interest. Production of monographs [is] not commercially viable if done at [the] level of [work done by] university presses.
In other words, university presses are caught trying to commercialize works that really aren’t commercializable, particularly in the humanities.

This system does not serve anyone well, according to one respondent; not the author, who spends two years writing a book, of which 300 copies are made, “which aren’t necessarily getting to those who might read, some library copies are never even opened”, and not the readers. One notable casualty of the system is the publication of a scholar’s typical first monograph, the revised dissertation. Commenting on this point, one of my respondents suggested that:

…this is a change that…has me still very worried about the fate of the first book published by junior scholars, the revised dissertation typically, … what began to happen on the library side was that once libraries had access to the Proquest electronic dissertation database…the pressures on the library acquisition budgets were very severe so they were looking for any ways they could to rationalize cutting back expenditures of certain kinds…

The respondent went on to argue that librarians began to think that there was duplication in the system that might create opportunities for cost cutting. They had the dissertations through Proquest, so “what reason do [they] have to buy revised dissertations? The respondent went to note:

I think there was an assumption that revised dissertations didn’t add much to the original dissertation in terms of the research you know maybe it was just sort of a dropping of the literature review chapter and some touch-ups here and there to slightly reorient the dissertation toward a different audience but at any rate whatever assumptions librarians were making, they were instructing their vendors to use methods to identify books that were revised dissertations… for instance, by looking at the acknowledgements where the author might thank the dissertation advisors for the origin of the book. The vendors’ staff would go online and look under the author’s name and compare the title of the dissertation with the title of the book. The standing instruction from the library would be if you can identify that this is a revised dissertation do not include the book in our approval plan. So that really posed a severe threat to the ability of junior faculty to publish their first books… The editors in time became aware of the librarians’ taking this
approach, so they...became more concerned about inviting books that were based on dissertations for their own publishing programs, and therefore it became harder for junior faculty even to persuade university press editors to take a look ...at their revised dissertations in the first place.

The problem is compounded, however, because university promotion and tenure committees, especially in some fields like literary criticism, were still “looking at the publication of a book as the gold standard for advancing in a scholar’s career.” This combined with a broader “set of circumstances where at the sub-systemic level the libraries’ decision, the acquiring editor’s decision, the university press and the promotion and tenure committee’s decision to require publication of a book...from their own perspective, each of those decisions appeared to be quite rational, but when you put them altogether, what you have is a systemic dysfunctionality, that did not add up to make sense of the system as a whole.” The respondent went on to add:

So that was a real problem, that continues to be a problem, one way around it would be...for there to be a way for authors to announce in much more detail what kinds of revisions they made to their dissertation, to add value to it, because, generally speaking, that information is known only to the university press that decides to publish a revised dissertation, and in fact at [our university] Press it became a standard procedure for our Editorial Board to have presented to it a full explanation of the differences between the dissertation and the revised dissertation being presented for publication so that the editorial board would know in detail what the differences were and would be able to see that there was sufficient value added to justify publication of the book. That information is generally speaking not available to a librarian making a purchasing decision, so ...one way around it would be to make that information about the differences between the dissertation and the book more generally available but nothing so far as I know has been done along those lines yet.

**Bureaucracy**

On the question of the apparent dysfunctionality of the contemporary system of scholarly publishing, I wondered whether current trends might be adding layers of bureaucratic decision making to scholarly publishing. Yet, a few of the respondents I
talked to seemed unsure about how to interpret this question. As managers, they tended to interpret the question as referring to bureaucracy within their departments. I encouraged them to think about bureaucracy at broader level (e.g. university, scholarship as a whole).

Several respondents talked about bureaucracy within the university as a constraint for university presses, for example dealing with rules of university human resources departments means less flexibility to quickly hire staff for a project. Some see the university press as an odd fit within the university, running like a business with a very different budgeting process. The commercial sector is seen as more agile by several respondents; the respondent from a large commercial publishing house responded to this question with “bureaucracy – don’t have that”. However, one of the small entrepreneurial publishers saw both big publishers and university presses as more constrained in their ability to be entrepreneurial:

big publishers, large societies [are] most heavily constrained by the organizations that run them, don’t see side-opportunities, not allowed to pursue their entrepreneurship – university presses fairly inefficient for this reason. Small publishers run by very innovative, creative people...cannot match investment dollars [of large companies], only way to survive is to be very fleet of foot, seeing trends in the market, large publishers, could take 4-6 months to sign a book contract, small can do it right away. [Of the] 6 imprints I have set up and sold – 3 [were] killed off by large publishers ([who] didn’t understand what had made it work)

A U.K.-based respondent noted that the U.K. university system is far more bureaucratic than is the case in North America, with performance often being measured at the department level rather than at the individual scholar level:

[The] U.K. university system [is] so different (from previously), so much pressure on productivity, bureaucracy of the institution very weighty – hear same within U.S. and Canada; for younger people who don’t have the history, seems very sad – most of publishing driven by need not just for individual scholar’s recognition, but department’s performance – does stifle people to some extent.
A Canadian publisher noted that some of the U.S. university presses are subject to intense bureaucracy, with the reason being funding coming from outside sources, and described a similar situation in Canada, in which half of the money that comes from outside subsidy funding for monographs goes to solicit grant funding. On a similar point, another respondent noted that technology has created a new kind of bean counting, with both positive and negative implications:

new kind of – traffic, sales to individuals, trying to develop relationship with specialty customers [which] changes the kind of attention managers have to pay – some positive things – publishers are slow to leap into these; some opportunity for fine-tuning, understanding and responding to scholars’ needs more effectively, secondary publication, facilitating conversations.

My interviews also brought up some labour issues both for academics and for publishing staff that merit consideration, particularly with respect to peer review. One respondent was concerned about the impact of “excessive reliance on peer review” in a way that has diminished the creative expression of editors, transforming the job into a less creative, more managerial, role. Another respondent commented on the unpaid aspects of peer review and on the trend by presses to hire unpaid interns:

Another thing that worries me [is that] academics do peer review [and] should get paid – all of this has to be built into the cost of the book …[these are] irritating bureaucratic issues – academics are so busy. [This adds] extra bureaucracy and cost – go to 10 reviewers – [and this is] very unsatisfactory – I know the system relies on the peer review system –[Even so]– not sure that a book that sells 300 copies is worthwhile. Publishing relies a lot on unpaid interns – not just publishing, industry in general – nowadays you can’t get a job in publishing unless you’ve done 3 or 4 internships – only people with parents who can subsidize them through this can get a job – not the way it used to be with paid apprentices – then it was easier, there was a clearer route into the business.

Another issue has to do with the typically dismal financial returns for authors in the current system. On this point, one of my respondents noted: “[from a monetary perspective, scholarly] authors would be better of working at McDonald’s – [the] only authors that make real money is textbook [author]s”.
This does not mean that the people I interviewed necessarily suggested that the system of scholarly publishing was completely broken. Indeed, one respondent noted that the university affiliated with the university press where she/he worked was exemplary in supporting academic freedom for the press, even publishing works that were challenging to the university. Another respondent from a university press embedded in the library noted that the press is extremely fortunate in this regard, because it is less subject to university bureaucracy than most presses.

Technology

As discussed earlier, use of computers to develop more efficient workflows began to affect publishing several decades ago. Several respondents pointed out that the first impact of technology was on production of books and transforming the workflow for editing, communication (e.g. e-mail), and marketing through the World Wide Web. E-books per se began to develop relatively recently; several respondents noted that the current standard is still print, but that this is expected to change within the next few years. A tendency to risk aversion by scholarly monograph publishers was mentioned by a couple of respondents. One repeated theme is the concept that we are moving from a dynamic of scarcity to one of hyperabundance, where any google search can yield millions of results.

In the transition from print to e-books, there is a fundamental shift in production costs. With print, the cost of dissemination is substantial, while for e-books the primary cost element is the first copy production costs. One respondent commented that it is “immoral” to continue with closed access given this dynamic. Even with print books, print on demand (POD) is transforming production. One respondent noted that POD decreases the risk involved in scholarly monograph publishing as it decreases the risk associated with printing large numbers of books that are subsequently not sold. In some cases, books are printed on a one-off basis. I asked the two respondents who spoke about POD ‘espresso machines’ (local one-off book production machines), as these strike me as a potential model for greatly decreasing the costs of book production because they eliminate both the need to print books that may not be sold, and eliminate transportation costs. One respondent commented that quality with current espresso
machines is not sufficient, and another pointed out that territorial publishing rights would be a barrier to espresso machine book printing.

In the drive to reduce costs, receiving preformatted copy from the author was seen as eliminating the need for copyediting by one respondent. Another respondent talked about outsourcing typesetting from Britain to India. Electronic book publishing was seen as more complex than journal publishing by several respondents; more metadata is needed, to tie together the different parts of the book. Still, E-book publishing was seen as driving a move to standards by a couple of respondents. One respondent expressed concern that this trend is leading to an emphasis on throughput rather than quality.

Respondents also spoke about the evolving forms of books, such as liquid books involving commenting by readers, developing from a community rather than through a static form. One respondent noted in particular the importance of OJS, moving to handheld technologies, and the need to move from clunky PDFs to xml. Another respondent expressed some frustration with libraries; they tell publishers not to publish print books anymore, and yet this publisher still sells more print than e-books, even though their entire backlist has been digitized and is available for sale as e-books. This respondent noted that libraries are adamant about what they want in books, but are unwilling to pay. In respect to technological innovation, several respondents commented that they would like to see e-books and journal articles searchable together, rather than siloed, so that they books are a part of the scholarly conversation going forward.

Still, one respondent noted that technology has shifted values away from craft and quality to a focus on production:

[Technology is] seen as a disruptive force to key values; this is true to some extent, the pressure is on throughput rather than quality. There is pressure to systematize, [focus on the] content management system, start with xml first – rather than focus on editing – because [the book] will be [the] definitive word for [a particular topic]. Editorial style has been moved from craft / driven to throughput.

On a more positive note, a number of respondents also noted the potential for new, more collaborative and interactive monographs made possible by the technology.
Examples include new formats with “books beginning to become more interactive, [with] new digital features...[this includes]— experiments called liquid books — the form changes, becomes more interactive, start to include responses.” In such experiments the book potentially becomes a “focus point within a community – books & readers, joined as community.” One respondent spoke in particular about the potential for integrating research data into publications, saying: “we need to be a bit more open to new formats – not just monographs in traditional form; [for example], we should be looking at research data and ways to preserve it and make it accessible, connect with publications.” Another respondent talked about using technology to develop usage statistics to show the impact of open access books: “[we] secured some funding to find ways to prove that we are essential, trying to find ways of showing large impact; we can get google analytics – designers – have to build something in OA book to make it more desirable”.

**E-books and business models**

E-books are having an impact on the business models of respondents in different ways. For at least a couple of university presses, the transition from print to e-books is difficult, as the revenue from e-books is not sufficient to cover the transition, and does not make up for loss of sales of print books. Other respondents work in an environment with a predominant focus on e-books. The large commercial press made the transition to e-books several years ago, and is happy with the transition, making a profit. One business model mentioned by a couple of respondents is “patron driven acquisitions” (PDA), in which libraries make a wide range of titles available to patrons and purchase is determined by the patrons’ choice. However, in the view of one of my respondents, libraries do not seem to be picking up on PDA at this point in time and the future of patron driven acquisitions is unclear.

Several of the people I interviewed spoke about aggregation of e-books into bundles as a model of considerable interest. A number of aggregated packages of scholarly monographs in e-book format are now available for sale to libraries. It was suggested that this trend is “massive” because “selling 10-15,000 medical e-books to Chinese libraries at a time, changes the ethos.” One respondent, a large commercial publisher, talked about e-book aggregations:
[My company] does make money from e-books – not so much selling individual titles to individuals, where monographs are very much library products, they offer libraries packages. In the past, we made books, but lost money. If a global company [like ours], with low print runs, say 1,000 – the cost became very expensive, libraries bought less, then had to make the books even more expensive. Now, [our company] produces for example packages of 400-500 mathematical books / year – getting us out of the situation where authors were frustrated, not well disseminated. Now, everyone is happy – authors get dissemination, libraries get more, [my company gets] $.

This works effectively in part because of the size of the commercial publisher’s operation. However, another theme that emerged from my interviews it the difficulty that small publishers have in the development of large collections of e-books and platforms for searching them.

**Open access**

A significant majority of my respondents commented about open access. Six of the presses represented among the people I interviewed are involved in experiments of various types with open access publishing. Two of these respondents reported that open access monograph publishing is their “exclusive focus” and another reported that it was a “primary focus.” In another case, the press makes open access available as an option to its publishing partners.

Open access to scholarly monographs was generally seen as optimal for dissemination, and a couple of respondents (not the open access publishers) see this as inevitable. As one respondent noted, “distribution is not our value-add anymore”. The key issue is where the money will come from and how the publishing business will work in an open access environment. Several of my respondents mentioned a hybrid approach, where a “plain vanilla version” is freely available online, subsidized by a for-pay alternative such as print on demand. Other suggestions included sponsorship (this is the model of one open access scholarly monographs publisher), crowdsourcing funding (not unlike an older model of sponsorship by patrons), library acquisitions budgets, ads in books, and endowments (the Stanford Encyclopedia of Philosophy model).
In other words, the current situation is somewhat fluid and no single model has emerged to shape the industry. One respondent suggested a ballpark first-copy cost of $15,000. But, other respondents referred to Frances’ Pinter Libraries, Publishers, Consortia: a new model video http://www.youtube.com/watch?v=niYWVa2w6w inviting an international library consortial approach to sponsoring e-books, which refers to an estimated first-copy cost of $8 - $10,000. Another respondent provided a ballpark cost of $20 - $25,000. One respondent suggested that open access publishing might be particularly suitable for certain disciplines or topics which are important in an academic sense but less likely to be commercially successful. But, in another instance, a respondent expressed concern about the push to open access policy by funding agencies in the U.S.

The apparent inevitability of open access emerged as one of the major themes in my interviews. This has severe implications for current subscription / toll access approach to scholarly publishing. As one respondent noted:

I’m very skeptical about the long term viability of subscription based and toll access approaches to scholarly publishing, because I do think we’re at a point where the length of time where that can go on is limited, maybe another 5 to 10 years, so I’ve promoted the idea of trying to look ahead and get people thinking about moving books into open access and figuring out ways to do that...as you know there have been a number of experiments now in Europe, the consortium of university presses are doing open access scholarly monograph publishing. Bloomsberg Academic, under Frances Pinter, has taken that approach. Athabasca Press in Canada is an all open access publishing operation...open access monograph publishing hasn’t been quite as prevalent in the U.S., [our press]... experimented with a series...that way, National Academies Press of course pioneered, way back in the early 90’s, by putting up books online and they’re probably the press that has gone the furthest in this direction, and then there have been a number of presses like Pitt and others that have selectively put some of their backlist titles up as open access, University of California Press has done that and some others, so that is beginning to move, but there’s still very few experiments in the U.S. with front list open access titles.
The comments of another respondent support this argument, representing the view of a publisher for whom open access is already the default position:

open is what [we do] – since June of last year, make PDFs of everything [openly available], mission is one of openness, following our mission is important – encourage scholarly publishing be driven by mission; go as open as you’re comfortable with, and then go a step farther; maybe make freely available in ASCII – could draw an audience, support the field, without threatening the revenue; look at it as a tool, not a threat – helping inform scholarship.

Suggestions for improvement for scholarly monograph publishing?

The most common suggestion for improvement, brought up by six of the ten respondents, is for everyone in the system – scholars, libraries, and publishers – to work together. As one respondent expressed this, “[Let’s keep the] needs of researchers first – keeping talking –… don’t fight each other”.

One respondent focused on the potential to improve the system through library / publisher collaboration:

Embedded in libraries –can’t stress enough – [librarians are] on our board, more up on things like aggregators…when we looked at what was happening around the world, innovative stuff coming from libraries rather than publishers; from the publishers’ perspective, the library won’t pay – but the library is not being a meanie.

Another respondent argued that the different areas of the university system, including faculty careers and libraries as well as publishers, should be managed for harmony rather than conflict, as at present. In the respondent’s own words:

[the] biggest problem [is that the] university controls the lives, careers of scholars, libraries, and faculty – university does not manage in harmony, but rather conflict – press has to make money, library has to save, faculty in the
middle of this conflict; ideally, would think through managing different areas against each other.

This respondent added that educating scholars to understand the work of publishers would be helpful, because too often publishers are “painted as the enemy by scholars.” This is based on the false assumption that there is a lot of money to invest and that technological innovation is easy. However, my respondent noted that “technology innovation around scholarship is harder than it seems”. Publishers need to do a better job explaining their costs and services:

often publishers are their own worst enemies – most academics don’t really understand what a publisher does – [they] assume because [they are] paid 5-10% [in royalties], publisher is taking 95% of the income. [they] don’t understand the economics of scholarly publishing… [for example] if selling a book on Amazon, [the publisher] has to give a 50% discount, …publisher should do more to tell scholars what they do with a book.

Another respondent emphasized the need for education of librarians, particularly about the differences between the commercial and not-for-profit sectors:

[In] general – [it is] very important [that there be a] greater level of alignment between libraries and scholarly publishing – [there is a] tendency because of Elsevier for libraries to feel publishers are their enemy [but this is] not true for not-for-profits.

Several respondents spoke to the strategic benefits of working together. One respondent said, “librarians, publishers [of] monographs and journals – together – we have a stronger voice with federal funders and other audiences”. Another respondent made a similar point, emphasizing the need to reconnect the disparate parts of the system to ensure institutional support for scholarly publishing:

over [the] last 5 years – more and more university presses need to reconnect with their universities, work with faculty and local scholars – moving into a
different era, institutional backing makes a difference in what press can do – mostly U.S. – Cdn support is very different – (more support) – means more Canadian scholarship comes out.

Another respondent focused on strategy within the university: “[we] want to be seen as an essential service; repositioning ourselves as part of academic purpose – everything else in academia [is] not expected to bring in revenue”.

Some respondents suggested a fundamental shift in the academic reward system to a more qualitative approach. On this point, one respondent argued:

One thing that would help would be to fundamentally shift the academic reward system, [and] move to a more qualitative system...[the] current system, publish or perish leads to publication of too many marginal articles and books; junior scholars seeking to publish [do so as] a credential to get tenure –[it is] better to think of the reader, take the time to think of argument...[and] focus on quality, not quantity.... [There is] an overproduction of scholarship stimulated by the incentive structure that each young professor faces.

Discussion

The impact of the commercialization of scholarly works, particularly the diversion of library support towards STM journals and consequent loss of revenue by scholarly monograph publishers, was a major theme in most of the interviews. A push toward commodification of scholarly monographs per se was evident in several of the interviews, with both positive and negative implications for scholarship. An example of a negative implication is diversion of scholarly monograph publishing to trade books, decreasing the numbers of scholarly works published. An example of a potentially positive implication is the careful attention to usability and marketing of e-books, as this is likely to improve the experience of e-books for both readers and authors.

The question about bureaucracy was designed to elicit feedback on the topic of irrational rationalization. However, respondents fairly uniformly interpreted this as a question about bureaucracy within their organizations. Other comments, however, such
as the cat and mouse game played over publishing of theses by libraries and publishers, suggest that irrational rationalization is evident in this sector.

The most frequent comment to the question about suggestions for improvements to scholarly monograph publishing involved having the different players in the system – librarians, scholars, and publishers – work together rather than at cross-purposes. This suggests that respondents are seeing the trend of irrational rationalization and would be in agreement with my recommendation of taking a holistic or systemic approach as a remedy for irrational rationalization.

Of the alternatives covered in chapters 3 and 4, the alternative discussed by the largest number of respondents was open access, an alternative that has the potential to reverse the substantial decrease in dissemination of scholarly monographs to about 300 to 400 print copies to ready access to anyone, anywhere.

**Limitations and conclusions**

This small group of respondents was not designed to be a random sample. Nor is the group large enough to conduct any useful statistical analysis. My purpose in conducting these interviews was simply to allow a selection of industry insiders an opportunity to discuss their views about changes in the industry in depth. In doing this I was looking for a way to add a qualitative dimension to the quantitative material outlined in earlier chapters. I also wanted to add voices of experience, other than my own, that might provide personal insight into the broad historical trends in publishing that have been discussed thus far.

Major themes to emerge out of these interviews include: the decline in the sale of scholarly monographs over the past few decades, at the same time that the profits of a few commercial scholarly journal publishers have risen dramatically; and the efforts of scholarly monograph publishers to rethink their business models, and day to day operations, in the face of technological innovation. Publishers are responding to these challenges in innovative ways, including diversifying their title lists by turning to trade publications, reference and regional book publishing, as well as experimentation with new forms of electronic publishing. All of these trends are consistent with trends
identified by John Thompson (2005) in his major study, *Books in the Digital Age*. Themes and issues raised in my interviews also largely support the conclusions of Brown (2007) in the Ithaka report on scholarly publishing, and especially Brown’s argument that the need for academics to publish is no longer being matched with sufficient revenue to fund a functional scholarly monograph publishing system.

My conclusions from these interviews are much more optimistic than Thompson or Brown, largely because of the potential of the e-book and, in particular, the open access e-book, to reverse the dysfunctional downward cycle of the past few decades. In my day-to-day work as a librarian I have also witnessed an emerging tendency for different portions of the system to work together collaboratively, however slow and imperfect this may be. By heading in this cooperative direction we might offset some of the problem of irrational rationality that I discussed in chapter 2. We are at a point in time where a scholarly monograph may be made available through no more than 300 copies in print, which may be purchased by libraries, where some copies will never be opened by a reader. Alternatively, or the same book could be published openly on the web, with free access to anyone, anywhere.

In my view, the key to the transition, as with scholarly journals, will be transitioning the underlying economic support, which largely comes from academic libraries. My perspective is that library consortial support, as advocated by Frances Pinter, is a model worth looking at, although based on my work experience in a library consortial environment, I would suggest a regional approach rather than the international approach advocated by Pinter. If 100 libraries in a particular region were to pool their resources at the rate of $100 per book, this would raise $10,000, an amount within the range Pinter and Greco and Wharton (2008) describes as necessary for the first copy costs of a scholarly monograph in electronic form. If libraries were to undertake the hosting and support services for monographs (as many now do with journals, and some with books), as well as preservation costs, then perhaps this could lower the first copy costs still further. There may be other elements of scholarly publishing that merit exploration of different approaches. For example, one university press publisher talked about a cost we don’t normally think about, the cost to the publisher of supporting nominations for book prizes, publicity for prize winners and that sort of thing. Could this be an appropriate role for a university communication department? There are many
potential variations of this basic model. Some variations would include the concept of
dual edition publishing, with one edition being free online and others available on a for-
pay basis.

Another idea would be to directly connect the cost of publication to expectations of scholarly monograph publishing. A fee of $10,000 to publish a scholarly monograph might seem rather steep, however if the assumption is that a scholar will publish a book only once every six or seven years, this is quite affordable compared to paying $1,500 on a per-article basis for open access journal article publishing. The advantage of this approach is that it would create a disincentive to requiring more quantity in publishing. If a department wants a scholar to publish twice as many monographs to achieve tenure, it would cost twice as much. A downside of this approach is that it would increase the cost of hiring tenured faculty, and so might increase the prevalent trend towards precariousness of academic positions.

The interview material discussed in this chapter suggests that changes have been taking place in the scholarly monograph per se, not only how many are published, but also in the editing process, as more attention goes into the technology and commercial aspects, with some reason to suspect that this comes with some loss of quality in editing, and possibly less creativity. The e-book has the potential to transform the form of the book, with the concept of the liquid book that permits readers to join a conversation around a book being just one example of what is possible. This is interesting, but a caution may be in order. As noted by some of the respondents in this study, there are some forms of work that require the long form of writing we know as the scholarly monograph. While there are fascinating possibilities for new forms of collaborative, multimedia works emerging with the e-book, there is also something about the sustained effort of thinking and writing about a subject for an extended period of time that could be lost in such a transformation.
Chapter 7: Scholarly communication and the discipline of communication

This chapter examines the academic discipline of ‘communication,’ viewed in the context of the significant trends in scholarly publishing that have been discussed in earlier chapters. The initial focus of the open access movement was on scholarly journal articles (rather than monographs or other forms), for the practical reason that scholars have traditionally given away both their articles and their peer-reviewing services, as discussed in chapter three. The initial focus of the open access movement has also been on science, technology, and medicine (STM), largely because the high cost of journals in these areas is problematic for the whole system of scholarly communication, as discussed in chapter two. For this reason, the humanities and social sciences as a whole, including the discipline of communication, have not received the same level of attention as STM. However, I argue that scholarship in humanities and social sciences is every bit as important as scholarship in STM, and for this reason open access to our scholarship is important, too. The example of the participatory action research study noted in chapter two, published in a toll-access journal yet inaccessible to the young aboriginal women who served as participants and many of those who might wish to help them, is just one illustration of how the important work done by communication scholarship could be more effective if it were openly accessible.

Critical views: a literature review and critique

Communication scholars have contributed significantly to the theoretical and economic analysis of the transformation of scholarly publishing. For example, Merrett (2006) has conducted important research detailing the impact of the commercial sector on scholarly publishing. Of particular interest, Merrett discusses the massive profits from scholarly publishing that international commercial publishers benefit from, in spite of adding little value to the publishing process. One effect of price increases for
commercial “big deal” packages including essential journals, especially in the science, technology and medical (STM) areas, has been a decrease in funding available for purchase of other journals and scholarly monographs.

Pirie (2009) affirms much of the information provided by Merrett. Pirie points out that the scholarly publishing industry can be considered a failure in neoclassical economic terms, with operating profits of the largest commercial publishers in the range of 24-45 percent, in comparison to the average U.S. manufacturing firms’ profit of 7.1 percent (Bank of Korea, 2007), reflecting a lack of competition. Pirie suggests that mainstream criticism of this situation is limited in that it does not take into account the broader political economic context. In particular, Pirie is highly critical of May (2005) who views alternative open source and open access publishing as capitalist in nature, just differently capitalist, combining elements of public good within a basically capitalist system. May (2010) argues that open access is not a revolution, but rather a further development of the struggle to balance public and private interests. While this argument has a degree of credibility, Pirie (2009) claims that May’s article is “fundamentally atheoretical, accepts some of the claims made by academic publishers uncritically, fails to engage in an in-depth analysis of the structure of the journal-industry, and makes highly suspect recommendations for reform.”

Pirie’s analysis is based on the UK, or more broadly the core English-speaking capitalist countries including primarily the UK and the U.S., as well as the Netherlands, a limitation that Pirie acknowledges. The UK academic journal industry is highly competitive and a net exporter, and is worth about £1 billion annually to the UK economy. Pirie discusses the need for capital to find new areas of accumulation based on intangibles rather than physical production, and the increasing marketization of the public sphere since the 1970’s. Pirie questions whether approaches that seek to modify capitalism have any chance of success, predicting strong opposition from capitalism as a whole, and suggests that change needs to come through a broader movement away from capitalism to socialism. According to Pirie, there are two options for scholarly publishing: the commercial system and state support. Pirie recommends a state-supported system of open access journals.
I would argue that Pirie’s analysis is excessively essentialist in nature, with a narrow focus on the benefits of the current system for capitalism but insufficient recognition of tensions and contradictions within the system. Notably, Pirie misses a very important point: the business community is part of the public that is denied access to the results of work funded by the public under the subscriptions model. It is true that the business community can purchase access to subscription journals or articles, however, the price barrier is sufficient to discourage such access, and, since the business community contributes to the production of the information through their taxes, they should not have to pay again to read the results.

While competition is lacking within the scholarly publishing industry, the interests of this industry are also in conflict with the interests of other industries. If the university library is forced to pay large sums to access scholarly journals or do without, so are the pharmaceutical company, the oil company, and the entrepreneur who is looking for new environmentally friendly business ideas. In this context, contesting the commercialization of scholarly publishing does not threaten capitalism as a whole, but rather pits the interests of one small group of publishers against a great many other capitalists. Polanyi (1957, p. 132) touches on this paradox when he points out that even the organization of capitalist production needs shelter from the self-regulating market. This situation presents an opportunity to mobilize capitalist support for open access, a move that may incidentally protect and expand the public sphere.

According to Pirie, the one essential role of commercial publishers is funding the publishing process; all other functions from authoring to reviewing to editing are performed by academics. If an alternative source of funding could be found, the role of the commercial publishers could be done away with immediately. Pirie’s suggested remedy is central state support through the UK research councils for scholarly journals. However, I have argued earlier in this dissertation that a key source of alternative funding involves redirecting funds from academic library budgets. The strong centralization of library services such as purchasing (for example, through the Joint Information Systems Committee) suggest that this distinction may not be as relevant in the U.K. as it is in other regions.
The RIN (2008) report illustrates the need for a more detailed political economic analysis of scholarly publishing. The report examines the current costs of scholarly publishing in the UK and projects these globally, including non-cash costs such as reading and peer review, but excluding research production. Four future scenarios are modeled. The first two, a shift to electronic-only publication for journals and a shift to author side payment for journal articles, reflect an unstated assumption of continuing high profit levels for commercial scholarly publishers. From my perspective, this assumption should be clearly stated, and challenged. The third scenario explores what happens if one aspect of the scholarly communication system, peer review, were to move from the current gift economy to a cash one. It is clear that this would result in an enormous increase in the cost of scholarly publishing. While this scenario is obviously impractical, it is interesting from a political economic perspective in that it illustrates that a shift from a gift economy to a cash economy can be disastrous, even from a classical economic point of view. Publishers could not raise prices to account for the increased costs of this system, as this would increase the prices far beyond what the market could bear.

Drahos and Braithwaite (2002), whose work is covered briefly in chapter two, locate the present state of academic publishing within a broader context. They see the gradual enclosure of information through intellectual property rights as part of an incomplete project of information feudalism. This enclosure project is based on the idea that private intellectual property rights are necessary to support innovation, an idea that is not supported by evidence. As Drahos and Braithwaite point out, there have been many periods of great creativity, such as the classical music period of the late 18th and early 19th century. This was the age of, among others, Mozart and Beethoven, during which there was no copyright. Drahos and Braithwaite attribute much of the creativity of the past century to investment in public universities, and point out that three of the most consequential contributions of science (the human genome, the Internet, and the secrets of splitting the atom), were so consequential precisely because the U.S. government made them public goods. The current tendency for universities to move from the creation of public knowledge to seeking of patents will likely do more to stifle than encourage innovation.
Drahos and Braithwaite characterize knowledge as an “imperfect public good.” Traditional economics considers a good to be public when it is non-rivalrous and non-excludable. A good is non-rivalrous when consumption by one person does not diminish the supply for the next person. A good is non-excludable when it is very difficult or impossible to make the good available for some and not for all. Military security is one example of a nonexcludable good. If a territory is secured, it is secured for everyone in the territory. Knowledge is nonrivalrous in nature; if I know something and someone else learns it, my knowledge is not diminished at all. It is difficult to exclude knowledge, but the texts that contain knowledge can be excluded. Drahos and Braithwaite point out that the nonrivalrous nature of knowledge makes it extremely attractive for capitalists; the same knowledge can be sold, over and over again. As I argue above, it is more accurate to say that enclosing knowledge is extremely attractive for a few capitalists, at the expense of the vast majority.

Both Merrett (2006) and Bergstrom (2001) point out the precarious situation of the commercial publisher; all that they own is the journal name. A journal's editorial board, authors, and readers are free to walk away and start their own journal. Until recently, this would have been a difficult decision. Now, however, with the ready availability of free, open source software and the ubiquitous access made possible through open access, plus the widespread availability of new hosting and support services through libraries, what was once difficult is well within the reach of a large and growing percentage of journals.

Striphas (2010) analyzes and critiques scholarly journal publishing in the field of cultural studies. Like other academic areas, cultural studies publishing is heavily dominated by commercial players, including Sage and Taylor & Francis. The journals of these publishers can be up to 8 times more expensive than the journals of not-for-profit publishers such as Duke University Press and Wilfred Laurier University Press. Striphas highlights the contradiction between the participation by cultural studies scholars in this commercially dominated system that prioritizes profit over communication, and the values of early work in cultural studies, as articulated by Stuart Hall:

"Reflecting on the work of Antonio Gramsci, Hall asserts that the first task of the political intellectual is to know more than the other side. He adds that the equally
important task is to communicate that knowledge widely and effectively". (Striphas, 2010, 4).

Yet, the scholarly communication system that cultural studies scholars are caught in prioritizes profit over dissemination. As Striphas points out, commercial publishers have no reason whatsoever to seek to share cultural studies scholarship with labour, environmental, or advocacy organizations if they do not have money to purchase the journals. Striphas recommends that cultural studies scholars take action, by negotiating to retain copyright, participating in open access and refusing to provide peer review for “rogue” journals.

Communication as a discipline: an empirical study

This section reports on the results of an empirical study of scholarly journals in communication. One problem confronting the communication scholar is the difficulty of defining the discipline, as noted by International Communication Association (ICA) Presidents Rice and Putnam (2007) and Poor (2009). Ulrich’s Periodicals Directory is generally considered the world’s most authoritative list of scholarly journals. However, under the subject heading “Communications”, there are many journals listed that are actually in technology areas relating to communication, more suitable to engineers than to critical communication scholars. Some communication journals are not listed under the subject “Communications”, for example the Canadian Journal of Communication, which is assigned the subject heading of sociology.

For analysis, I selected the periodical list from EBSCO’s Communication and Mass Media Complete, and the Directory of Open Access Journals, for the time frame of 2010. While the EBSCO list is clearly problematic, it is the most comprehensive and


\[15\] The EBSCO Communication and Mass Media Complete list is problematic for research on communication journal publishing. One problem is related to the scope of
reasonably focused list available. Of the 642 titles in the EBSCO list, half (323) are listed as published by publishers with 10 or more titles in this field. All of these journals have some commercial involvement, although many are published by scholarly societies in partnership with companies. Informa is not included on EBSCO’s list, even though it is the owner of Taylor & Francis, Routledge, and Psychology Press. With 70 journal titles, Informa is the largest publisher in communication. Informa.plc is a sizable transnational corporation, with 150 offices in 40 countries, and Informa describes itself as the world’s leading organizer of conferences and courses, in addition to academic publishing. 2009 revenue was £1,221.7m and adjusted operating profit £309.5m, for an adjusted operating margin of 25.3%, up from 2008’s 23.9%, according to the Informa Annual Report (2009), which paints a rosy picture for the future with “the majority of subscriptions…renewing in line with previous high rates” (Highlights, Summary and Outlook). According to Chief Executive Peter Rigby, the publishing business is doing exceptionally well, accounting for 72% of the profits (£222m).

Curiously, while Informa may be the world’s largest journal publisher in the area of communication, it is very difficult to find a usable list of communication journals from the Informa website. To find the list of 70 journals, I went to the Routledge page and clicked on “special offers”. Elsevier, the world’s largest scholarly publisher and a highly profitable transnational corporation, publishes 19 titles in this area, including 8 titles under the Pergamon Press imprint, according to EBSCO’s Communication and the database, e.g. including journals with only partial content in this area. For example, 79 journals are listed in this database as published by Sage publications, while the Sage Media and Communication title list includes only 39 journals. Another problem is accuracy; for example, journals of the International Communication Association are listed as published by the National Communication Association. In spite of the problems, this appears to be the most comprehensive list in this area, including 642 titles, and appears to be sufficient for a broad overview of ownership in this area. To analyze the journals listed in EBSCO’s Communication and Mass Media Complete database, I downloaded the title list, and limited to academic journals identified as peer-reviewed.

If the EBSCO list is somewhat imperfect, this may reflect to some extent the dizzying speed of recent concentration in this area. EBSCO lists 10 journals published by the independent business Multimedia Matters. According to the Multimedia Matters website (2010), their journals are owned by Taylor & Francis and published under the Routledge imprint, as of April 2008. The EBSCO list includes 27 titles under Blackwell, now owned by Wiley.
Mass Media Complete. Communication is not listed as a subject heading, or even as a sub-heading under Social Sciences on the Elsevier website. Similarly, Springer, the world’s second-largest scholarly publisher and another transnational corporation, publishes 16 titles in this area according to the EBSCO list, but does not list communication as a discipline or sub-discipline on the Springer website. There may be Elsevier or Springer communication journal lists elsewhere that I have not found, however it is clear that these publishers are not proudly highlighting their holdings in communication journals. Why is this so? I have no way of knowing for sure, so this is pure speculation, but I wonder whether the priorities of these publishers is the highly profitable science, technology, and medicine (STM) sector, and they simply haven’t bothered with developing marketing lists for the less profitable area of communication. This would be worthy of further exploration; one wonders how other areas in the social sciences and humanities fare on the websites of these publishers.

Wiley-Blackwell (2010), the last major transnational corporation on this list, includes 18 titles under Communication & Cultural Studies on the Wiley Interscience website. Altogether, this makes approximately 123 of the 642 journals in the field of communication, or about 20%, that are owned by transnational corporations. This ownership situation is more complex than it at first appears. There are many journals that are published by corporations that are actually published in partnership with learned societies. Of the 18 Wiley Blackwell titles, scholarly societies hold the copyright to 11 titles, including, for example, the 5 International Communication Association Journals. The National Communication Association (2010) sponsors 10 journals, which are published by Routledge (owned by Informa). Even where the corporation “owns” the copyright to the journal, as mentioned above they do not own the academic editorial board. While they may have ownership to previous issues, they do not have ownership of future issues, an important point, as it is recent information that is lucrative in this business.

There are still several significant independent publishers in this area, including the John Benjamins Publishing Company with 39 titles, Lawrence Erlbaum Associates
with 32 titles, De Gruyter with 20 titles, and Intellect Ltd. with 13 titles (according to the EBSCO list). Sage, an independent company, publishes 37 journals in *Media and Communication Studies*, plus *Communication Abstracts*. According to the Sage website, Sage publishes a total of over 560 journals, of which 245 (43%) are on behalf of learned societies and institutions.

 Scholarly society journals and those published by independent presses are doing very well by the standard of the traditional impact factor. It should be noted that the impact factor is problematic for many reasons, and in my opinion is overused as an estimate of journal quality. However, it may be noteworthy that the corporate sector, despite the huge profits, does not necessarily fare as well by this traditional indicator of quality as one might think. Of the top 10 journals in communication by impact factor, only one, Taylor & Francis’ *Journal of Health Communication*, is fully owned by a transnational corporation. The 4 journals of the International Communication Association (published by Wiley on behalf of the association) are in the top 10. The not-for-profit Oxford publishes one title, and the remaining 3 titles are published by independent companies Sage, John Benjamins, and Mary Anne Liebert. A list of titles, publishers, and impact factor can be found in Appendix E. These findings are similar to those of Bergstrom (2001) in the area of economics. Like economics, highly profitable commercial publishers are not well represented at the top of the impact factor list. However, economics and communication are clearly different in the number of scholarly society titles outsourced to commercial publishers, and more independent commercial publishers appear high on the impact factor list in communication.

 The other half of the EBSCO *Communication and Mass Media Complete* title list is composed of publishers with fewer than 10 titles in this area, 299 journals altogether. Most of these are very small publishers, with 1-3 titles each. The vast majority of these journals are in the not-for-profit sector, published by scholarly societies or associations or university presses. For example, Cambridge University Press publishes 9 titles; Oxford, 6, and the California University Press, 5. A fairly typical example is the Canadian

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16 The reason this is approximate is because I am not able to verify the Elsevier or Springer title counts, and as mentioned above, the 642 titles may reflect a broader scope than just communication.
Communication Association that publishes only one journal, the *Canadian Journal of Communication*.

Striphas (2010) analyzes a selection of journals in the area of cultural studies, and finds that the rate of increase of journal titles between 1960 and 2004 was an average 6.3 percent per year, double the overall rate of increase for all journals in this time frame. One possible explanation for this extra growth is growth in the area of cultural studies per se during the last half century.

To summarize this section, journal publishing in communication shows more diversity in ownership and less concentrated ownership by large transnational corporations than is the case in scholarly publishing overall. Even among the estimated 20% of communication journals owned by transnational corporations, there are many journals where scholarly societies still own the title. There are still independent publishers, and many not-for-profit publishers active in this area; it is these publishers who dominate the top of the traditional impact factor list. This is good news, in that it suggests a stronger than average potential for emancipation. That is, the large, highly profitable transnational corporate publishers do not have a stranglehold on communication publishing, as they do in other disciplines.

There is a large and growing body of fully open access journals in the field of communication. The Directory of Open Access Journals listed 76 titles under the subject heading of *Media and Communication* at the time of data analysis (the total is 100 titles as of 2012). Given the difficulty of assessing the total number of journals in communication per se, and a lack of research on the relative percentages of OA journals across disciplines, it is difficult to estimate the percentage of OA journals in communication in comparison with other disciplines. This is an area where further research would be helpful. There is some overlap between DOAJ and the EBSCO list. The vast majority of the OA journals, more than 80%, are published by the not-for-profit sector. Universities publish two-thirds, or 50 journals; about 15% are published by societies (11 journals); and 1 by a library. One journal is published by an independent publisher, and two by the for-profit corporation Hindawi publishing. The 76 journals have 74 different publishers; aside from Hindawi, the only publisher on the list with 2 journals is Queensland University.
These journals are published in 25 different countries on 5 continents (Africa is not represented, and there is only 1 journal published in Asia), and 12 languages are represented (a western-centric list of languages, with only one journal in Chinese). This list reflects a greater cultural diversity than the EBSCO Communication and Mass Media Complete, but is still lacking in non-western representation. The journals in the DOAJ Media and Communication list are mostly very new journals, based on the start date in DOAJ17. There are 2 journals with start dates in the 1980s, 11 in the 1990s, and the remaining 61 have start dates in the 2000s. Note that the DOAJ start date is not necessarily the year of the founding of the journal, as older journals often have back issues that have not yet been digitized and placed online.

Poor (2009) conducted a citation study comparing citations of a sample of 17 open access journals in communication studies with the overall citation patterns for the field. Similar citation patterns were found, albeit with more international citations for the open access journals. Poor concludes that this is an indication of the health of the open access journals and of the field as a whole. That is, open access is very much a part of the overall conversation in the field, not a side-conversation as would be indicated by significantly different citation patterns.

**Further emancipation and sites of struggle**

By “emancipation”, what I mean is scholarship that is as free as possible for readers, one that is designed to serve the needs of scholarly communication led by scholars themselves, and is free to give priority to advancement of knowledge rather than serve the interests of capital, as exemplified by the profit motives of commercial publishers. This is a large project, and one that this chapter only begins to address.

As noted above, the active involvement of scholarly societies and the limited control by the corporate sector bodes well for emancipation in the discipline of communication. However, all scholarly publishing is influenced by the control the

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17 The DOAJ start date is not necessarily the journal start date, as older journals may not have all back issues freely available. The DOAJ start date reflects the first date for which free fulltext is available.
commercial sector has over scholarly publishing overall. Library budgets are tied up in the “big deals” of the large commercial publisher, which limit the availability of funds for new open access initiatives.

Scholarly societies themselves are sometimes a part of the problem. Speaking on behalf of the International Communication Association (ICA)’s Finance Committee, Donsbach says: “Publications...yield a surplus of between $500,000 - $600,000 because expenses for the editors' offices stay far below the income”. Donsbach expresses concern about open access, as a perceived threat to this revenue (Donsbach, 2008). It should be noted that ICA's surplus is on top of the profits of Wiley, the publisher of the ICA journals. By my estimate, the entire ICA journal publication program could be run as open access, at top quality, for about a quarter of the current ICA surplus, without even factoring in the Wiley surplus, or the current cost of production (Morrison, 2010). This example, which is not uncommon, illustrates the wide difference between journal pricing and the cost of production today.

One of the ICA journals, the Journal of Computer Mediated Communication, is open access, even though it is hosted on the Wiley server. This suggests that there is struggle within the ICA over such issues. ICA’s reliance on a surplus from publishing profits is a very common experience for scholarly societies, and one of the barriers to change. In addition to concern about loss of publishing surpluses, societies worry that they will lose members without the member benefit of free or discounted access to journals. Threats to societies from loss of revenue and exclusive membership benefits to journals are not new. For most societies, the increasing share of library budgets going to commercial publishers has meant that there is less available for their journals. Library site wide subscriptions to journals in electronic form have been decreasing the value of journals as an exclusive member benefit for years. Societies with organizational models based on a world where information was disseminated in print need to rethink how their organization will work in the future. For the vast majority of scholarly societies (including ICA), a model that limits dissemination of scholarship is at odds with the basic mission of the society, which usually includes statements about disseminating knowledge as broadly as possible.
When scholarly societies outsource publishing services to the for-profit sector, there is an inherent conflict in the goals of the two parties. To return to the ICA example, ICA has outsourced journal production to Wiley, a for-profit corporation with a single overriding goal: profit to shareholders. Continuing to share surpluses with ICA is at conflict with this basic goal of Wiley’s. The corporation has incentive to share profits with ICA, only as long as this is the only way to continue publishing the journals. Otherwise, it would be in the interests of Wiley shareholders if ICA were to cease to exist, as this would leave all of the profit for Wiley shareholders. This is not to say that Wiley would deliberately aim to eliminate ICA, rather that the most basic goals of the two parties in this partnership are in fundamental conflict. ICA’s desire is to continue to exist and enjoy surpluses from publishing, while Wiley’s commitment to shareholders is to maximize profit.

The Canadian Journal of Communication (Felczak, Smith & Lorimer, 2008) participates in the Public Knowledge Project (2010), discussed earlier, contributing to the development of the free, open source Open Journals Systems software. The journal also participates in the Canada-wide Synergies (2010) project that assists Canada’s social sciences and humanities journals to publish in an online environment. The authors argue that Synergies and Open Journal Systems present academics with “strategic opportunities to define and control online scholarly publishing”. The Canadian Journal of Communication, like many journals, follows a partially open access model, with new issues limited to subscribers for an embargo period of one year, followed by open access to everyone.

Scholars can aim to publish in open access journals where possible, within the context of current tenure and promotion expectations. Furthermore, scholars can choose to serve on the editorial boards of open access journals, and refuse to provide free peer review services for the highly profitable commercial sector. Senior scholars and university administration can assess whether tenure and promotion guidelines should be updated to reflect the need for change in scholarly communication. Most open access journals do not charge publication fees. However, when they do, the library may have a fund to cover such fees, and research grants may often be used for this purpose.
Another site of resistance is self-archiving of published articles for free access. The majority of traditional publishers allow author self-archiving, as documented by the Sherpa RoMEO Publisher Copyright Policies and Self-Archiving site. For example, Sage journals permit self-archiving of preprints, and post-refereed postprints (after a 12 month embargo). Scholars can negotiate rights retention through the use of an author’s addendum, such as the SPARC Canadian Author’s Addendum (SPARC, 2010).

Finally, funding agencies, universities, and research institutions are resisting enclosure of scholarly articles by developing and implementing policies requiring open access to the research that they support. There are over 200 such policies around the world, as listed in the Registry of Open access Repository Material Archiving Policies (ROARMAP). Some policies are top-down, while others are faculty-led. Interestingly, some of the best known universities in the world, such as Harvard and MIT, are taking a lead in developing open access policy. Faculty-led policies implemented at Harvard and MIT, in addition to promoting open access, also assert or reassert the rights of scholars to grant licenses for their works to the universities. This is an effective way of limiting the possibility for any broad-based commodification of scholarly knowledge.

Summary

The discipline of communication has not undergone as much enclosure as some other disciplines, such as those in the areas of science, technology and medicine (STM). Scholarly societies maintain a large portion of the market, and even retain control of many of the journals that are in the hands of the transnational corporations, and there are still independent publishers in the market. Hence, communication scholarship is in good shape to transition to a more scholar-friendly, open access environment. There are now a hundred fully open access journals listed in the Directory of Open Access Journals under the subject Media and Communication Studies. Scholars or scholarly societies wishing to move into independent publishing will find that a large percentage of universities (usually through the library) can provide hosting and support services for journals. Scholars can self-archive their work in institutional or disciplinary open access archives. Funding agencies, universities and research institutions throughout the world are developing policies requiring open access to the research that they support. This is
an opportune time for faculty to lead the process, and develop policies like the ones at Harvard and MIT that assert or re-assert the rights of faculty to grant rights to the university to their works.
Chapter 8: Conclusions

This thesis started out by exploring a communication system that generates enormous profits for a very few large commercial scholarly STM journal publishers, while students, scholars, universities, many scholarly monograph publishers, society and smaller independent publishers struggle. Many of the newer scholars who voluntarily give their journal articles and peer review services to these highly profitable publishers face an increasingly precarious existence as part-time, untenured academic labourers. The collective student debt load in the U.S. recently exceeded $1 trillion, a large enough amount to raise concerns about the impact of this debt on the economy as recent graduates find themselves with limited incomes and few prospects. This is at a time when large commercial scholarly publishers are boasting record or near-record profits. This is a system that serves short-term private interests, but is far less successful at serving the needs of scholars and scholarship, viewed as advancing the collective knowledge of humankind.

Putting profits above social needs in this way is an example of what Polanyi once described as the point where the needs of the market economy subsume social needs. This is one indicator of one of the major societal trends underlying the changes in scholarly communication that have brought us to the current commercialization of scholarly information. In earlier chapters I have noted how commercialization is far from new in scholarly publishing. What has changed since the end of the Second World War, as De Solla Price argues, is increasing investment in science and technology to serve the needs of capitalists for profits; it is this sector, science, technology and medicine, where high-profit publishing is concentrated.

Capitalism’s need to constantly expand opportunities into new territories, whether geographic or conceptual, to extract surplus value is not new either. In recent decades, what has been relatively new for universities and for scholarship, in addition to the expansion of capitalism into science and invention discussed above, is the enclosure of information for extraction of additional profit. Mechanisms of enclosure, such as DRM,
emerged to meet this need. The extension into the realm of scholarship of capitalism’s relentless drive for profit is the primary underlying reason for the crisis in scholarly publishing that has been with us for decades, documented in depth by the Association of Research Libraries (ARL) and others.

Throughout this dissertation I have described many theorists and activists who have worked to identify, critique and challenge the trend towards enclosure of information in all its forms, from scholarship to cultural products. Many of the critics that I have discussed have also been working on articulating one of the emerging alternatives to enclosure of information, that is, the commons, a major theme of the third chapter of this dissertation. It might be more accurate to say that this is a re-emerging alternative, as the concept of the commons, embodied in the idea of the universality of communications, is not new. For example, I have shown how the idea of universality in communication was very much evident in discussions around the development of the telegraph, and the postal service has long been a model for universal service.

Dewey and Park’s conception of the potential of new media as forming the basis for the development of a broad moral and political consensus in the United States may seem romantic if not naïve in 2012. The potential of new media and the uses made of new media by elites are two different things. However, although the democratic potential of new media has not been realized – at least, not yet – it is still there. As far back as the late 1960s, Enzensberger pointed out that many of the new media that we currently experience as one-way only, such as radio and television, could easily have been developed to facilitate ‘many to many’ communication as does the Internet today. Networked technology creates the potential for a new means of communication in which all can participate, which could become the basis of a new form of socialist government according to Enzensberger. In my opinion, this conception fits with the notions of strong democracy proposed by Sclove and others. As Feenberg might say, the technology underdetermines the outcome. We can have an Internet that supports a free and equitable society in which everyone can both benefit and contribute, or we can have an Internet that supports only the profit making of capitalist business interests. It is up to us; if we wish to have a free Internet, we need to be prepared to struggle to achieve this. Enzensberger argued that there was a need for a socialist theory of the media. Now that information and communication have become key aspects of capitalist productivity
(foreseen by Marx, even if he did not dwell on this as this was not the primary mode of capitalist production at his time) one might argue that a socialist theory of media is long overdue.

The concept of the commons is much broader than just information, including for example collective management of natural resources. A key theorist of the commons is Elinor Ostrom whose work 'Governing the Commons' is important in debunking the currently popular idea of the inevitability of the 'tragedy of the commons'. Ostrom illustrates successful commons, some of which have operated for centuries, and analyzes the factors that make such commons work. In my view, the 'knowledge commons' can be seen as a subset of the overall development of the commons. Communication scholars have much to contribute to the development of knowledge commons, with Pirie, Striphas, and Brophy, adding to the voices of Suber, Bollier, and others.

In this dissertation I argue that one of the key areas of struggle for a knowledge commons in scholarship at the moment is the movement towards open access, that is, scholarly literature that is free to read online and free of most copyright and licensing restrictions. This movement has the potential to disrupt the trend towards increasing enclosure of scholarly knowledge for private profit. Despite the dramatic growth of open access – over 8,000 fully open access, peer-reviewed scholarly journals today, growing at a rate of more than 3 titles per day, and thousands of open access archives around the world – the commodification or enclosure of scholarly knowledge for profit has not abated. The large commercial scholarly publishers, with growing profits, are a powerful lobby for enclosure and many continue to be outspoken opponents of open access.

Still, and interestingly, much of the growth of open access is due to a movement of the commercial sector into open access publishing. For new publishers such as BioMedCentral and Hindawi, this can be seen as simply a smart business move; there is minimal room in the current system for new entrants into scholarly publishing on a subscriptions basis, whereas the open access article processing fee approach taps into different sources of revenue. This shifts the form of the commodity from the scholarly work per se, freeing these works from the trend towards enclosure for profit, to the service of publishing. However, this trend does not address the increasing involvement
of the commercial sector in scholarly communication. The trend can only be countered through a variety of means of support for scholar-led publishing, including state subsidy, support for DIY publishing such as library publishing services, and publishing cooperatives for smaller society publishers.

Many open access advocates equate strong or libre open access with the Creative Commons – Attribution Only license. One of the major emphases in earlier chapters is an in-depth analysis of the overlap of open access and the Creative Commons licensing. This analysis reveals a weakness in the CC Attribution only license, which superficially appears to express the intent of libre open access, but creates vulnerabilities to enclosure of CC-BY licensed works. This may inhibit development of sustainable open access initiatives by allowing for commercial works, and allows for derivatives that do not advance the vision of what open access is for, for example putting those who make their work open access in a position where they may not be able to benefit from derivatives based on their works. My perspective, argued in detail in chapter 3, is that the strongest CC license for open access is CC Attribution-Noncommercial-Sharealike as it requires open access downstream, and prevents commercial capture of open access works.

Another key emphasis in this dissertation, addressed in chapter two, points to a need for systemic analysis to overcome a strong society-wide trend toward irrational rationality, or as Weber would have expressed it, formal rationality combined with substantive irrationality. The actions of individuals and organizations that are perfectly rational when assessed at an individual level – the single goal of profit for the corporation, the budget cuts to university presses by universities struggling to manage in challenging financial circumstances, the gifting by authors of their life’s work to for-profit companies whose interests conflict with those of the authors, in order to secure tenure and promotion – add up to a system that makes no sense, university tenure and promotion committees demanding that scholars produce more monographs than makes sense from the perspective of good writing and sharing of knowledge, while at the same time cutting the budgets of the university presses that traditionally published these monographs.
In earlier chapters I note several examples of this kind of systemic analysis in practice. The *Dramatic Growth of Open Access* is a quarterly series, documenting in quantitative form at a macroeconomic level the growth of open access, discussed in chapter three. For example, the number of journals listed in the Directory of Open Access Journals (DOAJ) serves as a surrogate for the total numbers and growth of fully open access, peer-reviewed scholarly journals. Currently DOAJ lists more than 8,000 titles, and the title list has been growing fairly consistently at an average growth rate of 3-4 titles per day. The Directory of Open Access Repositories is used to track the number of repositories, currently more than 2,000 worldwide, and the Bielefeld Academic Search Engine provides a surrogate that is the best (albeit very rough) estimate of the extent of open access works in these repositories, currently more than 30 million items.

The *Dramatic Growth of Open Access* series is a combination research and advocacy tool, providing evidence of the extent and growth of the open access movement. This series has been instrumental in countering both deliberate and accidental misperceptions that open access is less successful than is in fact the case. For example, when OA advocates encounter an occasional journal that turns from open access to subscriptions, this can be discouraging, so it is useful to be aware that the net growth rate of the Directory of Open Access Journals is 3-4 titles per day.

The fifth chapter of this dissertation, focusing on economics, provides evidence of the potential for transition of the whole of scholarly publishing to an open access system at a much lower cost than the current system. The budgets of academic libraries are the major source of support for scholarly publishing and a key to the transition is a shift of this economic support from demand / purchase to supply / production. This chapter demonstrates that this transition is affordable without the excessively high profits of a select few scholarly publishers. A focus on efficiencies in the transition process, with average cost per article being a central metric, is recommended. A scholar-led publishing system using Open Journal Systems has been found to function with under $200 per article on average; if all of scholarly journal publishing was part of this system, the cost savings for academic libraries could be 96% of current spend. Current open access publishers using the article processing fee approach, including Hindawi and PLoS, have article processing fees that, if they were the average in an open access
environment, would result in substantial cost savings for academic libraries. On the other hand, shifting to production-side economics assuming current revenue for scholarly publishers or per-article costs far above the necessary costs for production, could increase costs over the current system and transfer an unfair share of the burden to the largest research libraries.

The interviews I conducted with scholarly monograph publishers, provides an illustration of the disconnected portions of the scholarly publishing system, working at cross-purposes. The steadily increasing profits of the large commercial STM journal publishers correlates with steadily decreasing sales of scholarly monograph publishers, jeopardizing the whole system of monograph publishing. Academic libraries and publishers, since the 1960’s, appear to have been playing a cat and mouse game rather than collaborating, an illustration of irrational rationality as the main players in the system, university presses and academic libraries, are both part of, and designed to serve, academia. Respondents to the surveys show a desire to work more collaboratively, as well as existing collaborations between libraries and publishers. In this sector, open access is rapidly emerging as a welcome alternative to the steadily decreasing dissemination of monographs under the purchase system.

Communication as a discipline is in better shape to transition to open access than many other disciplines, a topic covered in chapter seven, particularly those in science, technology and medicine (STM). Communication publishing has a healthy percentage of scholarly society publishers, over a hundred fully open access journals, and less concentration in the hands of the large for-profit commercial publishers than other fields. Communication scholars have much to offer the field of transitioning scholarly communication, in particular political economic analysis and arguments against the enclosure of knowledge.

From open access to freedom for scholarship in the Internet age: a blueprint for the open access movement

Open access to the scholarly literature, free of cost and free of most copyright, licensing and technical restrictions on re-use, is an essential enabler of freedom for scholarship in the Internet age. Throughout this dissertation I have argued that careful
transitioning economic support from subscriptions to open access is one of the keys to a successful transition from subscriptions / purchase to open access. A careful economic transition involves mindfulness of the current systemic dysfunction. It is not enough to pay the same high-profit commercial publishers for publishing services at rates designed to achieve the same net revenue for these publishers. Efficiencies are necessary, to provide for re-investment in the portions of the scholarly communication system that have been starved in recent years to feed these high-profit publishers, that is, humanities and social sciences publishing and scholarly monograph publishing, as well as carving out funds for new forms of scholarly communication such as data publishing and preservation. Chapter 5 highlights two key factors necessary for a cost-effective transition to open access, transitioning academic library budget support from subscriptions / purchase to supporting production for open access, and the per-article cost as a key metric of cost-effectiveness, with the per-article cost of a number of current open access initiatives less than the average per-article spend by academic libraries on a global basis for scholarly journals via subscriptions.

There are different ways to achieve open access, such as open access archiving, open access publishing, and developing and implementing policies requiring open access. My recommendation is that all of these strategies be pursued at once, to the extent that this is possible. Some strategies will be a better fit for any one local environment than others. The U.K. is home to an unusually large share of the large highly profitable publishers, such as Elsevier and Informa.plc (Taylor & Francis). Here, the scholarly publishing industry brings a net balance of trade. This makes more radical transformation likely to influence this industry more challenging than it is in other regions. Latin America has been a leader in open access publishing; here, as in most regions of the world, there are no local highly profitable publishers to fight this development.

Another reason for recommending a diverse set of strategies is that an open access scholarly publishing system with some redundancy is advisable to ensure the sustainability and preservation of the scholarly record. For example, as discussed earlier, a fully open access scholarly publishing system using the CC-BY license exclusively could be vulnerable to capture and re-enclosure by corporate interests. However, if every work published in this manner were also stored in both a disciplinary and an institutional repository for open access, this would greatly complicate the process
of capturing the works for enclosure for profit, hence decreasing the likelihood that this would happen. By means of illustration, consider this scenario: imagine that every article in the area of medicine is published using the CC-BY license, and also archived in PubMedCentral (PMC), a state supported open access archive. A wealthy capitalist could duplicate PMC and lobby to eliminate its state support, and at the same time use competitive measures to eliminate key publishers. In a neoliberal environment, a capitalist organization with sufficient means could succeed. Picture the same scenario with every article also self-archived by the author in an institutional repository (IRs). In this scenario, a capitalist success at eliminating PMC and competitors would likely be stymied by the existence of the works in the IRs – this would be obvious to any capitalist that had done their homework, hence making this strategy less likely to be pursued. Any single approach to open access is likely to feature vulnerabilities that would be mitigated to some extent by a multi-faceted approach.

As discussed above, the open access movement is every bit as vulnerable to irrational rationalization as the subscriptions / purchase model. More than that, significant change to the scholarly publishing system at a time when the trend towards irrational rationalization is as prevalent in our society as it is today, means that there is a risk that in the rush to move towards open access, even more elements of irrational rationalization than exist today may be introduced. It is important for the health of scholarship and scholarly communication into the future that this trend be understood, recognized when it appears, critiqued and challenged.

One example of what I argue is irrational rationalization at work in the open access movement is a trend towards looking for simple means of evaluation, categorization, and measurement of open access works and initiatives. One example previously discussed is the tendency to equate the ideal of open access with the Creative Commons – Attribution (CC-BY) only license. While the superficial resemblance makes this tendency easy to understand, even a quick reading of the legal code of the CC-BY license, which does not so much as mention open access, should be sufficient, in theory at least, to raise questions about the suitability of CC-BY as a support for open access. CC-BY allows for open dissemination of works using this license – but it does not forbid enclosure, is perfectly consistent with toll access, and can be used with works that are protected by technological protection measures (TPMs), which, combined with
other elements of intellectual property law such as anti-circumvention, may in effect void the rights made possible with CC-BY. Note that a downstream publisher cannot legally add such TPMs, but the original publisher can – and as the open access movement grows to include traditional publishers that are more enclosure-minded than present open access publishers, it seems reasonable to expect that some will look to loopholes such as this to create new forms of pseudo-open access. My recommendation is to avoid equating open access with CC-BY, but rather explore and support the full range of Creative Commons licenses, as well as encouraging other means of articulating what a commons might mean, and how to express this laudable desire to share our work.

Another area where I recommend that the open access movement carefully consider the potential for irrational rationalization causing unintended harmful consequences is efforts to assess quality in open access scholarly publishing. For example, the Directory of Open Access Books (DOAB) has been inquiring as to what forms of peer review might be considered acceptable for inclusion of an open access publishers’ works in the DOAB list, through a summer 2012 online discussion and survey. While the desire to ensure high quality, along with open access in scholarly publishing has considerable merit, a push to find an easy way to determine what constitutes appropriate procedures for evaluating quality risks introducing changes in how scholarly monographs are produced that may or may not be in the best interests of scholarship. For example, the whole emphasis on peer review per se downplays the importance of the experienced academic editor in monograph publishing, and fails to take into account that different disciplines and publishers have different means of ensuring quality in scholarship in monograph publishing. The consequences of shifting from a system with a strong component of academic editing to one of double blind peer review, in fields where this is not the tradition, is unknown. I would not assume, for example, that in a field where scholars have not traditionally been asked to take on book-length peer review, that scholars would have the time to take this on, or the patience or experience to do this work well.

Another area where caution is advisable is the push for altmetrics, that is, alternatives to the impact factor. Alternative metrics may be necessary, and can become very useful tools for research in their own right, however any kind of metrics of scholarship introduced into our current university system have a high likelihood of
introducing irrational rationalization. That is, the metrics developed as an alternative means of evaluating scholarship as a correction to the current system dysfunctions can easily introduce new (and possible worse) forms of dysfunction, just as impact factor, when originally introduced, was never designed to create or sustain the dysfunction we see at present. For example, altmetrics that aim to evaluate a scholar’s impact in social media could easily reflect and even amplify social biases. Before any particular altmetric is used to evaluate scholars, it would be wise to evaluate whether the measure tends to favor men over women, the extravert over the introvert, majorities over minorities, etc. Also, before we start evaluating scholars on their social media presence and impact, we should ask ourselves whether this is truly a characteristic of quality in scholarship. For example, shouldn’t the criteria for evaluating the contributions of a cancer researcher be whether they have advanced our knowledge of cancer, rather than whether they are inclined to tweet or post about what they find? If a brilliant researcher is not inclined to develop a public presence, should they be poorly evaluated and perhaps fired – or should we find means to help them to communicate their work more broadly? If the result of altmetrics research were the latter, then it would be an important contribution to scholarship. However, if it is the former (and the tendency of our society toward irrational rationalization very much suggest that this is the more likely option) then we are simply trading one form of dysfunction for another one that may be worse than impact factor.

Irrational rationalization is a society-wide trend; in the case of scholarly communication, the antidote that I am recommending is a systemic or holistic approach. Scholarly communication is part of a whole system of scholarship, which includes universities and funding agencies that provide the resources that make it possible for scholars to do their work (through salaries and research grants). Open access initiatives are best considered within this broader picture. For example, one difference between a commercial for-profit open access publisher and scholar-led publishing within the university or scholarly community is that the former system takes resources out of the university, while the latter retains or returns them to the university and/or various scholarly communities. One system returns profits to investors, while the other tends to return surpluses to meet the needs of scholars, such as through funding conferences, education or research grants.
Scholarship as a whole is just one element of human society, in itself a component of the ecosystem of our planet, one that is facing significant environmental change if not potential catastrophe. This most essential problem of humankind at the present time requires a complete reworking of how we think about our world and our society. Our whole society, globally, is based on a capitalist economic system that is predicated on endless growth, which is obviously impossible in a finite system. Our very survival into the future may depend on our replacing the current system with one predicated on balance and harmony with our environment.

One of the most fruitful potential avenues for theoretical exploration, from my perspective, begins with developing and refining the social theory of the media proposed by Enzensberger. I recommend focusing on the similarities between strong democracy and a potential decentralized socialism mediated by the new media. Open access to scholarly knowledge has a role to play in this new form of society, as it is one means of making education and hence participation in the scholarly conversation available to everyone, scholars everywhere and non-scholars alike.
References


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Appendix A: Open access journals by region and country

This appendix provides detailed breakdown of journals listed in the Directory of Open Access Journals by region and country, illustrating the global reach of the open access movement. As of January 2012, DOAJ lists more than 7,000 fully open access, scholarly peer-reviewed journals, published in 117 countries.

Open access journals by region

The following tables group open access journals by region, based on Wikipedia. The rank is the overall rank for all journals. A table listing all journals by rank follows.

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**Africa total** 244

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**Australasia total** 216

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**Caribbean total** 49

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**Central America Total** 39
Open access journals by country

The following table shows all countries listed in DOAJ country statistics ranked by number of journals.

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Appendix B: The Dramatic Growth of Open Access: Rationale & Method

The Dramatic Growth of Open Access (DGOA) is a quarterly series designed to capture at a macro level the best indications of growth of open access scholarly literature and related metrics (such as open access mandate policies). This Rationale & Method is designed for readers of DGOA. DGOA is available in open data editions (see the DGOA dataverse http://dvn.iq.harvard.edu/dvn/dv/dgoa). Summaries and commentary are posted on my scholarly blog, The Imaginary Journal of Poetic Economics, at: http://poeticeconomics.blogspot.com/2006/08/dramatic-growth-of-open-access-series.html

About the researcher

My approach to research holds that it is important for the reader to be aware of the perspective of the researcher, and so I disclose at the outset that I am an open access advocate, and that this Informal research project, in which I aim for the greatest accuracy possible, forms a part of my OA advocacy. I am a PhD candidate at the SFU School of Communication, where my research will focus on scholarly communication and open access. My work on the Dramatic Growth of Open Access began long before I thought of applying for the PhD program.

Rationale: seeing the forest and the opportunities

The need for a macro level approach to assessing the growth of open access is apparent from my perspective, for three major reasons. First, the strong growth of open access is important to understand because of its implications for the work of scholars and those who work with scholars, including librarians and publishers. The strong growth of DOAJ came as a pleasant shock to me about 2004, when I compared the number of titles in the DOAJ with the number of DOAJ titles in our local journal knowledgebase, CUFTS, and found that we were behind by several hundred titles in a short period of time. Even though I am a very optimistic open access advocate (from my perspective, OA is not only necessary, it is inevitable), I am constantly amazed at the breadth and depth of the OA movement and the growth in open access materials; this is why the series is named “Dramatic Growth”. It is about this time that I wrote the first iteration of this series, a peer-reviewed article for the Journal of Interlibrary Loan, Document Delivery & Electronic Reserve, designed to alert my librarian colleagues to the extent of the material already available, and the implications and opportunities this presented for our work (Morrison, 2006).

Second, the macro view of constant growth is important to counter misperceptions about open access growth. For the institutional repository manager with an IR that is indeed growing slowly, or not at all, it is very easy to miss the big picture, which now includes a global IR movement that it growing by the millions of items every quarter. When we focus on the details, it is easy to see the occasional OA setback (as when one title reverts from open access to toll access) as a sign of failure, when the macro level view at that very moment is that the world likely saw a net increase of open access journals, even on the very day that the setback occurred; the Directory of Open Access Journals (DOAJ) is adding an average of 4 titles per day; this is a net gain, after the DOAJ weeds all of the one-off setbacks for that year.

Finally, I am and always have been an optimistic open access advocate. Even when I first began this series in 2005, I foresaw that it would yield beautiful charts to illustrate the growth of OA, and indeed for several years now the data has been useful to create such charts to illustrate the dramatic growth of open access. Impressively though growth to date is, it is still the case that most of the world’s scholarly literature remains behind toll... my perspective, what this means is that there will be a need for this series for years to come. Others may see this not as dramatic growth, but rather as painfully slow growth of open access. Fair enough; the facts are as they are (elusive to capture though they may be), but when it comes to perspectives, there is no one viewpoint that is correct, and our world is richer when there are more ways of seeing things, rather than less.

Data collection
Most data is captured from the website of the initiative in question on the date of the issue of the DGOA in question. Data has also been provided by Peter Suber and Tim Gray (of Homerton College Library). PubMedCentral article data is captured using the search that can be found on the PMC free tab of the DGOA spreadsheet. Older data has been gathered from the Internet Archive’s The Wayback Machine.

Open access journals

The Directory of Open Access Journals (DOAJ) http://www.doaj.org has been selected as the best available surrogate for the total number of fully open access, peer-reviewed scholarly journals in the world. The DOAJ is a vetted list of fully open access, active, peer-reviewed journals. The DOAJ list is an imperfect measure of OA journals, as the vetting process tends to result in delay of inclusion of new titles, and the comprehensiveness of discovery of new titles is unknown. For example, it is not clear to me whether all Chinese open access journals (particularly those in Chinese languages) have been reported to DOAJ. The DOAJ title count does not include hybrid journals (although DOAJ search services do include hybrids), with some articles open access and others toll access, or journals that provide free back access. In summary, the DOAJ title count is used as a surrogate for the total number of open access journals, although DOAJ understates this number to an unknown extent.

The Highwire Free http://highwire.stanford.edu/lists/freeart.dtl collection and the Electronic Journals Library http://rzblx1.uni-regensburg.de/ezeit/index.phtml?bibid=AAAAA&colors=7&lang=en are more inclusive lists, that include journals with free back issues as well as fully open access journals. The Electronic Journals Library includes journals of interest academically that are not necessarily peer reviewed. Important as peer review is in an academic context, there have always been non-peer-reviewed sources included in academic libraries for good reason (consider magazines such as Wired or Adbusters, for example), and it is important to be aware that while peer review and open access are most compatible, the universe of quality free material is much larger than the OA peer review literature reflected in DOAJ.

Open J-Gate http://www.openj-gate.com/Search/QuickSearch.aspx is a search service for English-language open access journals, including both peer-reviewed and non-peer-reviewed journals, with separate title counts made available for peer-reviewed titles and total titles.

The PubMedCentral http://www.ncbi.nlm.nih.gov/pmc/ title list count is included as an interesting (to me) case study. While the NIH Public Access Policy http://publicaccess.nih.gov/ applies only to authors of NIH-funded authors, not journals at all, the number of journals voluntarily participating in PMC continues to grow.

Open Journal Systems http://pkp.sfu.ca/?q=ojs is included because this free, open source software is in use by more than 9,000 journals around the world, about half of which are fully open access. Including OJS in this series is a way of recognizing that this software has been instrumental in the dramatic growth of open access. Data is gathered by hand by Public Knowledge Project staff and/or research associates, and may be understated; as OJS is open source software, those using OJS have no obligation to report.

Open access archives (repositories) and articles

OpenDOAR http://www.opendoar.org/, as a vetted list of open access archives (repositories), is a standard for the number of archives (repositories). The Registry of Open Access Repositories (ROAR) http://roar.eprints.org/ is included since I began tracking this earlier, and it remains useful for comparison purposes. Both services provide access to a great deal of growth data and charts for repositories.

As a surrogate for the number of open access articles, I currently use the Bielefeld Academic Search Engine (BASE) http://base.ub.uni-bielefeld.de/en/index.php, and I have used Scientific Commons http://en.scientificcommons.org/ in the past, and may do so again in the future (Scientific Commons’ numbers are not being updated at the moment). Limitations of these services for this purpose are that the archives (repositories) searched include items with
metadata only, lacking fulltext; also, these archives contain a variety of materials, ranging from scholarly articles and theses to data to material that is less scholarly in nature; and the extent of overlap (duplication, for example if multiple authors each submit to their local repository) is unknown. In spite of these limitations, the sheer numbers, both in size (well over 28 million items) and growth (millions per quarter), are a strong indication that collectively these repositories are full of stuff, even if it isn’t absolutely clear what that stuff is.

Elusive as the total number of open access or freely available articles is, there are a number of indicators of strong growth in open access articles. In December 2010, I included Mendeley, as this is a popular service that appears to be growing quickly. Mendeley is an interesting service to study; while institutional repository managers gripe about the difficulty of recruiting content, researchers are flocking to services like Mendeley and voluntarily uploaded articles by the droves.

Several archives are tracked separately, illustrating the growth in open access articles available through OA archives. The total number for PubMedCentral (close to 2 million as of December 2010) is taken from ROAR, even though this number is an underestimate, for comparison purposes. PMC data is tracked in depth (see the third tab on the spreadsheet), in total and by NIH funding (for external and internal researchers and in total), and by time. This provides a very rough estimate of the success of the NIH Public Access policy, from a public viewpoint. In December 2010, I began to add some preliminary data for CIHR and Wellcome Trust, as small indicators of the value to all of expanding PMC internationally, as well as total OA articles in PMC.

arXiv http://arxiv.org/ and RePEc http://www.repec.org/ both represent relatively well-established, mature archives; E-LIS http://eprints.rclis.org/ is included as the major archive for LIS.

Open access policy

Data are taken from the Registry of Open Access Material Archiving Policies (ROARMAP) http://www.eprints.org/openaccess/policysignup/. ROARMAP relies on self-reporting, and so policy numbers may be understated; this is probably the case with theses open access mandate policies.

Open data

Open data (to scholarly research data, government data) is closely related to the open access movement, and also appears to be growing rapidly. The number of journal open data policies in the Open Access Directory is included as of December 2010. Other macro level metrics for open data is one area for possible future exploration.

Baseline growth of scholarly journals and articles

As reported by Ware (2006, p. 3), citing Mabe (2001), there are about 23,000 scholarly journals in the world, collectively publishing 1.4 million articles a year. The number of articles published each year and the number of journals have both grown steadily for over two centuries, by about 3% and 3.5% per year respectively. The reason is the equally persistent growth in the number of researchers, which has also grown at about 3% per year and now stands at around 5.5 million.

Data, commentary and review

Data is provided for downloading from the Dramatic Growth of Open Access Dataverse http://dvn.iq.harvard.edu/dvn/dv/dgoa (courtesy of Harvard), and previous issues were posted to Google docs for easy viewing. Each issue includes a full data edition and a show growth edition (generally illustrating growth over the previous quarter and year).

The spreadsheet for the full data edition includes 8 sub-sheets (tabs):

DGOA (Dramatic Growth of Open Access)
DGOA Notes (detailed notes to accompany DGOA)
PMC Free (PubMedCentral free)
Wayback Machine Data

PMC Individual Journals (occasional analysis of articles in selected biomedical journals)

PMC Individual Notes (accompanies PMC Individual Journals; also instructions for subscription-based publishers wishing to evaluate their authors’ compliance with NIH policy)

Journal Collection Comparison: occasional comparison of large journal collections (e.g. DOAJ, Highwire Free, Science Direct)

Article metasearch comparison (occasional comparison of large article search tools, e.g. Scientific Commons, Science Direct)

Commentary is posted to my blog, The Imaginary Journal of Poetic Economics; links to all issues of the series, and occasional between-series notes, is available here: http://poeticeconomics.blogspot.com/2006/08/dramatic-growth-of-open-access-series.html

The Dramatic Growth of Open Access series is not peer-reviewed in a traditional sense, except for the original article for Journal of Interlibrary Loan, Document Delivery & Electronic Reserve. However, this series is well read by many, including experts in the area of open access, who occasionally provide comments, corrections, and suggestions. Not peer review, but perhaps review by peers? This is of interest to me, as someone who sees scholarly communication as in a time of transformation. While I see traditional peer review and other forms of academic quality control as vital and not to be dismissed until better alternatives are found, I would suggest that the Informal research project that is The Dramatic Growth of Open Access is more valuable as an ongoing quarterly series than it would be if I had stopped with the one peer reviewed article. Peer review is indeed necessary and desirable, but if we relied solely on peer review, would we be basing our knowledge on data that is largely out of date in this rapidly changing area?

Final note

This is the fourth version of the rationale and method for The Dramatic Growth of Open Access (the first issue was Dec. 31, 2010, the second March 31, 2011, and the third June 30, 2012).

References & Bibliography


Appendix C: how many active, scholarly peer reviewed journals?

This is an exercise designed to calculate the number of active, scholarly peer reviewed journals as listed in Ulrich’s on December 1, 2011, and to estimate the total number of academic periodicals of all types, as these may be reflected in revenue estimates of scholarly publishers. Calculations are based on Ulrich’s Advanced Searches with the search terms listed, and a process to deduplicate titles (e.g. a journal with a print and an online version is listed twice), by adding together the number of print titles and electronic-only.

Questions and answers

How may active, academic / scholarly, peer reviewed journals?

26,746 (estimated). Based on Ulrich’s search for active, academic / scholarly, peer reviewed journals (total 53,097), deduplicated by adding up entries for print journals (under format = 23,442) and electronic-only 3,304

How many active, academic / scholarly periodicals (journals or other types)? 47,845. Calculations from the following table:
<table>
<thead>
<tr>
<th>Ulrich's search terms</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>active, academic / scholarly, peer-reviewed journals</td>
<td>26,746</td>
</tr>
<tr>
<td>Academic / scholarly, not journal</td>
<td></td>
</tr>
<tr>
<td>active, academic / scholarly magazine</td>
<td>994</td>
</tr>
<tr>
<td>active, academic / scholarly monograph series</td>
<td>18,152</td>
</tr>
<tr>
<td>active, academic / scholarly proceedings</td>
<td>1,146</td>
</tr>
<tr>
<td>active, academic / scholarly newsletter</td>
<td>807</td>
</tr>
<tr>
<td>Total academic / scholarly, not journal</td>
<td>21,099</td>
</tr>
<tr>
<td>Total active, academic / scholarly periodicals (journals and non-journals)</td>
<td>47,845</td>
</tr>
</tbody>
</table>
Appendix D: The changing economic and technical environment for scholarly monograph publishing: Method

10 telephone or skype interviews lasting from 30 minutes to one hour were conducted with people with substantial experience in scholarly monographs publishing. Potential participants were identified using a snowball approach beginning with people within the acquaintance of myself or my supervisor, Rick Gruneau, and invited via e-mail to participate in an interview. Contactees who responded to this e-mail request were invited to suggest additional potential participants, whether they themselves participated in an interview or not. Interviews were informal in nature, beginning with a few open-ended discussion designed to elicit the expertise of participants, with additional probe questions to request elaboration or clarification. Responses were recorded for one interview then subsequently transcribed by hand for the remainder of the interviews.

Consent and e-mail request (from ethics application)

Potential participants will first be approached via e-mail. Responding to the e-mail will be considered informed consent.
Permissions request e-mail
Subject line: Invitation to participate in interview research on scholarly monograph publishing
Study title: The changing economic and technical environment for scholarly monograph publishing 2011s0479

Dear X,

I am a PhD student at Simon Fraser University conducting interview research with professionals on the topic of scholarly monograph publishing, and would like to invite you to participate in an interview. The interviews are anticipated to be about half an hour to an hour in length, and will be conducted via phone or skype. The interviews are considered to be confidential from the researcher’s perspective, e.g. all comments to be included in potential publications will be anonymized. Please note that full confidentiality cannot be guaranteed as e-mail, phone and skype are not considered confidential media. The main benefit of participating in this research for you is an opportunity to influence how people think about scholarly monograph publishing. Please note as well that no permission has been sought from any employer / organization / association that you have been involved with for your participation in this interview. Data (transcripts and recordings of the interviews) will be stored on CD in a locked cabinet in the researcher’s
residence for a period of two years. If you have any concerns or questions about this research, please contact my senior supervisor, Rick Gruneau, 778-782-3857, gruneau@sfu.ca, or Dr. Hal Weinberg, Director, Office of Research Ethics at hal_weinberg@sfu.ca or 778-782-6593 (please quote study # 2011s0479).

If you are interested in participating in an interview, please reply to this e-mail and we’ll schedule an interview at your convenience.

Best,
Heather Morrison
Doctoral Candidate, Simon Fraser University School of Communication
hgmorris@sfu.ca
778-855-5156 (cell)

Interview protocol

The research approach involves asking a few open-ended questions. The preamble will be informal, inviting the participants to relax and speak informally, including a brief description of the project, reminding participants about the text of the “consent and email request” and letting participants know that any questions about research ethics can be directed to the research ethics office at SFU. Consent to proceed will be affirmed before beginning the actual interview.

Probe Questions

The following questions will form rough guidelines to help direct the conversation, if needed:

Please describe your involvement with scholarly publishing. What trends have you seen in recent decades?

In your experience, what changes have taken place in scholarly publishing in the following areas (if any)? What might be the significance of these changes (or lack thereof)?
  o Technology
  o Commercialization
  o Bureaucracy

Do you have any recommendations for improving the scholarly publishing system?
Is there something I should have asked, but didn’t?
Appendix E: Communication journals by impact factor (top 10)

JCR Year and Edition: 2008 Social Science

<table>
<thead>
<tr>
<th>Impact Factor</th>
<th>Abbreviated Journal Title</th>
<th>Publisher</th>
<th>ISSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.266</td>
<td>J COMMUN</td>
<td>International Communication Association</td>
<td>0021-9916</td>
</tr>
<tr>
<td>2.057</td>
<td>J HEALTH COMMUN</td>
<td>Taylor &amp; Francis</td>
<td>1081-0730</td>
</tr>
<tr>
<td>1.972</td>
<td>PUBLIC OPIN QUART</td>
<td>Oxford University Press</td>
<td>0033-362X</td>
</tr>
<tr>
<td>1.901</td>
<td>J COMPUT-MEDIAT COMM</td>
<td>International Communication Association</td>
<td>1083-6101</td>
</tr>
<tr>
<td>1.689</td>
<td>HUM COMMUN RES</td>
<td>International Communication Association</td>
<td>0360-3989</td>
</tr>
<tr>
<td>1.473</td>
<td>COMMUN RES</td>
<td>Sage</td>
<td>0093-6502</td>
</tr>
<tr>
<td>1.422</td>
<td>COMMUN THEOR</td>
<td>International Communication Association</td>
<td>1050-3293</td>
</tr>
<tr>
<td>1.359</td>
<td>INTERACT STUD</td>
<td>John Benjamins</td>
<td>1572-0373</td>
</tr>
<tr>
<td>1.295</td>
<td>CYBERPSYCHOL BEHAV</td>
<td>Mary Anne Liebert</td>
<td>1094-9313</td>
</tr>
</tbody>
</table>

Source: Journal Citation Reports, 2010.