

THE FLORIDA STATE UNIVERSITY  
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*“THE FUTURE IS OPEN” FOR COMPOSITION STUDIES: A NEW  
INTELLECTUAL PROPERTY MODEL IN THE DIGITAL AGE*

By

CHARLES LOWE

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The members of the committee approve the dissertation of Charles Lowe defended on May 25, 2006.

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John Fenstermaker  
Professor Directing Dissertation

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Ernest Rehder  
Outside Committee Member

---

Eric Walker  
Committee Member

---

Deborah Coxwell-Teague  
Committee Member

Approved:

---

Hunt Hawkins, Chair, Department of English

The Office of Graduate Studies has verified and approved the above named committee members.

This text is dedicated to Wendy Bishop, John Lovas, Candace Spigelman, and Richard Straub, four teachers and researchers in the field of composition studies with whom it was my pleasure to work. I only wish I could have the opportunity again.

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## ABSTRACT

*“The Future Is Open” for Composition Studies: A New Intellectual Property Model in the Digital Age* examines problems with the current intellectual property paradigm and focuses on the application of open source methods of knowledge production as the potential solution. Since the birth of copyright with the Statute of Anne in 1710, commercial interests have continually worked toward the enclosure of intellectual property. Despite the value to society of having a public commons of works which anyone may access and use, these companies champion romantic ideals of authorship as a means to privatize all intellectual property. This particular situation has accelerated as of late with the formation of large media conglomerates and other companies who own creative works of all types—music, scholarly articles, works of fiction, patents on new technologies and biological processes, etc.—and who vigorously protect and extend their ownership rights, including lobbying for and receiving recent legislation which solidifies their control even further: the Digital Millennium Copyright Act (1998) and Copyright Term Extension Act (1998).

As we move from a print-based culture to a society whose texts are mostly electronic, enclosure will continually cause negative effects on literacy, a stifling of technological innovation, a worsening crisis in academic publishing, a further encroachment of fair use rights, and self-censorship by creators of works. In response to such problems with intellectual property, significant grass roots movements have begun in the past twenty years centered around the idea of “openness”: open source software development, open access to scholarly publishing, and Creative Commons. Writing teachers will find that within the principles of openness these movements represent, they will recognize an ideology parallel to their own beliefs about sharing and social constructionist epistemology and come to understand that the Utopian dream of an open source idea economy is the antithesis of the dystopia imagined by content providers.

## INTRODUCTION

### *The Future Is Open*

In Spring 1999 while taking a graduate Computers and Composition course at Florida State University, I began to experiment with Linux, an open source operating system which can be installed on a PC (and more recently, Apple Mac's) as a replacement for Windows. The versions—or distributions—of Linux I worked with—Red Hat and Mandrake—were freely available for download off the Internet. Having been very recently exposed to research on the effects of access on literacy and the historical problems that education has had affording hardware and software, Linux seemed a promising potential solution for the classroom. Red Hat and Mandrake each came with word processing and other office productivity software, email clients, Internet browsers, and image manipulation tools with similar functionality to Adobe Photoshop.

The fact that Linux and other open source software is often free or low cost is indeed incentive for considering its use in education. For instance, in the years since, open source projects such as Sakai and Moodle have evolved as alternatives to WebCT and Blackboard. However, the more that I became involved in working with open source software, the more that I realized that open source offered an alternative perspective on intellectual property, one which centers on an important new ideology in today's information economy: "openness." Open source programmers believe in the importance of denying individual ownership in favor of group ownership, and sharing intellectual property as the most efficient and economical means for developing software applications. Unlike proprietary software vendors who sell binary versions of their programs in shrink-wrapped packages with End User License Agreements (EULA) specifying extremely limited use, open source generally involves a highly collaborative development process. Everyone who owns a piece of software is invited to work on the source

code themselves and contribute back improvements to the community. The openness of the code is guaranteed through the use of open source intellectual property licenses such as those listed with the Open Source Initiative. These licenses grant users the right to copy, modify, and redistribute the source code. Linux and many other open source projects make use of a special type of open source license: copyleft. Under non-copyleft types of open source licenses, an individual or corporate entity may take what has been given to the public commons, modify it, and copyright it without releasing it as open source again. Linux uses the Free Software Foundation's GNU General Public License (GPL), a copyleft license which guarantees the rights listed above along with one important restriction: that any redistribution must include the same license, thus guaranteeing that all future derivative versions are also licensed with the GPL.

Within the open source community, openness represents both a social constructionist epistemology centered on sharing and, equally important, a means of resisting what many see as an ever-worsening intellectual property crisis. By sharing texts or software with open source licenses, the pool of public commons materials can continue to grow as government and the content industries work to reduce it. In what Pamela Samuelson describes as the great "copyright grab," copyright legislation at the end of the twentieth century

- has largely benefited copyright owners at the expense of the public;
- has encouraged the software manufacturers and content industries—the recording and motion picture industries and print publishers—to work even harder to shift the balance toward ownership and away from the public's best interest;
- is part of the continuous enclosure of our public intellectual commons akin to the enclosure movement of the commons land in Britain from the fifteenth to the nineteenth centuries;
- will have long term, detrimental effects on the way that we construct and share knowledge.

Here in the U. S., the most recent changes originated during the mid 1990's with federal government initiatives to build and promote the Internet. As Cynthia Selfe explains in *Technology and Literacy in the Twenty-First Century: The Importance of Paying Attention*, the National Project to Expand Technological Literacy initiated by the Clinton Administration has not been the boon to digital literacy and access assumed by many educators; rather it should be



first viewed for what it is: the administration's agenda for creating the National Information Infrastructure (NII), an intricate telecommunication platform that includes the Internet we know today. Building the NII, Selfe explains, would require

- massive government funding to build the infrastructure and promote its development in the private sector;
- establishing and funding a technological literacy initiative that would prepare Americans to be manufacturers and consumers of computer goods;
- promoting a Global Information Infrastructure (GII) to create markets for the computer goods Americans would produce.

Most Americans—most educators included—believed that an educational technological literacy initiative coupled with the expenditures on developing the NII would be a worthwhile endeavor with great returns, one providing everyone in America equal technology access, a better education, and financial prosperity. Americans, who hold commonsense beliefs that associate technology and education with progress and democracy, were more than willing to follow this vision with little examination of the actual outcome. Selfe counters the government's ideologically based claims with ample evidence that the technological literacy initiative continues many existing social inequalities, perhaps even widening the gap between the have's and the have not's.

But there is another element of the plan to construct the NII—one not covered in Selfe's analysis of technological literacy—that is of equal, if not greater, importance and of concern here. The Clinton Administration understood that Americans would also need to be producers and consumers of the bits and bytes of texts flowing through the pathways of the information superhighway. In order to facilitate the traffic of electronic communication and multimedia on the Internet, building the NII would require not only a technological literacy initiative to prepare Americans to use and create electronic media and the hardware to support it, but also one additional component of the three pronged plan listed above: the revision of copyright. New technologies that provide cheaper, more efficient distribution and production of copyrighted works benefit copyright owners, but at the same time, these technologies have always increased the likelihood of copyright infringement. Since the Gutenberg Press, all new methods of creating and distributing copyrighted works—photography, radio, television, video tapes, etc.—have been

both a way for copyright owners to profit off of works and a point of concern for them which required revisiting copyright law. Even at its conception, copyright was created because the new printing technology of movable type provided easier copying and distribution of texts (Camp 79). In order to preserve a balance between the interests of copyright owners and the public, copyright would have to be revised to facilitate the use and transfer of electronic media online.

So while the Clinton Administration spearheaded extensive government funding of the infrastructure and the National Project to Expand Technological Literacy, they also worked with Congress and private industry to change copyright law. A 1995 report commissioned by the Clinton Administration, The Working Group on Intellectual Property Rights's "Intellectual Property and the National Information Infrastructure," is an obvious blueprint for the future copyright legislation of the 1990's. The report stresses that content is king for the NII—after all, an information super highway needs traffic—and that an effective "intellectual property regime must (1) ensure that users have access to the broadest feasible variety of works by (2) recognizing the legitimate rights and commercial expectations of persons and entities whose works are used in the NII environment" (Bruce 13).

Based upon the information in this report and the resulting legislation in 1998, it is obvious that the content industries saw the implementation of the NII as a prime opportunity to tip the copyright scales more in their favor. While the working group could have certainly arrived at a set of recommendations that would have balanced the interests of all concerned, it seems unlikely in retrospect given that Assistant Secretary of Commerce and Commissioner of Patents and Trademarks Bruce Lehman chaired the working group. As a former and now once again protectionist intellectual property lobbyist, Lehman was most likely to side with commercial interests. Not surprisingly, the rhetoric of this report demonstrates an explicit bias for increased protection of copyright holders' rights. "Commerce" takes priority:

Unless the framework for legitimate commerce is preserved and adequate protection for copyrighted works is ensured, the vast communication network will not reach its full potential as a true, global marketplace. (Bruce 16)

In another section of the report, while downplaying the proposed changes to copyright legislation that would serve only copyright owners, the report even goes so far as to champion content owners in the name of the public itself: "weakening copyright owners' rights in the NII is not in

the public interest; nor would a dramatic increase in their rights be justified” (Bruce 17).

More importantly, the working group perceived digital technology as dangerous to the harmony of the pre-digital copyright balance (Bruce 14). The administration and the content industries were concerned that because digital technology and the NII would allow for the easy distribution of content, it would likewise allow easy pirating of copyrighted works. Technology, in this instance, must be feared because “technology can be used to defeat any protection that technology can provide” (Bruce 230). Hackers had long been known for breaking software copy protection. In the case of digital technology, copyright owners, the recommendation report concludes, would likely want to use technological protection measures to prevent the unlawful access and reproduction of their work.

As a result of the recommendation report, the National Information Infrastructure Copyright Protection Act was introduced to Congress in 1995. A few composition scholars note that this act was promoting the interests of the copyright owners, more specifically the content industries. Janice Walker observes that

in *Harper and Rose v. Nation*, the Supreme Court stated that “By establishing a marketable right to the use of one’s expression, copyright supplies the economic incentive to create and disseminate ideas” (USPTO). These same interests are now at the forefront of developing new legislation, not to protect the rights of authors, but to protect the rights of publishing companies, recording industries, film companies, and others whose primary motive is financial. We, as educators and scholars, need to be proactive as laws and regulations are developed to address these new spaces. (205)

Andrea Lunsford and Susan West similarly urged educators to pay attention, to take an “interest in how laws governing ownership of language should be adjusted (if at all) to accommodate both new technologies and postmodern challenges to established ideas about ‘authorship’” (383). They rightly warn that “‘Mine!’ shall be the battle cry of the digital age, negating the extraordinary promise of the wide public access to information that the Clinton Administration has touted for the National/Global Information Infrastructure” (387). Similarly, Laura Gurak forecast that the proposed National Information Infrastructure Copyright Protection Act of 1995 “illustrates our shift away from the public and toward a corporate paradigm of

copyright and fair use”(333).

While the 1995 act was defeated, the battle over intellectual property legislation is far from over for, as scholar Pamela Samuelson warns,

The struggle for balance in intellectual property law is more like a tug-of-war in which the forces representing the strong protectionist positions are relentless in pursuing their interests, politically well connected, and able to mount well-funded public relations campaigns or lawsuits to accomplish their objectives. (“Never-Ending” 17)

The entertainment industry, publishers, and the software industry waited a couple of years until organized resistance to the 1995 act had resided and tried again. In 1998, President Clinton signed into law the Digital Millennium Copyright Act (DMCA) making unauthorized copyright protection circumvention devices illegal. Despite the fact that the recommendation report expressed that “existing copyright law needs only the fine tuning that technological advances necessitate, in order to maintain the balance of the law in the face of onrushing technology” (17), the content industries were determined to have their cake and eat it, too. Because organized resistance serving the public interests had already been overwhelmed, they introduced additional legislation unrelated to the needs of the NII. In 1998, those interested in greater protection for copyrighted works were successful in lobbying Congress to extend copyright terms. The Sonny Bono Copyright Term Extension Act of 1998 (CTEA) retroactively extended copyright terms to life of the author plus seventy years, and in the case of corporate produced texts, to ninety-five years. In the few years since the passing of the CTEA and the DMCA, the content industries have aggressively pursued active agendas for enforcing very protectionist interpretations of existing legislation and have continued to lobby for additional legislation. And legal battles within the courts have often supported their views on copyright. For example,

- *Eldred vs. Ashcroft*. In October of 2002, the U.S. Supreme Court upheld the right of Congress to retroactively apply the extended copyright terms of the CTEA to previously created works.
- *Recording Industry Association of America (RIAA) suits against file sharers*. The RIAA has been suing hundreds of users for trading copyrighted content. In April of 2003, the RIAA sued Michigan Tech student Joseph Nievelt, who ran a Peer-to-Peer

(P2P) search network on his campus, for the maximum amount allowed under the law: \$97.8 billion in damages (Dean “P2P Whipping Boy”).

- *Attempts to ban P2P.* The Inducing Infringement of Copyright Act introduced to Congress in the summer of 2002 sought to make illegal P2P file sharing by making illegal any software application or device which could “induce” someone to commit copyright infringement (Dean “Techies Blast”). This despite the the fact that P2P is a technology which has been shown to be useful beyond the illegal sharing of copyrighted works.

In each of these cases, representing the interests of the public is difficult. The content industries have deep pockets and can afford to lobby again and again for changes in legislation. Settling issues within the courts is difficult, too, for as TyAnna Herrington explains, “‘The public’ is hard pressed to find a representative plaintiff in a law suit”; the costs are often prohibitive (7). The RIAA subpoenas are a prime example.

For these reasons and others, new grassroots movements outside of software production have also embraced sharing through open source principles. Because of the continually escalating cost of academic journals and electronic database subscriptions from for-profit publishers, researchers within the biological and physical sciences have begun “open access” journals. In one open access organization, the Public Library of Science, thousands of researchers have pledged that they

will publish in, edit or review for, and personally subscribe to, only those scholarly and scientific journals that have agreed to grant unrestricted free distribution rights to any and all original research reports that they have published . . . within 6 months of their initial publication date. (“Read the Open Letter”)

Creative Commons, another publishing initiative outside of academics, provides a clearinghouse of “open content” licenses which enable authors and artists to grant usage rights to their novels, music, and artwork unavailable without the expressed permission of the copyright holder; notably, instead of “All Rights Reserved,” Creative Commons licensed texts carry the notice “Some Rights Reserved.” Authors and artists can choose from a variety of permissions to create a customized license with the particular set of rights they wish to allow users. And most teachers by now are familiar with Wikipedia, a free, web-based encyclopedia with over 1,000,00 articles

(as of March 2006) written in multiple languages, all published under an open source license. Wikipedia differs from traditional encyclopedias because it builds from the collaborative authorship of readers. Anyone who wishes may edit a Wikipedia entry or update it with new information from their Internet browser.

The principles of sharing, access, and collaboration found in these projects not only function as a counter-culture example to the existing intellectual property paradigm, but are also in sync with many of the principles held by composition teachers and can offer rich insight for expanding theory. Openness should therefore seem a likely topic of discussion for Composition and Rhetoric scholarship. A few researchers have noted these possibilities in their work. Bertram Bruce, in suggesting that open source has applications beyond software production, discusses how Eric Raymond's bazaar model of open source development can be applied to other types of intellectual property: "Through the bazaar called the Web, people who are geographically distributed can collaborate in making and distributing software, music, photographs, video, artwork, texts, and ideas without any central collaboration" (767). Interested in positioning student run ejournals as an effective introduction to academic writing, Nick Carbone sees copyleft as the means "to create copyright and plagiarism free zones" when students publish their work online ("Diving into the Text" 244). And in advocating copyleft as a method of scholarly publication, Michael Day suggests that "many of the new electronic scholars," those researchers used to discussing their scholarship via computer networks, "are willing to share ideas freely, so ownership is not so important" (262).

Other works have engaged openness more directly. In "Open Source Basics: Definitions, Models, and Questions," Johndan Johnson-Eilola "provide[s] a basic overview of issues related to the use of open source models for development and distribution of computer documentation" (1). In "Sites of Resistance: Weblogs and Creative Commons Licenses," Clancy Ratliff argues that "the use of Creative Commons licenses in blogging practices [is] contributing to the realization of the Web as an intellectual commons" (2). Brenton Faber proposes "an educational model derived from open source methods for computer programming." And Laurie Taylor and Brendan Riley's "Open Source and Academia" examines the open source development process and suggests how the underlying principles might enhance the academic publishing model and writing pedagogy. My text, "Copyright, Access and Digital Texts" is a much smaller predecessor

of this work, an examination of the current state of intellectual property which reasons why writing teachers should be using Creative Commons licenses.

Within the mainstream print journal intellectual property discourse which engages in the copyfight, there's been little discussion from major intellectual property experts of open source and open content principles. TyAnna K. Herrington, Laura Gurak, Susan West, Lisa Ede, and Andrea Lunsford—building off of ideas in works such as Michel Foucault's "What Is an Author" and Martha Woodmansee's 1984 *College English* article, "The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'"—were the main critique in the 1990's of constructions of authorship in legal conceptions of intellectual property and warned of the dangers of the 1995 NII Copyright Protection Act (e.g. Herrington; Gurak; Lunsford). Yet, while this discourse strongly urges educators to become more involved as critics and activists, openness receives only passing mention through short references to copyleft (e.g. Lunsford 269).

Why has openness so far been mostly neglected in the field of Composition and Rhetoric? Most likely because until recently, open source has been publicly viewed as the domain of hackers, a fringe movement which has gained recognition as an effective software developmental model only in the last few years; indeed, some in the information technology industry, thanks largely to the success of Linux, now see open source as more effective for creating software than proprietary, closed source production models. The concepts of open access and open content are themselves also fairly new. The open access movement, for example, has gained most of its momentum since the Public Library of Science initiative began in September 2001. Similarly, the latest developments in intellectual property which shape a more gloomy prediction for access to digital texts come from intellectual property studies, an interdisciplinary field which has yet to bridge the gap into the mainstream discourse of composition and rhetoric studies.

Then there is our society's affinity for Lockean notions of ideas as property, a perspective on copyright supported and promoted by the content industries in order to maintain and further develop monopolies over creative works for the purpose of financial gain. It serves the best interest of publishers to perpetuate the natural rights of authors based on original thought, despite postmodern critiques of authorship and intertextuality. Thinking about openness requires that educators overcome an acculturation which inhibits seeing the value of collaboration and the potentiality of an intellectual property model not based upon ownership and control. This is the

reason why Taylor and Riley’s “Open Source and Academia” was not originally published under a Creative Commons license, even though their article encourages academics to learn “from Open Source publishing models” and suggests publishing under an open content license. Riley notes that not applying an open content license was part of “ingrained habits.” Until Creative Commons, authors had little choice. The standard “All Rights Reserved” is automatically implied once a work is fixed in a medium. In terms of publishing, academics are used to turning over ownership rights to another—the publisher. Learning to make choices to share intellectual property and always making that choice goes against a lifetime of accepting the default.

I feel, then, that this dissertation can significantly contribute to the field. There is much room to expand on writing teachers’ understanding of the current state of intellectual property, one that can provide more insight into the long term effects on literacy and access caused by government legislation and regulations; new practices of the publishing, software, and entertainment industries; and public perceptions of copyright. In this text, I want to encourage writing teachers to see intellectual property as coupled with writing and technology, and to consider digital copyright in light of Traci Gardner’s advice:

Access to technology is not the liberating or empowering thing that we expect it to be. As composition teachers, deciding whether or not to use technology in our classes is simply not the point—we have to pay attention to technology. When we fail to do so, we share in the responsibility for sustaining and reproducing an unfair system that . . . enacts social violence and ensures continuing illiteracy under the aegis of education. (qtd. in Selfe xiv)

Thanks to the Clinton Administration’s mission of creating the NII, promoting the GII, and building a technological literacy initiative, the Internet of today is a thriving multitude of voices, a space where anyone with computer access can easily self-publish (such as on a weblog) and the distribution cost of an electronic text is a mere fraction of the cost of distributing the same text in print. Given the low cost and ease of publishing, educators now should be concerned about who has access to knowledge and who has the right to publish with the same regard they give concerns about access to the technology itself. Consider the effects on contemporary writing instruction. Visual rhetoric and multimedia composing are becoming more ubiquitous—even required—elements of first year composition curricula. Students are often encouraged to use and



trained in the use of advanced multimedia tools for web authoring, image editing, and video composition such as Macromedia Dreamweaver, Adobe Photoshop, and iMovie. Scholars have greatly discussed the integration of multimedia literacies and electronic communication into writing instruction. Yet—to borrow Selfe’s definition of technological literacy—are teachers of digital technology aware of the “complex set of socially and culturally situated values, practices, and skills involved in operating linguistically within the context of electronic environments, including reading, writing, and communicating” (Selfe 11) when it comes to intellectual property? Are teachers themselves making choices about how others may use their classroom materials when publishing to the web, or simply choosing “All Rights Reserved” as the default they have been acculturated to accept? Are they considering the benefits of collaborative, community driven projects such as Wikipedia and imagining how similarly constructed projects might benefit the field or society at large? How might our academic publishing model be better informed by open source and open access principles?

In order to support teachers in answering such question for themselves, the following chapters will promote a better understanding of open source and open access and provide some suggestions for how open source can inform pedagogy and the academic publishing model. I hope that by the end of this text, openness will provide a perspective through which writing teachers will come to see more of what is at stake with continuing to follow Romantic notions of intellectual property, and that they will realize the potential of openness not only to counter those who would make the Internet a pay-per-view, pay-per-use place, but as a social constructionist emphasis on the importance of collaboration in the construction of knowledge. Finally, by learning more about open source and Creative Commons licenses, writing teachers will find that they, too, can be open source, open content, and open access advocates by choosing to license their work.

## CHAPTER 1

### WHAT RIGHT TO READ?: DRM AND THE DMCA

A rational copyright policy does not seek to merely add more exclusive rights, then—rather, it seeks to add *just enough* exclusive right so as to maximize the incentive to create \*and no more.\* (“Digital Rights Management: A Failure”)

When it comes to comparing print and electronic media, many book lovers will undoubtedly say, “there’s nothing like the feeling of a book in the hands; a computer can’t replace that.” To that, I would add that there comes great pleasure from sharing a book, such as loaning or giving a book to a friend or even donating one to a library. Consider also the practice of bookcrossing in which a person leaves “a book in a public place to be picked up and read by others, who then do likewise” (qtd. in BookCrossing). All of these pleasures of sharing are guaranteed under the first sale doctrine, the segment of copyright law which specifies that copyright owners have control only over the first sale of a print work, leaving users many rights over the copy which they acquire. The first sale doctrine allows someone who has purchased or legally obtained a copy of a work “to sell it to a book store or give it away to a friend” (Ou 90). Indeed, academic libraries depend on the first sale doctrine—along with fair use—in order to operate (Ou 90-91). Without them, libraries would be unable to lend texts to their patrons. If for no other reason, this stresses why the first sale doctrine is important for granting widespread access to the knowledge of our culture.

What about in the future? Skip forward to the middle of the twenty-first century. Imagine a society in which texts are predominantly electronic and many users’ rights normally associated with texts have been negated by law. Richard Stallman wrote “The Right to Read” about such a futuristic world in which fictional college student Dan Halbert is faced with a difficult decision. Dan’s friend, Lissa Lenz, asks to borrow his computer because hers had broken. She tells him

that she only needs to prepare for her midterm project, but Dan fears she might access and use his electronic books. For Dan it is an ethical, moral, and legal dilemma. In this society of 2047, sharing a textbook is grounds for expulsion from school and a criminal offense. Even worse from the perspective of a late twentieth/early twenty-first century English teacher, Dan has been acculturated to believe that the sharing of books is wrong. For those writing teachers who read Stallman's story, Dan's discomfort with doing so will be disturbing to those who appreciate the value of book sharing.

Less than a decade ago in 1997 when this story was published in the *Communications of the ACM*, it would have sounded like implausible, impossible science fiction to most educators. That is, except to those few who were aware of and understood the long term consequences of proposed intellectual property legislation. While expectations might seem otherwise, there has never been a legal "right to read." Lawrence Lessig explains,

If a copyright owner now tried to control how many times I could read a book online, the natural response would be to argue that this is a violation of my fair use rights. But there has never been any litigation about whether I have a fair use right to read, because before the Internet, reading did not trigger the application of copyright law and hence the need for a fair use defense. The right to read was effectively protected before because reading was not regulated. (*Free Culture* 145).

Those educators who understood and gave credence to Stallman's prediction back in 1997 were familiar with the Clinton Administration's "Intellectual Property and the National Information Infrastructure" white paper and the subsequent Congressional work on the 1995 National Information Infrastructure (NII) Copyright Protection Act, legislation which would prevent the uncodified right to read. As Pamela Samuelson warns in January of 1996

Browsing through a borrowed book, lending a magazine to a friend, copying a news article for your files—all seem innocuous enough. But the Clinton administration plans to make such activities illegal for works distributed via digital networks. If legislation recommended in its white paper "Intellectual Property and the National Information Infrastructure" is enacted, your traditional user rights to browse, share, or make private noncommercial copies of

copyrighted works will be rescinded. Not only that, your online service provider will be forced to snoop through your files, ready to cut you off and turn you in if it finds any unlicensed material there. (“The Copyright Grab”)

Regardless of whether or not the Clinton administration and lobbyists for the content industries were to be successful in their plan for legislation to support the NII, fair use and the first sale doctrine were still in danger. As explained by Lessig above, the right to read has never been challenged, that is, until digital texts. The notion of copyright is complicated on a computer since computers copy a text multiple times in the process of making the text available to a computer user. Play music from a CD on a computer, and the song has to be copied into memory on the machine before the central processing unit can convert it into music. Download an Adobe PDF file off of the Internet or view a web page, and the file is copied into memory and then onto the computer’s hard drive. Then it must be copied again into memory in order to display the contents of the file on the screen. Printing also requires the making of multiple copies. Thus, there are no longer first sale doctrine rights in the U. S. on digital texts which we view or use with a computer.

The absence of first sale doctrine rights means that authors can have complete control of how we make use of digital texts using technology. The passing of the Digital Millennium Copyright Act by Congress in 1998, the first significant copyright legislation regarding digital texts, helps to enforce this control by affording copyright owners additional legal safeguards to protect this interpretation:

- The DMCA makes it a crime to circumvent technological protection measures (TPM) used to prevent copyright infringement, and it makes illegal the production or distribution of devices designed to circumvent TPM’s.
- The DMCA protects Internet service providers (ISP) from liability when their users engage in piracy, and it also allows content providers to subpoena ISP’s for the personal identity of users suspected of piracy and requires the ISP’s to remove any infringing content from their servers.

The DMCA, then, provides the legislative mechanism for creating the type of future that Samuelson and Stallman describe. The next question is whether or not our society will become one where most texts are digital. That depends upon consumers and producers. Digital texts offer

multiple advantages over printed text which make them not only attractive to most consumers, but also financially lucrative to content publishers:

- *Lower production and distribution costs.* For example, the content industries can provide downloadable ebook versions of texts or MP3 music files at a reduced cost, yet with a larger profit margin for themselves. Consider the cost of printing, medium, and ink for one thousand print books in comparison to the cost of one thousand ebooks. Electronic texts do not require a physical printing process, a physical medium (such as paper), or ink. The cost of distributing one or one thousand ebooks is nearly the same and quite likely cheaper than distributing one physical version of the same text, regardless of whether those one thousand ebooks travel halfway around the globe or only two miles away via the Internet. Distance is no longer a cost factor in distribution. With online distribution, publishers and record labels can even sell directly to customers, eliminating the cost of the middleman, the bookstore, or music store.
- *Elimination of used media trade.* Booksellers who deal in used texts serve a useful role to our society as providers of out-of-print works. They also make the ownership of books more accessible to others because of the reduced cost of non-rare books. Publishers would prefer to eliminate the used book trade. Used book sales provide no profit to the original publisher, and a reduced availability of used texts increases the likelihood that someone would purchase a new book. Imagine the financial gain for textbook publishers if the used book trade for textbooks were eliminated on college campuses.
- *Increased access for users through pay-per-use and subscription-based services.* Content providers can offer subscription-based or pay-per-use access to users for individual works or their entire collection. In the case of academic journals, electronic databases are searchable, indexed archives which make texts instantaneously accessible, a more efficient service for researchers than the print-based archives libraries provide. Services like Napster and iTunes are providing music on demand at a lower price than is available in stores, albeit with a much higher return to content owners. There is little doubt that content publishers see the financial benefit of this,

for as James Hilton points out, many copyright owners feel that “if access to information, even tiny bits of information (e.g., a few paragraphs from an article), can be provided for a small fee, the argument goes, why shouldn’t the copyright owner profit from that access?” (“Copyright Assumptions” 52).

To date, digital distribution has been successful in certain instances. The *New York Post* notes that the *Wall Street Journal*’s online service has already become more profitable than their traditional media:

Earnings plunged by 54 percent at the newspaper’s parent Dow Jones & Co., with its fledgling online operations earning more money for the first time than the flagship Journal and the weekly Barron’s. (qtd. in Lowe “Evidence”)

The switch in revenue stream from print to online media at Dow Jones & Co. also represents a shift toward physical media becoming less profitable as more users gravitate to digital texts. For example,

- Newspaper circulation is steadily falling (Sutel).
- Book sales dropped in 2005 (Smith).
- Digital music sales increase as sales of physical music media decline in 2004-2005 (“Digital Sales Triple”).
- Radio listening drops while listening to digital music increases during 2005 (“Digital Listening”).

What is also interesting about the *Wall Street Journal* model is that it is subscription-based; in other words, it does not need additional protection but is working well using copyright protection methods that existed prior to the DMCA. Even though copyright owners obviously feel otherwise, do content owners need the additional legal protection for their digital works afforded by the DMCA? Peter Chernin of NewsCorp states that “without the adequate protections for intellectual property, content providers and legitimate content distributors will find themselves vulnerable to theft by anyone who owns or has access to a computer with a broadband connection to the Internet” (Fowler 29). That of course depends on how successfully copyright owners protect their digital content since hackers will continue to circumvent unsecure protection technology. Chernin seems to assume that most users will merely pirate content rather than pay for it, that a large percentage of those who pirate would have paid for the content in the

first place, and that use of pirated content would not in fact contribute to the sale of legally acquired content. A lot of assumptions considering, as Mike Godwin sarcastically points out in “The New Legal Panic over Copyright,” that

the general trend, at the end of the 1980s and the beginning of the 1990’s, was for software to be relatively unencumbered by copyright protection, if not outright unprotected. Now, as we know, Microsoft since the 1980’s has utterly collapsed in the absence of strong copyright protection. The company has gone down the economic drain, and they have our sympathy. (179)

It is also likely that society benefited from fear of piracy when it came to software production in the 1980’s and 1990’s. While copyright as a form of protection for authors’ rights is intended as an incentive to encourage innovation and creation, the piracy of software may be doing so as well. As hackers break copy protection schemes for software, software companies produce newer versions with updated and additional features—encouraging users to upgrade instead of obtaining or using an illegal copy—and newer copyright protection—meaning that the copyright protection had not been broken; those wanting the new software have to purchase it. While this is not an excuse for software piracy, this free market approach does stimulate innovation than might not happen with legislated protection.

### ***Locking Up the Content***

In order to take advantage of the DMCA, copyright owners are developing technological protection measures which have become more recently known as digital rights management (DRM) systems. In the Association of American Publishers’ “Digital Rights Management for Ebooks: Publisher Requirements,” DRM is defined as “a set of technologies and approaches that establish a foundation of trust that enables digital content commerce” (9). This is a particularly revealing definition because it does not specify what consumers need or want—or, for that matter, what their rights are—but makes clear that the point of DRM is to allow content owners to “trust” the recipient of the digital text. Only trust is a very mild choice of words here, because digital rights management allows the content owner to *control* in what ways someone can use a text: “Digital rights management, as usually described, is in reality something of a misnomer.

The technology that is commonly proposed as comprising ‘DRM’ is, in reality, primarily about digital access permissions enforcement” (Bide 105).

Certainly, it makes sense for copyright owners to want to protect their intellectual property. DRM can discourage piracy. DRM can guarantee the quality and accuracy of the work, a digital certificate of sorts for determining authenticity. But when coupled with the DMCA, the few benefits for copyright owners are outweighed by the detriments for everyone else. In a letter to the United States Patent and Trademark Office, John C. Vaughn, Executive Vice President of the Association of American Universities, protests that TPM’s

have the potential to alter the delicate balance of rights in the digital environment. While fair use is “technologically neutral” and is applied and evaluated by courts on a case-by-case basis under an equitable “rule of reason” standard . . . TPMs apply (mostly) to digital technology and can be implemented at the sole discretion of copyright owners. Further, TPMs typically work without regard for the lawfulness of the use that is being presented. Encryption-based TPMs can prevent lawful, fair use of lawfully acquired copies as easily as they prevent infringing users. (4)

DRM can prohibit the rightful printing and archiving of a copy of a legally obtained text. Since DRM itself does not differentiate between public domain and copyrighted texts, it can “easily prevent the copying and distribution of public-domain works” (Saumelson “DRM {and, or, vs.} the Law” 42). Basic computer literacy functions such as copy and paste can be prevented by DRM even if the amount copied is within fair use. Computer searches of electronic texts, a feature particularly useful to scholars and within their fair use rights, can be prohibited by DRM (Appel and Felten 21). Despite DRM’s ability to prevent these uses, scholars, teachers, and other content users do not need the permission of content providers to exercise their fair use rights. The U.S. Supreme Court has made clear on multiple occasions “that authorization is not required to make fair use of a copyrighted work” (Gross “Copyright Zealotry” 190). However, the problem for consumers of DRM-protected content is that Title 17 makes clear that the DMCA makes it illegal to take advantage of fair use rights: “No person shall circumvent a technological measure that effectively controls access to a work protected under this title.” Fair use guidelines are not a justification for circumvention. For that matter, the DMCA does not allow copyright protection



circumvention even when there is no copyright infringement (Godwin 180). In the long term, once a work enters the public domain, it is still illegal to crack the DRM and release copies of the work (Harper 26). Even the original author of a work could be prosecuted under the DMCA if she breaks the copyright protection scheme used with the text by her publisher.

Suppose that copyright owners did want to allow fair use rights with DRM-protected texts. DRM cannot easily allow for fair use without making a digital work more prone to copyright infringement, the one thing DRM is designed not to do. DRM can also not easily discriminate between commercial and noncommercial uses where a owner might want to allow different pricing schemes because DRM cannot ensure that “the actual use of the content conforms to the claimed use” (Rosenblatt et al.)—for example, use of a commercial image in a magazine ad versus use of the same image in a PowerPoint presentation (76). A theoretical solution is tracking the particular use case via software, but very impractical to implement. Edward Felten explains that it is impossible with today’s current artificial intelligence technology to create a computer system that can both understand the circumstances of fair use and apply the “four-factor fair use test” (“A Skeptical View”), a position supported by others (Erickson 38; Bide 104). Determining use requires a human being because fair use stipulations “are guidelines, not specific rules” (Einhorn and Rosenblatt 7).

### **File Formats Are Technological Protection Measures?**

Every writing teacher has experienced the headaches of file format compatibility. Students have problems trading files with each other for peer review. Teachers cannot open files sent by students. Particularly this is a problem in a Microsoft Office dominated world for those educators who use WordPerfect and other non-Microsoft productivity software, making it more difficult for educators to share files and collaborate in their writing. File compatibility issues are not restricted to sharing documents between Microsoft and non-Microsoft applications. Over the years, I have seen numerous complaints from Microsoft users about file compatibility problems with Office 97 on Windows and between Microsoft Works and Microsoft Office, as well as trouble converting files back and forth between Word for Windows and Word for the Mac.

Recently, Microsoft has filed patent applications in the European Union and New Zealand for their new XML schema for documents, the basis for the next generation of word processing, spreadsheet, and other office productivity file formats. Despite Microsoft’s claims to the

contrary, critics worry that the patents would allow Microsoft to prevent competitors from converting Office documents over to other formats, reinforcing their monopoly of the office productivity suite market (Foley). While it is easy to pick on Microsoft for their aggressive business practices concerning file formats, Microsoft is not the first or only company to do so. File formats have historically “been used to avoid free market competition, making it harder for customers to switch to newer and better products, or to place restrictions on how people use programs or the information produced within them” (Fioretti 3).

In the U.S., Microsoft need not acquire a patent to protect file formats. Software manufacturers and publishers are claiming that file formats are technological protection measures under the DMCA. For example, Internet technology company Streambox recognized that users wanted to store and convert streaming audio and video files provided by RealNetworks, the producer of one of the main streaming media formats used on the Internet. Streambox created

- Streambox VCR, a device for recording RealNetworks streaming media
- Ferret, a plugin for RealPlayer which would allow a user to search the Streambox network via RealPlayer
- Ripper, for converting RealNetworks media to other audio formats such as mp3 and wav.

When RealNetworks discovered that Streambox was marketing these technologies, RealNetworks sued Streambox under the DMCA arguing that RealNetwork’s proprietary file format used for streaming media is a copyright protection measure (Harper 26). A U. S. District Court placed an injunction against distributing the Streambox VCR and the Ferret. Judge Marsha Pechman ruled that the Streambox VCR illegally circumvented “the access control and copyright protection measures that RealNetworks affords copyright owners” (qtd. in Hu).

DVD’s make use of Content Scrambling System (CSS), an encryption system which guarantees that only software applications which have licensed CSS from the Motion Picture Association of America (MPAA) can play back DVD’s, a file format protection scheme which has already resulted in various lawsuits. In one famous case, Dimitry Sklyarov, a Russian programmer who had developed a method for decrypting Adobe ebooks so they could be read with other applications, was arrested under the DMCA for criminal prosecution upon a visit to the United States (Clark 150). In another instance, since CSS was unavailable for Linux video

players, fifteen-year-old Norwegian Jon Johansen created a decryption algorithm, DeCSS, so that he could play his DVD's on his Linux-based computer. He then decided to share the decryption technique by posting the algorithm to his website for other Linux users (Zanger ). As a consequence, in *Universal Studios vs Reimerdes*, the entertainment industries sued an online magazine which had posted a copy of the software and links to other sites hosting the software (Clark 150).

In the long run, examples such as these demonstrate that the DMCA is likely to encourage use of proprietary formats as the means to entrench a business position. Businesses could instead be adopting open standards for file formats such as the Organization for the Advancement of Structured Information Standards' (OASIS) OpenDocument for office productivity documents ("OASIS Open Document"). While overall both producers and consumers benefit from open standards, some businesses prefer closed standards because they hope to build a monopoly (Rosenblatt et al. 103). Over time, open standards are also important because use of proprietary file formats can eventually result in obsolete files, unreadable by contemporary technology, "break[ing] the chain necessary to preserve creative works" (Bricklin). The DMCA does permit "a library or archive to copy a work into a new format if the original format becomes obsolete—that is, the machine or device used to render the work perceptible is no longer manufactured or is no longer reasonably available in the commercial marketplace" (United States Copyright Office "The Digital Millennium" 15). But an educator who legally owns a digital copy of a work and finds that the means to access that file format is no longer available, is not permitted themselves to translate the file to a new format. By limiting the right to convert obsolete formats to libraries only, the DMCA is inhibiting scholars in their research. Also, as Linda Beebe and Barbara Meyers note, preservation of digital texts is fraught with more problems than print media. In order to preserve this knowledge, society needs to facilitate the role that researchers such as textual scholars can play in preserving and guaranteeing access to works otherwise lost in archaic file formats.

### **Free Speech and Academic Research**

In 2003, thousands of internal emails from Diebold Election Systems were leaked onto the Internet containing discussions by Diebold employees about "flaws in the company's software and warnings that the computer network was poorly protected from hackers" (Boynton

“Tyranny of Copyright”). In what has been described as a large civil disobedience campaign, *Why War?*, a student-run activist website hosted at Swarthmore College, mirrored thousands of the memos. A member of *Why War?* explains, “These memos indicate that Diebold, which counts the votes in 37 states, knowingly created an electronic system which allows anyone with access to the machines to add and delete votes without detection” (“Diebold Targeted”). Not long after, Swarthmore College received a cease and desist order. Diebold used the DMCA to demand that Swarthmore remove the memos from the college’s server. Swarthmore initially complied.

While the students fought for and eventually won their right with the university to post the memos, this case is a sobering reminder that “thanks to the Digital Millennium Copyright Act, their speech could be silenced without the benefit of actual lawsuits, public hearings, judges or other niceties of due process” (Boynton). Previous to the DMCA when a copyright owner found that someone had posted copyright infringing works on a website, a copyright owner would need a judge to issue an injunction to have the ISP remove the infringing content. With DRM under the DMCA, “the rights of the owner have finally become fully enacted prior to any litigation against infringers” (May). A copyright owner need no longer follow jurisprudence. They need only contact the ISP directly. If the ISP fails to remove the offending content, the ISP can be found guilty as a co-infringer (Pfaffenberger). Bryan Pfaffenberger explains, “Under such circumstances, ISPs will of course remove the material, even if they believe it does not infringe on anyone’s copyright; who would want to take such a risk?”

This is not the only instance where, in the words of one of the students from Swarthmore, corporations are “using copyright law as a means of suppressing information that needs to be public [ . . . ] It’s a great example of how copyright law can be against the public good rather than for it, as it was originally intended” (Zetter). The absence of first sale makes it possible for content owners to use the DMCA for censorship (Besser “Recent Changes to Copyright”). For instance, on 11 March 2000, Matthew Skala and Eddy Jansson released cphack on the web, an open source program that would reverse the encrypted black list of Cyber Patrol, a website filtering program designed to prevent access to offensive content. Along with the cracking program, Skala and Jansson also publicly published a review of Cyber Patrol containing a description of their methods: “The Breaking of Cyber Patrol 4.”

Even though Skala and Jansson are not Americans, Microsystems Software Inc. and

parent company Mattel filed a federal suit against them under the DMCA claiming “irreparable harm” to the effectiveness of their product now that the encryption had been publicized (McCullagh “Mattel Sues”). The initial news of the suit sparked a lot of discussion on the web and the creation of mirror sites. Mattel contacted many of the sites—such as the well known Politech mailing list—asking for the identity of list members, eventually charging anyone with links to cphack to cease and desist (McCullagh “Mattel Sends”). George Harper suggests that “cphack’s programmers arguably made a fair use of CyberPatrol to reverse-engineer cphack, and fair use is an affirmative defense to any allegation of infringement” (“Copyright: Endurance & Change” 25). However, Mattel’s interest in silencing the authors was more likely due to their criticism of Cyber Patrol more so than cphack itself (Dawson). While the hackers found Cyber Patrol to be “technically somewhat better” than the other two most popular censorware programs—NetNanny and CyberSitter—they also discovered many of the blacklisted sites to be questionable choices (Dawson).

Ironically, if I include a link to “The Breaking of Cyber Patrol 4” or the cphack algorithm in the bibliography of this dissertation, I, too, could be subjected to a cease and desist notice and, possibly, a judgment of infringement by the court. These cases illustrate a climate of corporate bullying. Companies now feel emboldened to prevent anyone from posting controversial materials online thanks to the easy threat which the DMCA provides. Such companies often include those who should be friendly to education. For instance, Blackboard legally blocked two university students from presenting their findings regarding security flaws in a debit card system owned by Blackboard and used by many universities. While the judge’s restraining order was based on anti-hacking and trade secret laws, Blackboard did cite the DMCA in their cease and desist letter to the students. Ironically, the students had intended to present their findings at a computer conference with a free speech theme (Foster “At Blackboard’s Request”).

In a separate education related case, academic researchers were invited to investigate a copyright protection method but were prevented from sharing their results. In 2000, in response to a challenge from the Secure Digital Music Initiative (SDMI), computer security researchers at Princeton University began working to crack the digital watermarking technology created by SDMI to prevent copyright infringement (Simons 23). Much like paper watermarks provide information about the producer of a paper product, digital watermarks provide information about

the copyright owner of a particular digital media such as a sound, image, or video file. That information in the watermark can then be used by other technology to prevent illegal copying or modifying of the original file. As part of the contest, SDMI provided sample watermarked files and tests to determine if the researchers had indeed broken the watermark (Felton et al. “SDMI challenge FAQ). In a few short weeks, Edward Felten and his fellow researchers at Princeton successfully defeated the encryption.

Since SDMI had offered the challenge, breaking the encryption was not in conflict with the DMCA. Felten and his group shared their findings with SDMI. However, when Felten and the research group co-authored “Reading Between the Lines: Lessons from the SDMI Challenge” and announced their intention to present it at an international workshop, SDMI and the RIAA used the DMCA to threaten the group with copyright infringement. Felten withdrew the paper only days before the conference and then launched a suit against SDMI claiming free speech rights since SDMI had previously give them permission to crack the code. Note that the courts have previously ruled that source code is free speech (Clark 159). Under the pressure of a suit they did not feel as if they could win, SDMI withdrew their objections to the presentation of the paper, and Felten dropped the suit.

Even though the DMCA provides some exception for research into DRM encryption for academics like Felten, the threat of lawsuit is enough to discourage computer security analysts from engaging in research in this area. Some intellectual property experts, like Orin Kerr, will argue that “the risk that a researcher could go to jail for giving a speech at an academic conference is essentially zero” (qtd. in McCullagh “Debunking”). However, like most fair use cases, it is not a question of whether the use is fair or not, or in the instance of the DMCA, whether the researcher would go to jail, but whether the researcher wants to be engaged in litigation. This is especially unfortunate since in developing DRM, one approach is to create open standards that can be implemented by a variety of content providers. Mark Baugher describes how open standards for any sort of encryption or protection software are a good approach because researchers can critically evaluate and improve on them, making them less prone to security attacks. As companies develop DRM implementations based on open standards, breaking an open standard and publishing the method for the purpose of strengthening the standard can in effect provide a method for breaking the security of DRM, opening a researcher

up to charges of potential violation of the DMCA (Baugher).

### **Access/Accessibility for All**

One larger problem with DRM is that it contributes to the digital divide. For example, DRM-enabled media often requires specific technology for access. Individuals and schools with older technology may lack the necessary hardware or operating system version to run applications needed to access protected media. Even when the content user's hardware and operating system support these applications—whether it be the personal computers of teachers and students or institutionally maintained machines—some individuals and institutions may lack the necessary technological skills or IT support to install and maintain the software. For those with the skills, installing those applications adds a burden in terms of time. Users with slow Internet bandwidth connections could be discouraged from accessing media when it requires downloading a large application online.

DRM also creates a problem for those with disabilities. Internet activist John Perry Barlow recounts his experience in purchasing an ebook of *Alice in Wonderland*, a public domain text:

among the things that you click through before you can activate it is a legal enjoiner from reading it out loud—because that's a form of reproduction. Now I have never seen a book that said I couldn't read it out loud, especially one for children. (39)

For the visually impaired, this denies their use of a text-to-speech reader, which is assuming that an ebook's DRM encoding would permit a text-to-speech reader to read the text out loud in the first place. In a study of ebooks, the American Foundation for the Blind “found that over over 50% of the titles authorized for digital sale were ‘locked up,’ and, therefore, not available via common screen reader interface” (Dinsmore). Furthermore, as the ALA notes, a user cannot tell if an ebook is accessible via a screen reader until they download and purchase it (“Digital Rights Management and Accessibility”)

### **Digital Texts in the Classroom: The TEACH Act**

Jessica Litman notes that educators were largely underrepresented in negotiations involving the construction of the DMCA except by libraries (127). The interests of libraries, though, did not address the needs of distance educators regarding fair use for the classroom;

when their interests “diverge” with that of everyone else, “the libraries will look out for themselves” (Litman 127). While the DMCA did not make specific fair use allowances for distance education, it did direct the U. S. Copyright Office to review the needs of distance education and submit recommendations for follow up legislation. Some educators point to the resulting 2002 Technology, Education and Copyright Harmonization Act, or TEACH Act, as a positive example of extending fair use to the digital domain and an instance of effective political action on the part of education. For instance, in her *New York University Law Review* article examining the rights given education in the TEACH Act, Kristine Hutchinson describes the TEACH Act as “a balance between the pedagogical interests of educators in using copyrighted works in online education and the copyright owners’ interests in preserving their markets” (2218). While it is true that the TEACH Act makes allowances for using digital intellectual property in online courses, the conditions of use accompanying the TEACH Act seem less than fair and certainly not balanced. When considered more closely, they are best viewed as minimal concessions which continue to favor the rights of content providers over the needs of education.

**For Distance Education or for All?** In defining five basic changes to copyright law that the TEACH Act permits, Laura Gasaway suggests that

it removes the concept of the physical classroom and recognizes that a student should be able to access the digital content of the course wherever he or she has access to a computer. (82).

This seems to be a common interpretation of the TEACH Act, that it provides for the use of digital texts in all class types: face-to-face, hybrid, and purely online distance education classes. For example, Patricia McClary, the Associate University Counsel at Cornell University, informed all faculty and staff that the then new TEACH Act provided usage guidelines for “materials prepared for at-home use by students enrolled [in] courses taught in traditional classroom settings as well as distance learning courses.” Similarly, Kenneth Crews explains in a FAQ provided by the ALA that the TEACH Act does indeed apply to digital materials included with “web sites or web tutorials” that “supplement the ‘live’ classroom” (“The TEACH Act”).

However—and perhaps my pessimistic skepticism is because of my similar pessimistic understanding of current intellectual property events and legislation—these interpretations of applying the TEACH Act to face-to-face traditional classes which use digital technology to



distribute copyrighted materials are based on some unclear terminology in the relevant section of Title 17 regarding what is a class session. Even Crews has admitted that there is “no explicit definition of a ‘class session’” (Crews “Copyright and Distance” 27). The language in the relevant section compares the allowable use instance to that of a “live classroom session”:

the performance of a nondramatic literary or musical work or reasonable and limited portions of any other work, or display of a work in an amount comparable to that which is typically displayed in the course of a live classroom session, by or in the course of a transmission, if—

(A) the performance or display is made by, at the direction of, or under the actual supervision of an instructor as an integral part of a class session offered as a regular part of the systematic mediated instructional activities of a governmental body or an accredited nonprofit educational institution;

Once again, further clarification of the term “mediated instructional activities” compares the use to a live classroom. An analogy does not necessarily imply inclusion:

In paragraph (2), the term “mediated instructional activities” with respect to the performance or display of a work by digital transmission under this section refers to activities that use such work as an integral part of the class experience, controlled by or under the actual supervision of the instructor and analogous to the type of performance or display that would take place in a live classroom setting.

If one interprets the relevant sections from a copyright owner’s perspective, the TEACH Act seems to imply that these uses are granted for distance education courses in which an online activity is a *substitute* for a face-to-face class session. Would digital texts posted to a course website to be read outside of a “live session” of the class qualify under this interpretation? Seemingly in contradiction to the FAQ Crews authored on the ALA website, Crews notes that in purely distance education classes, because of the live session language, the TEACH Act may exclude works normally meant to be used outside of the classroom: “occasional brief handouts—perhaps entire short works—maybe permitted in distance education, while reserves and other outside readings may not be proper materials to scan and display” (“Copyright and Distance” 39).

Moreover, copyright owners will probably want the most restrictive reading. Hutchinson makes clear what might be the copyright owners’ position: that the use of copyrighted works for

distance education under the TEACH Act “is necessary to prevent students who choose to take online courses from receiving educational experiences inferior to their on-campus counterparts” (2220). Furthermore, if the TEACH Act provides for the use of digital texts as the ALA FAQ suggests, then copyright clearance should be unnecessary. Very recently, the Copyright Clearance Center worked in conjunction with Blackboard to include a new feature in course management software. Faculty members can seek copyright clearance for texts loaded to their site using two options built into Blackboard:

- “It connects a professor with a librarian or other staff member on the same campus who handles copyright issues and permissions.”
- “It opens a database at the Copyright Clearance Center, through which a professor can search for articles by name and purchase permissions without a librarian’s help. Once an article is found, the database will tell the professor what rights are available for the article, and how much using it would cost, based in part on the size of the professor’s class.” (Carlson “New Courseware Feature”)

If faculty members will be making the work available on the course Blackboard site for download, why would they need to seek copyright clearance unless the previously stated concerns are true, that materials meant to be read outside of the classroom, particularly in the case of non-distance education courses do not fall under fair use or the TEACH Act? The mere existence of this online copyright clearance service for Blackboard will lead copyright owners to expect its use.

**Problems with Circumvention and Protecting against Infringement.** The Consortium of College and University Media Centers has previously expressed concern about the conflict between the DMCA and the TEACH Act. The DMCA disallows circumvention of copyright protection measures; yet, the TEACH Act allows use of the work, although not making it clear that circumvention of those technologies is legal for educators (“College Media Group Cautions That 2 Copyright Laws Could Collide”).

Suppose that educators are allowed to circumvent DRM. Where would the means to do so come from? Circumvention software is illegal—and thus unobtainable—so what would be the process by which teachers gain access to circumvention technology? One possibility—educators will be dependent upon the specific content owners or publishers of a text to provide the means

of circumvention, and they in turn will be wary of making circumvention methods widely available. What evidence or proof of legitimate use would teachers have to give a content provider to obtain circumvention technology? What if the content provider decides that the use is infringing and says no? Even if the content owner is willing to provide DRM circumvention, they may be unwilling to widely distribute such technology to all faculty, preferring instead to give it to institutional information technology (IT) support or distance education departments so that its use can be better controlled. This is also assuming that content providers have the means to provide a DRM override that addresses the needs of educators. Regardless, gaining fair use of materials in the classroom may involve a bureaucratic-ridden, complicated process that will discourage many teachers from making a request.

Even when educators do have the capability of overriding DRM or if a course material was not DRM-enabled, a teacher cannot simply put up a password protected Adobe PDF of an article on a course website. The TEACH Act requires that it also be delivered in an unsaveable, uncopyable format which cannot be redistributed (Hutchinson 2232-33). Student access must also be limited to “the time period necessary to complete the class session” (“Technological Requirements of the TEACH Act” 2). Educators must furthermore be careful not to “engage in conduct that could reasonably be expected to interfere with technological measures used by copyright owners to prevent such retention or unauthorized further dissemination” (Title 17). In the case of audio and video, the files will need to be made available in a streaming format or some DRM embedded format that uses a desktop client or web application plugin to prevent potential copyright infringement. All of these further requirements of the TEACH Act impose significant technological difficulties, likely leaving most teachers completely dependent upon IT support to prepare the digital texts.

### **Shifting Our Cultural Values Toward Permission**

Within the TEACH Act is a clause which provides conditions under which an educational institution would not be held liable for copyright infringement by a faculty member or student. One of the conditions is that “the institution provides all of its users with informational materials describing and promoting compliance with copyright law” (USPTO Copyright Office Summary 13). Institutions are required to

- “have an internal policy on use of copyrighted material and on copyright law”;

- “provide printed or online resources for faculty members that describe their rights and responsibilities under copyright law”;
- “inform students that the material may be protected by copyright law.” (Carnevale “Slow Start”)

Will these policies and other online resources present a balanced view of copyright? Or are institutions promoting the content industries’ agenda? For example, institutional policy statements such as the University of Delaware’s “The Code of the Web” will train a new generation to accept Stallman’s future of a strictly pay-per-use, permission-based culture. Copyright owners, such as William Strong, advocate a strong educational mission for publishers and copyright owners to promote the importance of copyright owners’ rights. The problem is that their message is likely to be an unbalanced one. For instance, Junior Achievement, a not-for-profit organization that works in K-12 “to educate and inspire young people to value free enterprise, business, and economics to improve the quality of their lives” (“About JA”), received funding in 2003 from the MPAA for the establishment of a new program, “What’s the Diff?” (“JA Unveils”). The program, to be administered to 900,000 middle school students nationwide, is

designed to teach middle grades students responsible “digital citizenship” and educate them about the importance of respecting copyrights and not engaging in illegally downloading or swapping protected materials on the Internet. (“JA Unveils”)

In their press release regarding this initiative, the MPAA announces that the program covers a “history of copyright” and “the serious consequences for the students themselves and for the people and industries whose ideas and products are being misappropriated without permission or compensation” (“Film/TV Industry”). As educators, we need to ask “whose history?” If educators are lucky, perhaps students will unravel the MPAA’s motivations and the rhetorical strategies used to promote a protectionist culture, and look beyond the one-sided view of copyright offered by copyright owners. In a recent seminar on piracy at UCLA which included U.S. Attorney General Alberto R. Gonzales, students “suggested that government should focus more on tackling poverty and improving education than on jailing kids who download movies, music and software” (Munoz and Healey). One high school senior, Kate Schwartz, asked, “Isn’t

the government using morality as a means for studios to make millions of dollars?” (Munoz and Healey).

Whether or not students see through the biased views on copyright offered by the content industries, society may end up adopting more protectionist views simply through exposure to DRM content and applications that allow users to themselves enable DRM, making control the de facto standard in content creation. Microsoft Office 2003 Professional Edition now includes Microsoft’s own version of DRM for its office applications, Information Rights Management (IRM) (“Information Rights Management”). In Office 2003, IRM works in conjunction with their Windows Rights Management (now a part of Windows 2003 Server and to be included in Vista, the next Windows release after Windows XP) to control who can access, modify, copy, forward, and print emails, spreadsheets, Word documents, and other texts created with Microsoft Office. In order to access these files, users will have to use Office 2003 or download a plugin for Internet Explorer. These features are similar to the document controls present in Adobe Acrobat Professional 6.0 which allow users to lock a document with a password and control printing and modification.

These are certainly useful features for certain contexts, such as access controls for guaranteeing document security of sensitive information or read only settings for guaranteeing the authenticity of a document as an exact duplicate. Yet, will computer users choose the appropriate DRM implementation for the rhetorical situation? Or will they, as members of a society training them to see control and protection as the proper way to handle the creation of content, choose to set defaults to lock down their content? Will educators find that documents published to the Web in Adobe PDF have printing disable, preventing them from making fair use of a printed version of a document in a face-to-face class meeting?

In the Winter of 2004, The Joan Shorenstein Center on the Press, Politics and Public Policy at Harvard’s John F. Kennedy School of Government released a case study, “‘Big Media’ Meets the ‘Bloggers’: Coverage of Trent Lott’s Remarks at Strom Thurmond’s Birthday Party,” a detailed account of the blogosphere’s role in Lott’s resignation as U. S. Senate Majority Leader during 2002. While the quality of the article is not in question—indeed, it is a very useful piece of historical analysis for anyone researching the influence of blogging on big media—the motivation behind its copyright disclaimers are. Michael Feldman notes that while the article can

be downloaded for free as an Adobe PDF,

The weird thing is the extent to which the authors have gone to make sure this milestone article in the academic history of the Blogosphere is unbloggable. Excerpts or selections of the text cannot be saved, or copied and pasted. The document cannot be converted to another format or saved as anything else. The words “Not to be Copied” in 92-point faded-shit brown watermark letters are splayed diagonally across each and every page.

The “weirdness” is complicated further by the draconian copyright disclaimer on the bottom of the first page:

Copyright © 2004 by the President and Fellows of Harvard College. No part of this publication may be reproduced, revised, translated, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the written permission of the Case Program. (Scott)

The copyright statement above contradicts the purpose of making the text available online. Since a computer is a “retrieval system”—the article will be stored on a user’s hard drive upon download—downloading the article without the permission of the Case Program is prohibited. Yet one must read the article in order to see the copyright disclaimer. This statement also denies my fair use right to include it here: “No part of this publication may be reproduced . . .” It is questionable why anyone at an academic institution publication would go to such lengths to discourage the dissemination and fair use of a freely available article placed on the web.

### ***Changing Expectations***

Despite the pessimistic vision offered above, I would not be surprised if in the long term, content providers do implement DRM solutions which give users some fair use capabilities. In the meantime, the content industries are more focused on piracy than in meeting consumer needs, seeing rampant file sharing as a direct attack against them. Before change will come, they will need to see file sharing as a rebellion against unfairness and tyrannical control of content, one that represents their failure to meet customer expectations for using digital content. They will

need to shift their understanding of users away from the perspective which Samuelson describes, “In the content industry’s view, consumers don’t have rights; they have expectations. Consumers may not like DRM systems, but if ‘legitimate’ content is available only on this basis, they’ll get used to it” (“DRM {and, or, vs.} the law” 44).

At the same time, educators must remember that the content industries are influenced by their desire to maintain their current market share. Electronic media and the Internet as a distribution means are disruptive technologies which can threaten “particular business model[s]. . . There’s no question that a disruptive technology can overturn an existing industry and create opportunities for new players” (qtd. in Fowler 30). Regardless of the risk, content providers will have to overcome their fears in order to connect with consumers. In their study of users’ perceptions of DRM in ebooks, the Association of American Publishers (APA) and the American Library Association (ALA) reported that “in concentrating so much on copyright protection, early DRM put the success of electronic publishing efforts at risk by failing to satisfy consumer preferences” (“What Consumers Want” 11). Similarly, Michael Einhorn and Bill Rosenblatt note that “economic analysis” has shown that “content providers who heedlessly hinder customer control actually reduce the value of the product that they are selling in the market. Doing so will reduce market demand, prices, and profit” (2). If educators expect to use their influence as consumers over content providers, they must be careful to avoid what Samuelson has called “the main purpose of DRM”: “to change consumer expectations about what they are entitled to do with digital content”( “DRM {and, or, vs.} the Law” 41). Instead, we must work to change the expectations of copyright owners or be left with the possibility of a future where there may be no right to read.

## CHAPTER 2

# ENCLOSURE OF THE COMMONS AND THE ENCROACHMENT OF FAIR USE

During the 2005 Conference on College Composition and Communication (CCCC), Lawrence Lessig gave a presentation at a featured session on intellectual property. A Stanford University intellectual property law professor, Lessig is well known for arguing before the U. S. Supreme Court in *Eldred vs. Ashcroft*—the case about recent copyright term extensions—and would likely be considered the leading intellectual property reform expert and advocate given his research, publishing, and work with Creative Commons (CC) and the Electronic Freedom Foundation (EFF).

As was hoped for by myself and others copyfighters at that convention, Lessig's presentation created more general awareness among those attending of current problems with intellectual property. He achieved this by centering his presentation around one important question for writing teachers: "Will Writing Be Allowed for Them?" Much like Richard Stallman's concerns about how recent changes to intellectual property law would challenge the "right to read," Lessig discussed the implications of intellectual property law for "remixing culture" and what this means for students. The students of today, Lessig reminds us, grow up with multimedia texts infiltrating their daily lives. Students also have digital tools such as Adobe Photoshop and iMovie to create multimedia texts. These tools can produce new media revisions and/or collages of existing works; thus, while writing teachers may see the traditional alphanumeric text as the main medium for self-expression, writing for students will involve the remixing of culture by using text, sound, image, and video editing tools to modify, slice, dice, expand, and merge works into new ones.



As is probably obvious from the previous chapter, digital rights management (DRM) solutions problematize this remix of culture. DRM can easily prevent someone from copying a portion of a work that would be considered fair use. In the future, DRM will likely significantly limit the selection of music our students can sample from. Certainly, the popular songs inundating our culture on the radio and MTV will carry strict copyright protection controls on the copies which students purchase. Even more of a problem is that creating these texts is one thing; publishing these texts to the web is another. Query a class of first year students at the average higher educational institution in the U.S., and some instructors will find they have at least one student or two who enjoys sampling music to create new recordings. They might even have a student who enjoys creating photograph or video collages. Some students would also be interested in trying to create multimedia works themselves. At the same time, our discipline encourages working with multimedia texts. Multimedia projects are becoming common components in first year writing classes where students may end up producing texts which remix culture using copyrighted works.

In a recent report on U. S. teen content usage and creation on the Internet, the Pew Internet and American Life Project found that “some 57% of online teens create content for the Internet” with 19% of those on the Internet remixing “content they find online into their own artistic creations” (Lenhart and Madden i). Lee Rainie, director of the Pew Internet and American Life Project, told the BBC News that the teens in the study “were born into a digital world where they expect to be able to create, consume, remix, and share material with each other and lots of strangers” (“US Youths”). Unfortunately, sharing these texts with others, particularly on the Internet, may be dangerous for these students—or anyone, for that matter—regardless of whether or not the use of other copyrighted works within their compositions is fair use or the work is done as part of a class assignment. Without the support of a major publisher, student work such as this cannot be publicly displayed safely online without risk of copyright infringement suits. Given the Recording Industry Association of America’s (RIAA) recent assault of hundreds of students of all ages in their peer-to-peer (P2P) file sharing suits, it would be naïve to assume otherwise. Big media has demonstrated enough unwillingness to be fair and reasonable in intellectual property disputes involving students. For instance, in April 2004, the RIAA sued four students at three separate universities for running local file sharing networks:

- In the suit against each student, the RIAA sought \$150,000 in damages per song, the maximum allowable amount under copyright law. Because the RIAA claimed that Michigan Tech University student Joseph Nievelt had facilitated the trading of 625,000 files on his file sharing network, Nievelt faced a potential \$97.8 billion damages (Newman “Recording Industry Has Warning”).
- Even though Michigan Tech University “had been a partner with the RIAA on education campaigns on copyright laws,” the RIAA did not work with the university to solve the problem as per their agreement to work together (Naraine “MTU President Irked”).
- Michigan Tech’s campus network allowed students to create shared folders using the basic Windows folder sharing function. Nievelt’s program was merely a search engine, not a peer-to-peer application, that indexed the available files on the shared network provided, ironically, by the university (Dean “P2P Whipping Boy”).

This is not to say that writing teachers should discourage multimedia writing where students will remix culture with intellectual property, but our culture is becoming a privileged society where only the wealthy or those with publishing contracts can afford to remix with impunity. Americans now live in a democratic society where use of widely available writing tools for self-expression must be censored because of the abuse of our legal system:

While inexpensive digital technology has exponentially expanded the power of individuals to master their own media spaces and manipulate texts and images in ways that seem to signal an age of “semiotic democracy” (Coombe 1992), powerful forces have acted to reengineer—one might say “reimagineer”—from above these otherwise liberating and empowering systems. ( Vaidhyanathan “Remote Control” 2).

These “powerful forces”—corporations which derive their income from intellectual property—with the help of the lawyers who make their living from it, are continually “reengineering” the rules of copyright to increasingly privatize all intellectual property. This trend is an issue that should be of serious concern to not only educators, but all members of society.

## ***Fair Use: Fair for Whom?***

As everyone should come to understand, fair use in principle is quite different than fair use in practice, for fair use legal rights when contrasted with fair use as understood for the classroom are a muddled affair. Many teachers do not have a clear understanding of what is fair use and what is not. As a consequence, the Intellectual Property Caucus for the Conference on College Composition and Communication (CCCC-IP) explains in “Use Your Fair Use: Strategies for Action” that most writing teachers are not using the fair use exemption in their teaching or publishing to the full extent provided by law, and they encourage writing teachers to exercise their full rights in the future (“User Your Fair Use” 486). Encouragement, though, does not address the difficulty with understanding when something is fair use, for fair use determinations are made by weighing the following four factors from U.S. Code Title 17, Chapter 1, § 107:

In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) the effect of the use upon the potential market for or value of the copyrighted work.

David Nimmer explains that making a fair use determination is further complicated by understanding where the use fits within the idea/expression dichotomy (“Fairest of Them All” 265). Whether or not an educator feels that they have judged the use correctly, only the courts—through case law—can ultimately determine fair use. Drawing on research of sixty fair use court decisions, Nimmer concludes legal interpretations are highly subjective: judges decide on whether or not the use is fair use “and then align the four factors to fit the result as best they can,” using the four factors as “convenient pegs on which to hang antecedent conclusions” (“Fairest of Them All” 281).

Since even the courts have difficulty arriving at fair use determinations, it is no small wonder that everywhere the teacher or academic turns for clarification, fair use interpretations are often conflicting. CCCC-IP points out how this is complicated by the competing interests which guide fair use advice:

- Institutions often use stricter guidelines than those required by law.
- “Publisher’s associations have crafted their own set of rules.”
- Electronic texts fair use determinations differ from printed texts
- *Basic Books vs. Kinkos* and other landmark cases have discouraged copyshops from copying any materials without copyright clearance. (486-487)

To illustrate these difficulties, well-known intellectual property scholar Siva Vaidhyathan tells of a talk he was to give on his examination of culture and intellectual property, *Anarchist in the Library* (“Fair Use”). Prior to his presentation, a faculty member from the institution where he was to give his talk contacted him about distributing a chapter of his book in PDF format. Would Vaidhyathan grant him permission? Vaidhyathan responded that the professor should certainly feel free to distribute the text. However, he also advised the professor not to ask, that “he should have just assumed fair use and used the chapter, knowing that I—of all people—would probably not challenge him on it and accuse him of infringement” (“Fair Use”). In response to Vaidhyathan’s encouragement to use the work, the faculty member disclosed that a librarian at his institution had advised him to play it safe and contact the author.

How, then, do educators know what advice to follow? The solution advocated by CCCC-IP and Vaidhyathan, among others, is that all educators should be aware of their fair use rights, and, when they feel they are within their rights, not to ask for permission. This “Don’t Ask” mantra—also known as the “Use It or Lose It” practice (Orlans “Scholarly Fair Use”)—has become generally popular throughout education despite the potential consequence: an educator could be sued for copyright infringement. Advocates of “Don’t Ask” believe that fair use is often settled in court, and if educators do not exercise their fair use rights to the full extent of the law, case law will continue to encroach on fair use rights. As Harold Orlans describes quite vividly, “the scope of fair use in scholarly publishing seems to be shrinking like a melting glacier” (Orlans “Scholarly Fair Use”). Nevertheless, “Don’t Ask” is “a gamble” that could cost an individual or institution “thousands of dollars” ( Vaidhyathan “Fair Use”). Vaidhyathan—

much like other copyfighters—feels the risk is worthwhile for educators: “if we don’t make a stand against copyright vultures we might as well be waiting around to become carrion” (“Fair Use”).

I, too, am all in favor of doing something about the “copyright vultures,” and I used to be a believer in “Don’t Ask” only a couple of years ago. But I am not convinced anymore that this advice should be followed to the rule given the difficulties even the courts have in determining fair use. While laudable, choosing to be on the side of principle does not prevent potential legal entanglement. As a leading intellectual property scholar and activist, Vaidhyanathan would certainly enjoy the support of his institution in practicing “Don’t Ask” in most cases. On the other hand, would an institution back the typical teacher or academic researcher’s fair use rights in any copyright infringement circumstance as recommended by “Don’t Ask” and foot the bill for legal counsel? Would they do so without punitive consequences for that educator’s career at the institution? One might hope so, but there is no guarantee for even fully tenured faculty. In order to gain institutional support in the first place, an educator would have to either be following the guidelines of that institution—as already explained, many colleges and universities have conservative fair use policies, not the full rights “Don’t Ask” promotes—or convince the institution that the educator’s non-legally trained views on fair use are more valid than that of institutional copyright guidelines, policy documents which are often prepared with the assistance of legal counsel. The “Don’t Ask” guideline also ignores the fact that many educators and institutions prefer to err on the side of caution to avoid lengthy legal entanglement. After all, the time commitment alone for legal action is abhorrent regardless of the potential cost of defending a copyright infringement suit.

So I suspect that many educators that follow “Don’t Ask” do so without fully understanding the potential consequences or only when they feel the risk of copyright infringement suit minimal, when they feel safe, such as when submitting an academic text for publication where editors will make the final fair use determination or when creating copies of a text for classroom readings. Educators must choose their battles carefully; for these reasons above, outright fighting for fair use regardless of cost will rarely be one of those chosen battles. Consider how costly that battle becomes—and much less winnable—in the context of multimedia content creation:

- Will our institutions back students' fair use rights to creatively remix culture?
- Would intellectual property owners sue academics or students if their remixed culture compositions were made public on the Internet?

The answer to the second question is clear if one understands the system and the recent history of copyright licensing and legal practices. With a well-developed strategy of expensive licensing and vigorous copyright infringement enforcement, the content industries have demonstrated that approval from them almost always involves licensing, regardless of fair use rights. The licensing payments they require, moreover, are expensive enough to be a disincentive to creation. In *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*, Lawrence Lessig explains,

The costs of negotiating the legal rights for the creative reuse of content are astronomically high. These costs mirror the costs with fair use: You either pay a lawyer to defend your fair use rights or pay a lawyer to track down permissions so you don't have to rely upon fair use rights. Either way, the creative process is a process of paying lawyers—again a privilege, or perhaps a curse, reserved for the few. (Lessig *Free Culture* 107)

Lessig also provides a good example. In creating a documentary film about Wagner's *Ring Cycle*, teacher and filmmaker Jon Else captured a short segment of *The Simpsons* running on a television in the background in one of the shots (*Free Culture* 95). The video image of *The Simpsons* was only visible in a small portion of the frame and was only four-and-a-half seconds in duration. While *The Simpsons* was not directly related to Wagner and the subtopic of the film, in Else's view, "this touch of cartoon helped capture the flavor of what was special about the scene" (Lessig *Free Culture* 95). Else decided to contact *The Simpsons* creator Matt Groening for copyright permission to avoid any future legal entanglement. Groening approved the use but suggested that Else also check with his producer, Gracie Films. Gracie in turn gave their approval, but recommended to Else that he check with their parent company, Fox. Here fair use ran afoul of big media's aggressive protectionist practices. Fox informed Else that they owned the rights to *The Simpsons*—not Groening—and that they would only be willing to give their approval for a fee of \$10,000. It would seem that "fair and balanced" is merely a catch phrase for Fox's journalism, not a reflection of their fair use interpretations and licensing practices.

There is no doubt that this instance meets the four criteria for fair use. Almost any legal expert would agree with this—well, other than Fox’s attorneys. But there is also no doubt that Fox would have sued Else for copyright infringement had he used the footage anyway, and that the legal fees necessary to defend his fair use rights would have ended up costing several times more than the \$10,000 fee. Moreover, Else told Lessig that

before our films can be broadcast, the network requires that we buy Errors and Omissions insurance. The carriers require a detailed “visual cue sheet” listing the source and licensing status of each shot in the film. They take a dim view of “fair use,” and a claim of “fair use” can grind the application process to a halt. (qtd. in Lessig *Free Culture* 98)

In his presentation at CCCC, Lessig noted that this is a problem for all low-budget independent film makers (“Intellectual Property”). Independent films shown at film festivals such as Sundance must be picked up by a major film studio to cover the copyright clearance costs before the film can be distributed to major theaters. Copyright clearance for distribution examines all uses of intellectual property within a film: a photograph in the background or a piece of designer furniture. In each case, licensing fees must be paid.

Without the kind of money in his documentary budget to pay for copyright clearance for a non-essential element, Else eventually removed *The Simpsons* footage. Many artists would have simply eliminated that section of their film from the very beginning. Fear—induced by the widespread Mafia-style copyright protection rackets of the content industries—has itself become a fair use determination. In his work, *Freedom of Expression®: Overzealous Copyright Bozos and Other Enemies of Creativity*, Kembrew McLeod describes extensively how fear of the copyright police induces creators to self-censor their work. Evidence of this can be seen in the evolution of the music sampling genre which can trace its heritage back to 1956 to Bill Buchanan and Dickie Goodman’s “The Flying Saucer” (*Freedom of Expression* 74). Even at that time, “a few song publishers sued Goodman for copyright infringement” (*Freedom of Expression* 74). Modern sampling finally arrived in the late 1980’s when bands like Public Enemy and the Beastie Boys turned hip hop into mainstream music. With the remixing possible with digital technology, Public Enemy’s albums were a style of music never heard before: collages of music sampling from many different sources. As Public Enemy producer Hank Shocklee explains,

We were just taking a horn hit here, a guitar riff there; we might take a little speech, part of a speech over here, a kick snare from somewhere else. It was all bits and pieces. (*Freedom of Expression* 78).

At first, copyright owners paid little attention to the radical sampling. That is, until hip hop became popular and began to make money. Where there is money, the lawyers follow looking for copyright infringement (*Freedom of Expression* 78). In 1992 in the first landmark case of sampling and fair use, a judge ruled against Biz Markie's use of a twenty second segment of Gilbert O'Sullivan's "Alone Again (Naturally)," even recommending criminal prosecution for stealing (*Freedom of Expression* 78-79). From then on, music labels submitted all new music prior to release through copyright clearance using sample-clearance house companies (*Freedom of Expression* 87). Between the attorneys, all other individuals involved in the clearance, and the licensing fee itself, sampling costs have risen more recently to as much as one hundred thousand dollars per sample (*Freedom of Expression* 87-88). Even early on in the history of hip hop, copyright clearance costs significantly impacted creativity. Kembrew notes discernible changes between Public Enemy's 1988 and 1990 albums and their 1991 release:

Gone were the manic collages that distinguished their previous two albums, where they fused dozens of fragments to create a single song. The new sampling licensing rules didn't differentiate between collaging small sonic chunks and entire choruses. (*Freedom of Expression* 68)

The astronomical increases in cost limits the number of samples a musician can include in a song if it is to be released. For instance, the Beastie Boys 1989 *Paul's Boutique* album was ninety-five percent sampled at a cost of \$250,000 in fees, an album that would be too costly today to produce and clear for copyright (*Freedom of Expression* 89). Imagine if T. S. Eliot was writing *The Wasteland* today, and the sampling laws applied to all of his borrowing from other literary works. *The Wasteland*, too, might be unpublishable.

Each of these examples—hip hop and Else's documentary—represent an industry-wide practice of pay up or be sued that extends beyond mere content creation, but also to uses of works embedded in long-standing tradition. One of the most vivid examples involves the Girl Scouts of America and their well-known history of singing campfire songs. The American Society of Composers, Authors and Publishers (ASCAP) considered that tradition and realized



that they could profit from it, reasoning “they buy twine and glue for their crafts . . . they can pay for the music, too” (Zittrain). In the 1990’s, ASCAP notified that the Girl Scouts that they would have to pay licensing fees if they continued to sing songs such as “This Land is Your Land,” “God Bless America,” and “Happy Birthday to You” (McLeod *Freedom of Expression* 18-19). If the Girl Scouts continued to sing their tunes without paying licensing fees, ASCAP intended to exact penalties to the tune of “five thousand dollars and six days in jail to one hundred thousand dollars and a year in jail for every unauthorized performance” (McLeod *Freedom of Expression* 18-19). Copyright law covers public performance. As ludicrous as it would sound to most Americans, a group of girls sitting around a campfire is not an exception. As a result of media pressure, ASCAP eventually agreed not to pursue legal action if the Girl Scouts continued their tradition of singing campfire songs, but as Howard Besser notes, ASCAP warned “that they still might prosecute camps for playing background music without a license” (“Recent Changes to Copyright”).

### ***The Digital Enclosure Movement***

The law locks up the man or woman  
Who steals the goose from off the common  
But leaves the greater villain loose  
Who steals the common from off the goose  
-- Sir Thomas Moore (qtd. in Boyle 33)

The encroachment of fair use illustrated above is systemic, one facet among many in the enclosure of intellectual property. Ever since the birth of copyright with the Statute of Anne in 1710, publishers—and in more recent times, the entertainment industries and other corporations making their livelihood from intellectual property—have promoted copyright legislation under the guise of championing romantic notions of authorship and ownership. To corporations, intellectual property is foremost property to be owned and controlled, and, in the case of rights that society may hold (e.g., fair use), appropriated. Indeed, the continual appropriation or enclosure of intellectual property can be compared to the enclosure of the English public commons begun in the 1400’s to which Sir Thomas Moore refers in the oft-quoted passage above

(Boyle). Despite the subject of much controversy, by the end of the Industrial Revolution, James Boyle explains that the English enclosure movement “worked. . . . by transferring inefficiently managed common land into the hands of a single owner, enclosure escaped the aptly named ‘tragedy of the commons’” because “it gave incentives for large-scale investment, allowed control over exploitation, and, in general, ensured that resources could be put to their most efficient use” (Boyle 35).

Whether or not the social change initiated by the English enclosure movement was truly more beneficial to those elements of society that depended upon the English commons is debatable. Today, the idea that all intellectual property should likewise also be privatized can be seen in recently advanced legislation and the aggressive legal strategies implemented by corporations. In the U. S., the enclosure of intellectual property is historically part of a long tradition of privatizing public resources of many kinds. David Bollier explains that the public commons threatened by enclosure includes not only the “intangible assets” of intellectual property, but “that vast range of resources that, the American people collectively own, but which are rapidly being enclosed: privatized, traded in the market, and abused” such as “natural resources” and the “broadcast airwaves” (“Reclaiming the Commons”).

A recent, very controversial example of enclosure in the area of intellectual property is the patenting of the human genome. Kembrew McLeod observes that “in recent years, there’s been a significant erosion of both the *cultural* commons and the *genetic* commons, resulting in a shrinking of the public domain” (*Freedom of Expression* 14). One side in the debate—generally those making the profits—claims that owning the rights to gene research has helped to fund research that saves lives (Boyle 37) despite the following fundamental objections:

- Many people object to the general idea that the schematics for the building blocks of life can be owned by anyone, that it is the “common heritage of humankind” (Boyle 37). For example, parents who contributed tissue samples from their children do not understand how the Miami Children’s Hospital can patent and charge for Canavan disease gene screening therapy when the information is built on the their children’s DNA (Allen).
- In direct contrast to the main supporting claim by those that believe that the human genome should be patented, others believe that the tightly controlled ownership of

this life saving research has stifled innovation (Boyle, McLeod). When it comes to medical research, Peter Ringrose, Bristol-Meyers Squibb's chief scientific officer confesses that there were "more than fifty proteins possibly involved in cancer that the company was not working on because the patent holders either would not allow it or were demanding unreasonable royalties" (qtd. in McLeod *Freedom of Expression* 43).

- The patenting of the human genome, as well as other recent patents in science, represents a shift in the tradition of openness among scientists (McLeod *Freedom of Expression*)." Peter Drahos and John Braithwaite warn that this is one of two dangers of intellectual property: "When a group of scientists stop working on a protein molecule because there are too many intellectual property rights that surround the use of the molecule, a basic freedom, the freedom to research, has been interfered with" (*Information Feudalism* 3).

Significantly, the loss of the right to research resulting in a stifling of innovation is an instance of the "tragedy of the anti-commons." Whereas the tragedy of the commons occurs when free resources are improperly maintained or excessively used by one or more individuals, the tragedy of the anti-commons occurs during enclosure when ownership inefficiently blocks access to continued development of a resource that would have been developed if it were commonly available (Boyle 44-45). Furthermore, the tragedy of the anti-commons is visible in the U. S. patent system, most conspicuously in the ineffectiveness of the U. S. Patent and Trademark Office (USPTO) in managing the patent process when it comes to Internet technologies and other software patents. There has been much criticism of the USPTO over the seemingly vague patents granted for very general technology ideas and poor patent review and approval process of ideas for which there exists prior art. On a more general level, many patents today are being issued for "'ideas' that twenty years ago all scholars would have agreed were unpatentable" (Boyle 39). Consider the following example patents:

- Amazon has received a very controversial "one click" patents for web-based ecommerce transactions (Oakes "Another Amazon Patent")
- Acacia Research Corporation sent the University of Virginia and other colleges notices that they owed them "2 percent of the revenue from courses that use"

streaming audio and video technology in their courses” (Carlson “A Patent”). Acacia Research Corporation had received the patent in 1991 for “the concept behind storing and transmitting sound and video,” although, “not the technical details” (Carlson “A Patent”).

- Test Central began contacting institutions claiming that they held a patent on testing in online environments (Carnevale “Company Claims”).
- In 2004, Oracle received a patent for a web publishing system application which uses a database that is very similar to a content management system, a software program that has been in use several years before Oracle’s 2000 patent application.

To further illustrate the problems with the U. S. patent and trademark review process, Kembrew McLeod applied for the trademark for the term “freedom of expression®” (*Owning Culture x*). While McLeod expected that the U.S. Patent and Trademark Office would find the trademark application absurd, the only query he received about his trademark application was over an improperly completed form (*Owning Culture x*). Six months after the materials were resubmitted, McLeod became ownership of the phrase “freedom of expression®” (*Owning Culture x*).

The USPTO does not deserve all of the blame. In the “The Idea Economy: Battle Over Right to Sell Knowledge” James Kanter points out that “government officials, corporate executives and academic experts” are all concerned that the patent system is now in “crisis.” Advancements in science and technology, when coupled with an increased interest in privatizing knowledge, have led to more patent applications “in the past 20 years than in the previous 100” (Kanter). And the trend is accelerating, with 958,000 patents issued in 2004, up “from about 642,000 in 1995” (Kanter). As a consequence, patent approval offices, such as the USPTO, are overwhelmed and approving patents right and left in order to process all of the applications. Assuming this trend continues, companies may find it impossible at some point to resolve patent disputes in order to bring new products to market.

### **Goodbye Public Domain: The CTEA**

Certainly the Digital Millennium Copyright Act (DMCA) as legal protection for copyright circumvention protection technologies is an agent of enclosure Yet, whether or not one agrees that the DMCA is in the best interest of American society, it has clear relevance to the

construction of the National Information Infrastructure based on the positions articulated in the Clinton administration's white paper, the blueprint for the DMCA legislation. As an extension of the commercialization of intellectual property in digital space, DRM for digital media when protected by the DMCA can help prevent some copyright infringement, albeit a poor solution to this problem because of its cost to fair use. However, while lobbyists were promoting the construction and passage of the DMCA, they also took the opportunity to work other intellectual property legislation through Congress, an extension to copyright law more more insidious than the DMCA because it was unneeded in the context of the Clinton administration white paper. As part of the great copyright grab that Pamela Samuelson predicted, in 1998—the same year in which the DMCA became law—then President Clinton also signed the Sonny Bono Copyright Term Extension Act of 1998 (CTEA). This act

extended the term of protection by 20 years for works copyrighted after January 1, 1923. Works copyrighted by individuals since 1978 got “life plus 70” rather than the existing “life plus 50.” Works made by or for corporations (referred to as “works made for hire”) got 95 years. Works copyrighted before 1978 were shielded for 95 years, regardless of how they were produced. (Sprigman)

The passing of the CTEA came as a surprise to many copyfighters for, as Daren Fonda explains, the bill stalled in committee for years before being quickly pushed through the House and Senate in a one day via voice vote at the end of the Congressional term. Ironically, because of the voice vote, no member of Congress can be held accountable.

To better understand critiques of the CTEA, it is best to examine the U.S. Constitution, Article 1, Section 8, the passage which grants Congress limited authority over intellectual property:

To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries . . .

An obvious interpretation of this passage is that Congress's authority rests with the primary purpose of providing a benefit to society. Giving intellectual property creators rights for a limited time acts as an incentive to facilitate that goal (Brown et al.). Ray Patterson and Stanley Lindberg note how “the ordering of the policies in the clause indicates their priority” (49), an observation

reaffirmed by Justice Sandra Day O'Connor in 1991: "the primary objective of copyright is not to reward labor of authors, but '[t]o promote the Progress of the Science and useful Arts'" (qtd. in Hilton 50). Congress itself has noted that "the primary objective of our copyright laws is not to reward the author, but rather to secure for the public the benefits from the creations of authors" (Patterson and Lindberg 49).

Thus, the rights assigned to copyright owners were always intended as a "temporary monopoly" with the particular purpose of serving society first and foremost (Besser "Commodification"), and it should be clear why critics of the CTEA charge that Congress has exceeded the authority granted to them in the Constitution. Consider these two important questions:

- Since Congress is granted the power to promote progress, what incentive to create is given by grandfathering in previously created works through extending the term limits?
- Since Congress's authority rests in promotion of progress, how can society benefit more by increasing the terms under the CTEA over the previous terms from the Copyright Act of 1976 (life of the author plus 50 years)?

Judged from a Constitutional standard, the answer to the first question seems obvious. If a work has already been produced, then no additional incentive need be provided for it. Prior to the CTEA's passage, the *New York Times* pointed out the only real motivation for extending terms for works already under copyright, greed: "no matter how the supporters of this bill frame their arguments, they have only one thing in mind: continuing to profit from copyright by changing the agreement under which it was obtained" ("Keeping Copyright"). Meanwhile, the answer to the second question is equally important because Congress has increased copyright terms eleven times in the past forty years ("About Us"). How much or when is enough? Many copyfighters feel as Howard Besser does,

It is absurd to think that 75 or 95 years is a "limited time," and even more absurd to rationalize that exclusive rights lasting beyond one's lifetime would provide incentives that would encourage a creator to create more works. ("Recent Changes")

The difference in positions represented by the copyfighters and copyright owners in this

debate derives from their perceived value of the public domain. Once copyright on a work expires, the author loses her exclusive rights and that work is said to be in the public domain, the “lawyer-free zone, unregulated by the rules of copyright law” (Lessig “The Public Domain”). Under the Constitution, copyrighted works should eventually “enter the public domain in a timely fashion” (Brown et al.). From the content industries’ perspective, this lawyer-free zone is mostly annoyance; they would prefer to have perpetual ownership of a work. For instance, consider Charles Scribners Publishing’s potential loss of revenue. If the CTEA had not halted the expansion of the public domain at 1923, many of the early works of Ernest Hemingway, Thomas Wolfe, and F. Scott Fitzgerald—Scribners’ choice authors from the 1920’s—would already be public domain or poised to soon enter it. Then there is Disney, suspected of being one of the main proponents of the CTEA. Mickey Mouse’s copyright was set to expire in 2003. Notably, during 1997-1998, Disney donated 6.3 million to Congress (Sprigman). This money is on top of the \$11 million previously donated by the content industries to the 1996 congressional campaigns (Besser “Commodification”), giving the content industries powerful influence over Congressional members.

Furthermore, in addition to perpetual ownership of works, it would be advantageous to big media if there were no public domain. The English enclosure movement involved not only supply—the privatization of public resources—but also benefited from the demand created by taking the resource away. As the village commons was developed commercially, users of the resource then had to turn to those who now owned the resources or other vendors for their needs. In a society without a public domain, corporations need compete mainly with those who also work for profit rather than with any free alternatives. Profit would be maximized.

Eric Eldred is one person who wants to offer free alternatives. In 1995, Eldred began with the idea of creating online editions of literary texts for his daughters, but he soon expanded his initial plan to include the growth of an online e-library of hundreds of out-of-print or otherwise hard to find public domain works (Fonda). Eldritch Press became known for its collection of American authors and “specialized collections of works such as World War I novels, writings about small boats, French and Russian literature (with some bilingual works), science and natural history, and works appropriate for reading aloud to children” (*Eldred vs. Reno*). In 1997, his website was recognized by the National Endowment for the Humanities (*Eldred vs. Reno*).

Eldred's love of books and passion for making them available on the Internet led him to speak out against the CTEA. In January of 1999, Lawrence Lessig filed suit against the government for Eldred. The plaintiffs claimed that the CTEA was unconstitutional on the grounds "(1) that extending existing terms violated the Constitution's 'limited Times' requirement, and (2) that extending terms by another twenty years violated the First Amendment" (Lessig *Free Culture* 228). The case was eventually taken up by the U. S. Supreme Court, and in January of 2003, the Court ruled in favor of Congress's right to extend copyright term extensions and, critics fear, seemingly indefinitely.

The U. S. Supreme Court's decision was surprising to many for it seems to discount the value of the public domain, even though the arguments against increased copyright terms are many. For example,

- Out of print works may have no commercial value and should now belong to the public. In fact, they account for a significant percentage of those works still under copyright: "Justice Steven G. Breyer estimated only 2 percent of the work copyrighted between 1923 and 1942 continues to be commercially exploitable" (Lessig "Protecting Mickey Mouse").
- Many older works are orphaned. That is, the original copyright owner is next to impossible to find, making the cost of gaining permission or licensing of the work prohibitive. This is especially problematic for academic research, teaching, and libraries (Keller; Carlson).
- Not only not-for-profit volunteer efforts such as Eldred's have lost out. Small publishers, such as those specializing in reprints of public domain texts that have no value to commercial publishers, have built business models around the expected continual expansion of the public domain (Fonda).
- "The law also amounts to a tax on the freedom of speech of authors who want to use the public domain to create new works" (Bollier *Silent Theft* 123). In other words, those who planned to make use of texts prepared to enter the public domain have had their speech silenced.
- Most importantly, remixing culture is at risk. With expensive copyright clearance processes for any use of a copyrighted work, the public domain provides a near



costless resource for creators to draw on, providing an incentive for creation.

### **Global Effects of Enclosure**

The second enclosure movement differs significantly from that of the English enclosure movement in one main regard. The village commons was a public resource upon which local residents depended. Because of the Internet, electronic texts can be made available regardless of physical proximity. A web page can be as easily shared with someone in the next county as someone half way across the globe, and in this global economy, intellectual property laws can be an aspect of trade negotiation. In terms of enclosure, the U. S. has and continues to work to impose its intellectual property system on this global village. Peter Drahos notes that “intellectual property rights along with terrorism, narcotics and people trafficking are the four key targets for the US in any international negotiation” (Drahos).

For example, the World Trade Organization’s (WTO) Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, signed in 1994, set minimum international intellectual property law standards for all nations (Drahos and Braithewaite 10). The first international intellectual property treaty in over a century, TRIPS extends the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886). Assuming that our society has some moral obligation to assist developing countries, one would hope that TRIPS would create a climate for increased economic growth for everyone. Yet, the benefits of TRIPS are largely one-sided. As Drahos and Braithewaite s, “no one disagrees that TRIPS has conferred massive benefits on the US economy, the world’s biggest net intellectual property exporter, or that it has strengthened the hand of those corporations with large intellectual property portfolios” (11). TRIPS, then, creates a market for U. S. intellectual property at the expense of dampening economic growth in developing nations and limiting access to knowledge that could benefit health and social services. U.S. intellectual property principles create an artificial scarcity of knowledge and information, and as Michael Geist points out, an “intellectual property digital divide”:

The United States stands at one end of the spectrum with its vision of an intellectual property development program premised on ‘technical assistance’ including the creation of stronger intellectual property administration and enforcement. . . . India eloquently presented the perspective from the developing

world. It argued that the current emphasis of technical assistance on implementation and enforcement issues is misplaced, emphasizing that the focus should instead be placed on assessing the impact of intellectual property rules on the developing world. (Geist)

Previously, the term digital divide, when applied to developing nations, focused on the lack of computer hardware and technology available. More recently, as with Geist above, there seems some increased awareness that the lack of access to knowledge is of at least equal importance. In 2005 at a Santa Cruz symposium, “Speakers . . . talked about the importance of creating a ‘digital commons’—a public, online space for knowledge that would help alleviate social and economic problems in poor countries, as well as inequities between the developed and developing worlds” (Ha).

### ***Writing Might Not Be Allowed***

Over the last two hundred years, the balance has steadily shifted away from promoting the public good toward favoring the protection of the copyright owner’s property (Hilton 50). As is common in the rhetoric critiquing enclosure, I have included a few examples above illustrating this accelerating trend in the commodification of knowledge. Writing teachers and other educators should consider these examples, and others which they may encounter, in light of Jay Bolter’s words: “as educators, however, we cannot afford to ignore the efforts of companies and governments to restrict fair use of intellectual property. We have more to lose than the general public, because we are both consumers and creators of such property and because our work requires access to a variety of written and (increasingly) audiovisual sources” (Herrington xi).

As educators, we do indeed have much to lose as both “consumers and creators” of intellectual property. Yet, educators must do more than be aware of the encroachment of fair use and struggle against it. Educators should also recognize that the public commons is equally important to all members of society. With the public domain halted in the 1920’s and the DMCA locking up fair use of digital material, our ability to have our students create new media texts which sample our culture is seriously affected. Consider also access to our culture. Given equitable access to technology, a difference still exists between the have’s and the have not’s in

terms of what information can be accessed. The public commons—as long as it continues to exist and grow—is an equalizer in this regard. Projects like Eldred’s intended to make more texts readily available on the Internet as they entered the public domain. Instead, the works of Ernest Hemingway, Thomas Wolfe, Gertrude Stein, F. Scott Fitzgerald, authors who are an integral part of the American Literary Tradition, are still commercially controlled.

At the same time, many educators are training students to become technologically literate in use of the Internet. ETS has recently been piloting a standardized test for assessing student information literacy (Zeller). As students are trained to become more information literate, are they being trained to use a public sphere of resources or being prepared to become good consumers of controlled electronic content? The DMCA and CTEA are particular legislative devices aimed at creating the market for these good consumers. The first by locking down ownership rights; the second, as an extension of the lease on property our society allows to copyright owners. Consequently, many believe that recent trends, if allowed to come to fruition, “will transform the Internet into a gigantic pay-per-use vending machine” (Bollier *Silent Theft* 121). Imagine the effects this will have on literacy when much digital intellectual property is only available to those with the monetary resources to pay for use. An ever-widening information digital divide will exist not only in developing nations, but within our own society.

## CHAPTER 3

# OPENNESS: UNDERSTANDING FREE AND OPEN SOURCE SOFTWARE

During September 2003, IBM began promoting Linux—the open source operating system which runs many of the world’s Internet sites—with a series of television ads depicting a young boy receiving lessons from famous innovators and teachers (Cuneo). As *The Economic Times* reports,

In the IBM commercial, a blond, blue-eyed boy sits mum as a stream of celebrities ply him with information on everything from plumbing to the mysteries of the universe. The more knowledge the boy absorbs, the more it benefits humankind, it says. “Collecting data is only the first step toward wisdom, but sharing data is the first step toward community,” Harvard scholar Henry Louis Gates Jr advises the boy in the ad, recalling the ethos of the programming community behind Linux. (qtd. in Lowe, “The Future”)

The ad ends with a banner message across the screen, “Linux: The Future Is Open.”

Indeed, the future *is* open. While originally thought of as the domain of hacker hobbyists, the open source movement has continued to grow and is now perceived as a viable economic model for the production of software, particularly when it comes to Linux. Businesses will often cite a lower total cost of ownership, better security, and flexibility, benefits which are derived from the collaborative process that open source licensing allows. No better evidence of the growing popularity of Linux in business exists than the investment by IBM which eventually led to the advertisement above. IBM spent nearly \$1 billion on Linux in 2001 and claimed to recover much of that investment in one year (Shankland). In the years since, IBM has become a leader

within the open source community. Other important information technology companies have followed suit. Novell purchased German-based SUSE Linux in 2003 and has begun converting all of its applications—such as their popular Netware suite—over to Linux. As of 2004, Google used 10,000 Linux servers to run its search engine (Koenig). Even Microsoft’s CEO Steve Ballmer has noted Linux as a “serious competitor” (Judge).

Much like the young boy in the advertisement, Linux and the rest of the open source movement are fairly young and are still continuing to grow in popularity, and while Linux may be the poster child of the open source movement, some other extremely popular open source applications have gained mainstream acceptance both within the information technology industry and among regular Internet users. Many people might be surprised to know that the open source Apache web server—not a Microsoft product—is the most commonly used software for running Internet sites. In October 2005, Netcraft discovered that Apache runs 70% of the 75 million websites they surveyed. Mozilla Firefox, a standalone open source Internet browser, reached 100 million downloads in the same month, thanks to efforts by advocates and the perceived superiority of the application over Microsoft Internet Explorer. At the same time, some schools, governments, and not-for-profit organizations are now turning to an open source office productivity suite, OpenOffice, to avoid purchasing Microsoft Office initially or to exit Microsoft’s expensive upgrade cycle. The State of Massachusetts has recently adopted OpenDocument, an open standard XML-based format for office productivity documents used by OpenOffice, and rejected Microsoft’s XML standard. Since Microsoft has refused to support this format, it is likely that the State of Massachusetts and other organizations may soon switch to OpenOffice (Wheeler).

While each of the aforementioned applications are free to download, what is more important about the growing popularity of open source software is not the cost (or lack there of), but the message of community within Gates’ quote in IBM’s Linux advertisement. Open source programmers do not use intellectual property law to vigorously protect a software application’s commercial value for the financial gain of one or a few. Instead, they use copyright to provide a means of sharing ownership of the software so that anyone may use and modify it. As a consequence, large communities of software developers and individual users work together to create the most popular open source applications, such as those mentioned above. These

communities have evolved processes for software production which are highly collaborative and depend upon an open source license—a contract with the user included with the code—as a guarantee that all who contribute to an open source project have equal rights of use of the software produced.

In recent years as open source software has gained in popularity and become well-accepted as a means of software production, other grass roots movements have begun which make similar use of open source principles and likewise champion them as a counter to the enclosure of intellectual property. The more that government and commercial interests work to reduce the public commons, the more I believe that the use of open source principles in intellectual property production will continue to propagate. These efforts to shift understanding and use of intellectual property from ownership to openness are further evidence that the future is open, for the term “open” is used in many of the initiatives. Not only open source, but also open access, open content, open standards, open knowledge, open courseware, and open archives, each of which values the openness of intellectual property over control. Like open source, these groups also leverage the publishing and communication power of the web to enact change, drawing on what World Wide Web founder Tim Berners-Lee has described as the Web’s main purpose:

The basic ideas of the Web is that [of] an information space through which people can communicate, but communicate in a special way: communicate by sharing their knowledge in a pool. The idea was not just that it should be a big browsing medium. The idea was that everybody would be putting their ideas in, as well as taking them out.

Much of this may seem at first overly idealistic given that everyone in our society has been acculturated to view intellectual property as that which is to be owned, controlled. Writing teachers need to understand that open source offers the means to resist enclosure through the creation of that which cannot be enclosed, and that through open source principles, a counter-culture is emerging where collaboration is more valued than private ownership. Therefore, the following will help educators to evaluate the role of open source as a method of intellectual property production and better understand some of the principles of open source important to future chapters of this text. This text of this chapter contains an overview of open source

licensing and a similar movement to license creative works other than software, Creative Commons, and it explores open source communities and their collaborative processes.

## ***Free and Open Source Software Licensing***

At the heart of the principles behind open source are the open source licenses which grant users expansive rights reserved normally for the creator. In contrast, proprietary software vendors—such as Microsoft—make similar use of licenses to restrict greatly what a user may do with a piece of software. When programmers first create software, they do so using a computer language that produces human readable code. They then compile the code into a file of non-human readable binary numbers—just 0’s and 1’s. When proprietary software is released on the market, this file alone—without the original human readable source code—is then packaged and sold to consumers under an End User License Agreement (EULA). The user does not actually own the software. They own the right to use that copy under the conditions given in the EULA, conditions which are usually highly restrictive. In this context, copyright allows the copyright owner to exclude the user from certain uses of the software. While this may seem obvious, because the user is not given the source code nor the right to work with it, users cannot modify the application to fix a problem or add a new feature. Open source programmers commonly liken the absence of the source code to purchasing a car with the hood welded shut. The manufacturer has to make all maintenance and repairs rather than allowing the owner of a car to do the work herself.

On the other hand, open source programmers not only leave the hood of the car open, but the open source licenses included with the code specifically allow modifications of the application. How is this accomplished? Every open source software application includes an intellectual property license which gives the user the following rights:

- Allows the user to copy, modify, and even redistribute modified versions of the software.
- Includes the human readable source code for the software so that the user may, if she likes, modify the software.

Described as a “bill of rights for the computer user” (Perens 171), the open source license

principles specified above are codified in the Open Source Definition, a set of guidelines maintained by the Open Source Initiative (OSI). This non-profit corporation uses the guidelines to officially sanction a software license as open source.

In addition to the rights specified above, the Open Source Definition also requires that the license not discriminate against a particular group or use (e.g., licenses which do not allow commercial use are not open source). And unlike intellectual property contracts that academics often sign with publishers where copyright ownership is given away, authors of open source software still retain all of the rights given to them under copyright law. For example, a programmer or group of programmers who create an application and make it available under an open source license may also choose to sell the code separately without the license. That is, as long as all contributing authors agree to the sale.

A large segment of the open source community led by Richard Stallman and the Free Software Foundation feels that the Open Source Definition overly compromises the ideals of the community. These idealists see “distinct moral, social and civic value in the source code of software being legally available to anyone in perpetuity” (Bollier “Power of Openness” 3). They believe that users should have the rights of freedom to use to the software as set forth in the “The Free Software Definition”:

- “The freedom to run the program, for any purpose.”
- “The freedom to study how the program works, and adapt it to your needs. . . . Access to the source code is a precondition for this.”
- “The freedom to redistribute copies so you can help your neighbor.”
- “The freedom to improve the program, and release your improvements to the public, so that the whole community benefits. . . . Access to the source code is a precondition for this” (Free Software Foundation).

The more pragmatic Open Source Definition actually came after the Free Software Software Definition as part of an effort to move open source out of the fringe element of hacker culture into the mainstream. As Biella Coleman and Mako Hill describe, open source is a “practical articulation” of the Free Software Definition with “a different political and philosophical basis” which is important to particular groups interested in promoting many of the ideas of free software:



Recalibrating the broad meaning of freedom outlined in the [Free Software Definition] to align with their own philosophies and politics, these groups perceive [Free and Open Source Software (FOSS)] as a model of openness and collaboration particularly well suited to meet their own goals. In this process of re-adoption and translation, FOSS has become the corporate poster child for capitalist technology giants like IBM, the technological and philosophical weapon of anti-corporate activists, and a practical template for a nascent movement to create an intellectual “Commons” to balance the power of capital.

To recognize the different principles behind both open source and free software represent together, many in the open source community now use the terms Free and Open Source Software (FOSS) or Free/Libre/Open Source Software (FLOSS).

The genesis of the Open Source Definition provides further evidence of the difference in values between free software and open source. The Open Source Definition derives from a “policy document of the Debian GNU/Linux Distribution. Bruce Perens had previously created the Debian Free Software Guidelines from the Free Software Definition” (Perens 173). Around the time that talks were going on about Netscape’s release under an open source license, Bruce Perens met with Eric Raymond (Perens 173). While free software advocates in spirit themselves, Perens and Raymond decided to use the Debian Free Software Guidelines which omitted the word “freedom” in order to make the software more palatable to business. According to Perens, “Raymond was concerned that conservative business people were put off by Stallman’s freedom pitch. . . . [which] was stifling the development of Linux in the business world while it flourished in research” (Perens 173). Indeed, most people could imagine that businesses would find troubling the use of the term “free” in marketing software, even though the “free” in free software means “‘free’ as in ‘free speech,’ not as in ‘free beer’” (Free Software Foundation). In the end, the more general term “open source” was also chosen rather than using the Debian Free Software Guidelines so as not to align the term with any specific software project as Debian is a particular version of Linux (Perens 174).

As mentioned above, free software advocates are not satisfied with the Open Source Definition and the term open source. They prefer the term free software “because, once you have heard it refers to freedom rather than price, it calls to mind freedom. The word ‘open’ never does

that” (“The Free Software Definition”). Perens notes that Richard Stallman, founder of the Free Software Foundation and the most vocal advocate of free software, “took exception to the campaign’s lack of an emphasis on freedom, and the fact that as Open Source became more popular, his role in the genesis of free software, and that of his Free Software Foundation, were being ignored—he complained of being ‘written out of history’”(Perens 174). Personally, I believe that distancing open source software from Richard Stallman was instrumental in expanding the movement. Open source software should be made “maximally attractive to users” in order to stimulate widespread adoption (Weber 86). Stallman, as an idealist, is well known for his excessive zealotry, and his hard line rhetoric does much to rally support among the true believers, but little to promote the cause in the mainstream.

While Stallman may have lost his role as lead spokesperson, the open source movement owes much to him for his ideas about intellectual property, the software he has created, his establishment of the Free Software Foundation, and the practical solutions he came up with for licensing software. It is possible that open source and other derivative movements would not exist without Stallman’s contribution. For instance, the Open Source Initiative has certified fifty-eight different licenses, each with competing ideas about how to grant the right to copy, modify, and distribute. One of Stallman’s greatest contributions to the open source movement is one of those licenses: the GNU General Public License (GPL). The GPL and the Berkeley Software Distribution (BSD) license represent the two main disparate views on how software should be licensed and, historically, can be seen as two founding moments of the open source movement.

### **Berkeley Software Distribution License**

Like researchers and teachers, programmers within the academic community have a long tradition of sharing knowledge. In fact, the open source software movement began in direct response to the elimination of this practice among academic programmers, particularly due to AT&T’s licensing practices with UNIX software code during the 1980’s. AT&T had previously allowed Unix to be shared among educational institutions freely at a low cost. As David Bollier notes, up until the 1970’s and 1980’s, “a great deal of software development was a collaborative process carried out by academics and students. Software was seen as the shared product of a community, to which everyone freely contributed and benefited.” (“The Power of Openness” 3). These origins help to support Andrea Bonaccorsi and Cristina Rossi’s views that “open source

software is a form of intellectual gratification with an *intrinsic utility* similar to that of a scientific discovery” (1245). Like scientific research where “sharing results enables researchers both to improve their results through feedback from other members of the scientific community and to gain recognition and hence prestige for their work,” sharing the source code in open source software production has similar benefits and appeal (Bonaccorsi and Rossi 1245).

Perhaps one of the best examples of this sharing of software and collaboration enjoyed by academics and hackers prior to software’s commercialization is demonstrated by the work done at the University of California Berkeley in the 1970’s and 1980’s. Graduate students and faculty in the Berkeley Computer Science Department made many important improvements to UNIX, collaborated extensively with AT&T on UNIX’s development, and shared their work with other institutions. Starting in 1977, Berkeley decided to share that work more extensively, so they created and made available the Berkeley Software Distribution (BSD), a version of UNIX which contained Bell Labs UNIX code and Berkeley’s enhancements. In 1980, because of Berkeley’s strong contribution to UNIX’s development, the Defense Advanced Research Projects Agency (DARPA) awarded Berkeley a contract (Ceruzzi 282, DiBona 35). DARPA wanted networking support for their network of research institutions, and Berkeley developed implementations of the TCP/IP protocols which are at the foundation of Internet communication, enabling UNIX to become instrumental in the building of the modern Internet (Ceruzzi 282).

In the meantime, when AT&T split up into multiple companies as a result of antitrust judicial decisions, the division of AT&T which owned UNIX began to see its profit-making potential. By the time the networking features for DARPA were complete, it became clear to those working on UNIX at Berkeley that they would need to release the networking software and other Berkeley created applications completely separate from AT&T’s UNIX code. Vendors who wanted to integrate Berkeley software into other operating systems could then do so without paying AT&T for the expensive licensing fee for UNIX (DiBona 40). In 1989, Berkeley released Networking, Release 1, “the first freely-redistributable code from Berkeley” (DiBona 41). While Berkeley charged \$1000 for a version of the code, the software license with it, now known as the Berkeley Standard Distribution (BSD) license, allows anyone to redistribute original copies or modified versions of the code as long as “the copyright notices in the source file [are] left intact and . . . products that incorporated the code indicate in their documentation that the product

contained code from the University of California and its contributors” (DiBona 41). Eventually, Berkeley took all of the code which they had contributed to AT&T’s version of UNIX, created new code to replace the missing components owned by AT&T, and released a fully functional version of UNIX under the BSD license.

While the BSD license and its equivalents have enjoyed much popularity in the open source community, critics of the BSD license find it flawed because it is not much better than merely releasing the program into the public domain. Anyone legally obtaining BSD-licensed software is under no obligation to provide the same rights of copying, modification, and distribution that they received with their copy of the program. The software can thus be commercially exploited in the same manner as non-open source software.

### **The GNU General Public License**

In 1984, Richard Stallman left the MIT Artificial Intelligence Lab after working there for over twelve years. The MIT Artificial Intelligence Lab is well known for the hacker culture Steven Levy chronicles in *Hackers: Heroes of the Computer Revolution*. With the commercialization of software during the early 1980’s, Stallman, “the man who called himself the last true hacker” (Levy 415), found himself to be all alone at MIT in the remnant of a dying community of those who previously believed in the sharing of software. Stallman remarks that when faced with the choice of quitting computer science or going corporate himself, he turned in a more ambitious direction: he would create his own operating system that could be freely shared by all, and thus recreate the hacker community which was disappearing (Stallman “The GNU Operating System” 55). His operating system would be similar to UNIX, and thus he dubbed it GNU, a recursive acronym for “GNU is not UNIX” (Stallman “The GNU Operating System” 56). Stallman never completed a stable operating system, but two of the applications which he developed for the GNU—the EMACS editor and the GCC compiler—would later be used by Linus Torvalds as integral components for a complete Linux.

In order to distribute his software, Stallman looked at the licensing under which MIT released their X Windows system. Stallman felt the license to be too permissive. Like the BSD, anyone could obtain a copy of the software and then turn around and release a new version without giving the user the same freedoms. For software to be truly free, it would not only need to have the freedoms described in the Free Software Definition, but it would also have to be

always free (as in speech). The solution? Copyleft, the inversion of copyright:

Copyleft uses copyright law, but flips it over to serve the opposite of its usual purpose: instead of a means of privatizing software, it becomes a means of keeping software free.

The central idea of copyleft is that we give everyone permission to run the program, copy the program, modify the program, and distribute modified versions—but not permission to add restrictions of their own. Thus, the crucial freedoms that define “free software” are guaranteed to everyone who has a copy; they become inalienable rights. (Stallman “The GNU Operating System” 59)

The resulting GNU General Public License created by Stallman includes the same rights of copying, modification, and redistribution to the user as the BSD license, but it also contains one important restriction: that any redistribution must include the same license, a guarantee that all future derivative versions of the software are also licensed as copyleft.

Critics of the GPL often complain about copyleft, particularly the “viral” nature of the GPL. In a 2001 public statement about Shared Source, Microsoft’s attempt to capitalize on the popularity of open source with a non-open source initiative, Microsoft Senior Vice President Craig Mundie stated that

the GPL mandates that any software that incorporates source code already licensed under the GPL will itself become subject to the GPL. When the resulting software product is distributed, its creator must make the entire source code base freely available to everyone, at no additional charge. This viral aspect of the GPL poses a threat to the intellectual property of any organization making use of it. It also fundamentally undermines the independent commercial software sector because it effectively makes it impossible to distribute software on a basis where recipients pay for the product rather than just the cost of distribution.

Microsoft fears that GPL code will “infect” a software project, and many open source programmers from the BSD side agree with this position. In recognition of this, the Free Software Foundation has created the Lesser General Public License (LGPL) which is less infectious.

Despite the reasons cited above by Mundie, I suspect that for Microsoft, their greatest fear

of GPL software is that it can never be proprietized or controlled financially by them. If Microsoft's dominance becomes threatened by a competitor, they can buy a major share in the company. Just as with Apple and Corel, they then gain some degree of control. Or, if it's a superior product which satisfies their needs, they can buy it outright—as with MS-DOS's predecessor—modify it, and make it their own. These are the types of circumstances the GPL was designed for: to prevent any one person or entity from taking the code, modifying it, and then holding a monopoly over the rights of use of the new version. Andrea Ciffolilli describes this process as “hijacking” and points out that

when endeavors aiming to contribute to public domain knowledge assemblages are appropriated, outcomes may be spoiled, with possible negative consequences on the spontaneous provision of a public good.

This is particularly important when the software is part of a large community effort. Copyleft is a guarantee. With very large collaborative projects such as Linux (licensed under the GPL), individuals and corporations alike may contribute to the project knowing that if any other members of the project make ground-breaking advances in the software, once it is commercially released, anyone else may buy it and contribute the improvements back to the community. Thus there are no benefits from hoarding improvements in the long term. I believe this is one reason why many technology companies with a tradition of proprietary software production are now turning to building their products and services on Linux rather than open source UNIX variations which use the BSD license.

For these very same reasons, copyleft can be an ideal choice for other types of creative works since the work will remain a part of the public commons through all subsequent versions. As a consequence, copyleft licensed works benefit from increased copyright term limits. When a work enters the public domain after copyright expires, anyone may produce a derivative work and then copyright it. So if I create a work and release it as copyleft, the longer that copyright stays in effect, the longer the amount of time that any new derivative works of my creation must also be released as copyleft.

## ***Licensing Other Creative Works***

Repeated use of computer-related jargon such as programmer, source code, user, GPL, UNIX, etc., as well as the historical context, may make explanations such as above a little opaque to those not in information technology fields. In principle, the definition of open source can be applied to other creative works—alphanumeric texts, graphics, video, and audio—when just a few words are changed to the definition provided above:

Allow the owner of a copy of a work to copy, modify, and even redistribute modified versions of the work.

Because the source code is no longer important—when someone reads a book or views a photograph, they are already looking at the source of the work—in 1998, David Wiley coined the new term “open content” to apply to creative works other than software released under open source-like licenses, and he created the first license for use with such creative works. The Open Publication License (OPL) is very similar to the GNU GPL. It allows for copying, modification, and redistribution of modified creative works, and all redistributed copies must be licensed under the OPL.

Wiley developed the OPL while a graduate student in Instructional Psychology and Technology at Brigham Young University, and he included some specific qualifications to the OPL which represent an academic’s concern about attribution and versioning:

- Proper citation of the original author and/or the original publisher must be included with any derivative works.
- “The modified version must be labeled as such.”
- “The location of the original unmodified document must be identified.” (“Open Publication License”)

Given Wiley’s background in instructional technology, it should not be surprising that he advocated the OPL for creating educational materials for reasons built around the importance of sharing:

Although this idea may seem crazy to those entrenched in academia or higher education (or those who are just greedy), the idea of working hard and freely sharing the valuable results has been in practice for a long time, and is the essence

of the Internet ethic. (“Frequently Asked”)

Wiley’s license never did catch on, most likely because open source had not yet gained widespread acceptance and because the dangers of enclosure were not as clear as they are today. Wiley’s OPL was simply one of those ideas before its time, and Wiley has since encouraged people to use other open content licenses. Not long after in 2000, Richard Stallman released the GNU Free Documentation License (FDL), an open content license for computer documentation. This license has not been very successful either. Even though used by Wikipedia, a well-known free online encyclopedia, the FDL has not been widely used except among open source documentation projects, perhaps due to the many restrictions in the license specifically aimed at documentation formatting.

Within a few years of the release of Wiley’s OPL, Creative Commons offered a more complete solution to open content licensing, one that continues to grow in popularity today. In 2001, a notable group of intellectual property lawyers, activists, and scholars—including James Boyle, Eric Eldred, and Lawrence Lessig—founded Creative Commons as a not-for-profit organization dedicated to building “a layer of reasonable, flexible copyright in the face of increasingly restrictive default rules” (Creative Commons “About Us”). Creative Commons licensing differs from Wiley’s efforts in that they provide numerous ways for authors and creators to license their work. In order to make it easy for creators to apply a license, [creativecommons.org](http://creativecommons.org) has an interactive interface where creators choose from a set of options to construct a license. Once the creator has chosen the license, the website then provides the necessary text for licensing the work. The licensing notice contains the web address of a human readable deed, a version of the license in non-legalese which notices the rights the creator is granting. The deed itself contains a link to the legal version constructed by Creative Commons lawyers. Users are also given machine readable licensing information which may be inserted into HTML documents so that search engines and other Internet applications can easily determine that the text is Creative Commons licensed and which license is being used. The base Attribution license provided by Creative Commons—very much similar to the BSD—requires the user to attribute the original author and allows for modification and redistribution of the work. In using the web-based interface for license construction, the creator of a work may choose from the following options to restrict further how someone may use the work:



- *NonCommercial*. Restricts use of the work to only non-commercial purposes.
- *NoDerivs*. Only allows copying of the work. No modification.
- *ShareAlike*. A copyleft option which requires any redistributions of the work to also include the original license.

Since these options can be combined in various ways, a teacher who puts course materials on the Internet and wants to allow only the making of copies for non-commercial use would want the Attribution-NonCommercial-NoDerivs license. On the other hand, if the teacher wants to allow anyone to modify the work as long as they redistribute it under the same license, she would choose the Attribution-ShareAlike license.

In the years since the creation of this set of licenses, Creative Commons has created more options for licensing works and expanded the scope of the project in new directions:

- The Founders' Copyright, a program for releasing works back into the public domain within the twenty-eight year period originally designated by the founding fathers of the U. S..
- Sampling licenses for specifically allowing the remixing of a portion of the creator's song, photograph, or film in another work.
- The Science Commons, a subproject of Creative Commons which works to promote the use of Creative Commons licensing in academic publishing; develop better licensing practices for important, life saving research; and proactively resists the recent efforts by industry to copyright data in the U. S.
- The International Commons, a project for developing licenses which meet the copyright laws of other nations.

These advancements that Creative Commons has made in just a few short years are only one testament to the growing success of Creative Commons. There are many more:

- Creative Commons has stimulated various community web projects for sharing content. ccMixter provides remixed music free for download. Ourmedia works in conjunction with the Internet Archive to provide free storage and public access to video and audio files released into the public domain or licensed through Creative Commons.
- In November 2004, *Wired Magazine* shipped with their magazine a copy of the *Wired*

- CD*, a collection of Creative Commons licensed songs by artists including the Beastie Boys, David Byrne, Chuck D, and Danger Mouse; these songs are also freely available online for download (Goetz).
- Weblog scholar Clancy Ratliff notes an increasing trend among bloggers' licensing of their posts using Creative Commons licenses.
  - The BBC has established the Creative Archive project where video clips from BBC broadcasts and shows are made publicly available to UK residents (Dean). While Creative Archive texts do not use Creative Commons licenses, Creative Commons founder Lawrence Lessig advises on the project (Perry).
  - Lawrence Lessig and science fiction writer Cory Doctorow have released books on the Internet under Creative Commons licenses. Lessig's release of *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* under an Attribution-NonCommercial license has resulted in translated editions in Chinese, French, and Spanish, to name a few; multiple electronic document and ebook formats; and audio versions ("Derivatives/Remixes")
  - Open Access journals such as the Public Library of Science's (PloS) Biology and Medicine journals use the Creative Commons Attribution license.
  - MIT's OpenCourseWare project makes course materials from hundreds of MIT classes available online for anyone to use under a Creative Commons license.
  - Yahoo and Google now include advanced search options that allow search engine results to include only content containing a Creative Commons license.

### ***The Open Source Development Model***

Learning about open source involves more than just understanding open source licenses. The collaborative process by which open source software is constructed is equally groundbreaking and as important as the license that supports it. In fact, in *The Success of Open Source*, Steven Weber explains that "the essence of open source is not the software. It is the process by which software is created" (56). The licensing merely gives users rights. The fact that the open source product becomes available in a gift economy for everyone to use is not the end in

itself, but rather the means to that end: “open-source communities control the developmental dynamic of an evolving good. The ‘openness’ of open source, therefore, is more about open future than about access to currently existing source-code text.” (Tuomi 442)

Open source programmers believe in the superiority of this process over the more traditional methods of software production, such as a team of programmers working within a closed, corporate environment. These principles are behind the Open Source Initiative:

The basic idea behind open source is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing.

We in the open source community have learned that this rapid evolutionary process produces better software than the traditional closed model, in which only a very few programmers can see the source and everybody else must blindly use an opaque block of bits.

David Bollier notes that these principles enable a diverse set of users and organizations to develop a “common body of knowledge. . . . In this sense, open code software is not just a product, but a new kind of knowledge- and community-building infrastructure” (“Open Source Software” 7). Even Microsoft recognizes the benefits of this collaborative process as evident in a confidential Microsoft memorandum released to the public by Eric Raymond in 1998:

OSS poses a direct, short-term revenue and platform threat to Microsoft -- particularly in server space. Additionally, the intrinsic parallelism and free idea exchange in OSS has benefits that are not replicable with our current licensing model and therefore present a long term developer mindshare threat. (Oakes “MS: Open Source”)

While the majority of open source software is developed by individuals or small groups, ultimately all open source benefits from this “free exchange of ideas.” Many small open source projects are made publicly available through websites such as Freshmeat—an index of thousands of open source applications—and SourceForge—a website with a directory of open source projects which also contains project management tools. Eventually, any project which hopes to

take advantage of the open source method described by the Open Source Initiative must build a growing community and implement a version of a general set of best practices for software development known as the open source development model (OSDM).

In his seminal work on OSDM, “The Cathedral and the Bazaar,” Eric Raymond likens traditional software construction to “cathedral building,” where the programmer artisans and craftsmen carefully construct their product in a highly organized manner. Linux, on the other hand, as the new highly successful model for open source development, is more akin to a “bazaar,” a very messy method of software construction:

Linus Torvalds’s style of development—release early and often, delegate everything you can, be open to the point of promiscuity—came as a surprise. No quiet, reverent cathedral-building here—rather, the Linux community seemed to resemble a great babbling bazaar of differing agendas and approaches (aptly symbolized by the Linux archive sites, who’d take submissions from *anyone*) out of which a coherent and stable system could seemingly emerge only by a succession of miracles. (“The Cathedral and the Bazaar”)

Raymond goes on to describe many benefits of the bazaar model, including the observation that “Given enough eyeballs, all bugs are shallow” (“The Cathedral and the Bazaar”). In traditional proprietary software development, companies wait until the code is relatively stable before releasing any versions into the marketplace (Weber 77). Open source programmers believe that by making rough, middle, and nearly finished “drafts” of the open source software publicly available, more people can use it and participate in improving the code. As Weber further explains, this works for four main reasons:

- When a large number of people are using the software, they are using it in different ways. More bugs will “surface.”
- Open source communities have a process for reporting and “characterizing” bugs and making the need for fixing known to a large number of people
- The larger the number of people, the more likely that “the fix will be relatively obvious to someone.”
- A “fix can be communicated back and integrated efficiently into the core of a project.” (78)

The benefits of joining an open source project are more than just about fixing the code. Once a contribution is made to a project and accepted, others assist in maintaining and developing the application further. James Bessen notes that a majority “of the cost of software arises from testing, debugging and customer maintenance . . . not from the original design and coding” (7). Collaborating on an open source project distributes this cost among community members. Belief in the efficiency of this distributed process over doing the work oneself is at the core of OSDM. For instance, contributors are often drawn to an open source project in the first place because programmers want to avoid “reinventing the wheel” (Weber 74). Working with open source code gives the programmer a starting point for creating an application, and then contributing back to the project expands the repository of available code for later use (Weber 75). By contributing code back to the project, the programmer can also influence the future direction of the project. Once a new feature has been added, others who are interested in the feature may become more active in the community, shifting the focus of the project’s direction and accelerating development of the new feature. Finally, frequent contributions also have the benefit of demonstrating the programmer’s expertise, increasing “the contributor’s perceived merit,” giving her additional influence in overall development of the project (Gacek and Arief 36-37).

These more practical reasons for contributing an open source project are at odds with the common stereotype that all open source programmers are hobbyists merely in it for personal pleasure (Weber 130). The image of the lone programmer working in their spare time late at night merely for fun may be true for some programmers or in the early stage of a project’s growth. Linux began this way, for Linus Torvalds, the creator of Linux, was a Finnish graduate student who decided to produce his own version of UNIX to run on his personal computer. Undoubtedly, Linus’ story has helped to perpetuate the hobby stereotype, but another factor is the volunteer nature of open source: “The key element of the open source process, as an ideal type, is voluntary participation and voluntary selection of tasks” (62). The term “volunteers” may be misleading, implying that programmers on open source projects are like not-for-profit volunteers who work for altruistic reasons. This leads to the premise that one does volunteer work with open source merely because one wants to donate back to the community or to feel good about working for a specific cause.

For larger open source community projects, a better analogy would be comparing open

source community members to members of a commune, where everyone works together toward common goals. People belong to a commune when they feel that the community efforts can meet their individual needs. As Von Hippel and Von Krogh note, people contribute to projects “because they garner private benefits from doing so” (217). Raymond has already explained that “every good work of software starts by scratching a developer’s personal itch.” While that indeed may be one of the main reasons, there are a number of surveys which examine and suggest a more detailed range of motivational factors for contributing to open source software development (Hertel et al.; *Free/Libre and Open Source*; Lakhani et al.). These surveys indicate that programmers contribute to open source projects for many reasons such as

- a desire to produce non-proprietary software that is open
- identification with the the software community
- learning more about programming
- career advancement
- improvement of the software for personal or professional use
- the pleasure of coding and/or the opportunity for creativity

Weber adds that part of the pleasure of programming is aesthetically based (136). To an open source programmer, “code that represents an elegant solution to a complex problem is a thing of beauty that in the open source setting *can be shared with others*” (136). In proprietary software development where source code is kept protected within a company, only those within the company or maybe even the immediate development team responsible for the application may see the programmer’s accomplishments. This diminished audience for recognition of one’s efforts may result in career advancement, but it does not satisfy the artist’s desire to have one’s work appreciated in the same way that open source can.

As far as participation in aspects of a project other than coding, motivations may be different for constructing end user documentation or providing end user support. In my experience, many community members work on documentation to support their clients who use the software. Providing user support not only assists in finding usability problems with the application and documentation, but like documentation, it reduces barriers to entry for others to become community members, thus increasing community size which can lead to accelerated development of the application due to additional contributors.

## Organizational Structures and Interaction

Raymond's bazaar metaphor has created another common misconception: that open source communities are an amorphous, chaotic masses of developers whose contributions somehow magically coalesce into a usable product. Indeed, smaller projects may have no discernible "community structure" since they are made up of an individual or few developers, but larger, more active projects usually have some kind of "well-defined community," with various types of organizational structures (Gacek and Arief 36). For example, "an elite group of developers" leads the Apache web server project (Weber 92). Other projects may be led by one individual. Linus Torvalds is often called the "benevolent dictator" of the Linux community. As the founder and creator of Linux, Torvalds ultimately has the final say-so in the approval process for all new contributions to the project. Even benevolent dictators of large projects need other members who work directly beneath them with specific oversight functions. As the community grows, the task of approving all contributions simply becomes too much work. In the Linux community, other developers took on supporting roles as decision makers. For instance, I work regularly with the Drupal community which develops an open source content management system. The leader of the project, Dries Buytaert—who is also often called a benevolent dictator—is assisted by two experienced long time developers in the project who also may approve contributions to the code base. In service as the official Documentation Coordinator, I was responsible for managing and making decisions about documentation production. Other members are in charge of software security and the Drupal monthly newsletter.

Even realizing this, outsiders without experience with open source examining an open source community might still find the process of submission and approval "chaotic." Bonaccorsi and Rossi observe that "the spontaneous, decentralised functioning of the Open Source community represents a challenge to many current notions of co-ordination" (1244), making recognition of the collaborative process in open source development difficult for those with little experience with it. Furthermore, contrary to standard commercial project development, Jae Yun Moon and Lee Sproull point out in their study of Linux kernel development that Linux "is not an organizational project" that has been created by a project team or management group. Rather, Linux and other open source communities evolve workflow and approval process over time in response to community needs, and these processes must recognize that contributors enter and

leave the project as per their interests. Drupal developer Laura Scott offers one of the best analogies for understanding how an open source community requires a different organizational approach than with other types of projects:

With open source, the analogy is more like we're all cats. You cannot herd cats. You cannot order cats around, or teach cats tricks or even expect cats to obey. But cats can be great companions and very helpful. Cats can work together. Cats can even follow rules and do what's expected of them when it comes to the important things. To get a cat to cooperate, it takes a different tack, a different approach, and different expectations.

Therefore, the system of collaboration must also allow competing ideas to be expressed and given a chance to develop in a manner that allows for distributed participation. Communities often have some general or specific long term goals (i.e. mission statements or milestones), but in order for the community to allow members to pursue their particular interests, communities must provide opportunities for members to create their own initiatives. For example, in addition to using listservs and discussion forums for discussing aspects of the project, Drupal uses an issue tracking system that lets community members submit bug reports and fixes, offer code patches for implementing system enhancements, request new features, and document tasks being performed. When a member decides to work on some particular aspect of the project, they first review the outstanding issues looking for existing efforts. If the task they are interested in does not exist, they create an issue in the project management system so that others may follow along and/or join in on completing the task.

While different open source communities may use different project management tools depending on how the project has evolved and per their specific needs, most rely on some form of web-based project management and make extensive use of electronic communication. It is likely, too, that open source software movement would never have evolved without the Internet since electronic communication “made it possible for people anywhere to share their code and ideas” (Moon and Sproull). With Linux and Drupal, these tools are especially important because the communities have a large international base. Moreover, email, discussion forums, weblogs, instant messaging and other social software tools enable the peer review process integral to approval of project contributions. In my experience, discussions about submissions are quite



involved and often lengthy, a peer review process which is highly collaborative and very much focused on serious evaluation. They may involve debates over the necessity of the contribution, the submission's quality, alternative potential implementations, improvement in the code efficiency of the submission, and appropriateness of the contribution to community goals. Both those being evaluated and those doing the evaluation are invested in the process, for in addition to the quantity of contributions that someone might make to a community, the substance of a contribution and the participation in review is part of the vetting process for community members through which they gain status within the community, giving them more authority in subsequent discussions and ability to get their ideas accepted by the project.

Within the Drupal community in which I participate, community consensus is important and the approval process is often political. Since active members will typically have competing needs for developing the software, a solution to a particular problem may have to be revised numerous times to reach a compromise that gains enough community support for implementation. Once the community discusses and/or revises the contribution, leadership then evaluates the contribution, considers the opinions expressed in the discourse about the contribution, makes sure the submission fits with the overall focus of the project, and approves or denies the submission. Even when the submission is not approved, leadership may encourage the contributor to revise the submission in light of community suggestions and/or the overall goals of the community.

In any open source community, community leaders may make the final decisions, but they must diplomatically gain community support on a regular basis as part of the decision making process. David Bollier defines this as an essential principle of openness:

In this respect, open code software shares the strength and resiliency of the scientific method and Jeffersonian democracy. All procedures and outcomes are subject to the scrutiny of all. Openness allows error to be more rapidly identified and corrected. Innovation and improvement can be more readily embraced. Openness builds accountability into the process of change. (“The Power of Openness” 3)

Otherwise, if enough members of a community become dissatisfied with either the decisions of the leadership or the overall direction of community development, these members may split off

from the main project and form a separate community with a new agenda, workflow processes, and organizational structure. Open source communities refer to this as a “fork” since the code base is “forked” into two lines of development. Leaders always fear the possibility of a fork because open source succeeds through the collaboration of the many. Also, since a successful open source project depends on the ability of community members to work well together, even discussions of the possibility of a fork create controversy which affects the community’s ability to collaborate. To successfully optimize the open source development model, open source community leaders must recognize the importance of and implement to some degree a democratic approval process. In many ways, leadership’s role is to serve the community as manager or “moderator” of “coordination through talking” (Weber 168). While commercial proprietary projects may be the product of a project manager’s vision, open source leaders such as Torvalds or Buytaert can only be viewed as benevolent by the community when members feel their needs are met—or at least, being considered.

Despite the perceived negative effects of forks, they do happen and are sometimes necessary. For instance, the scope of the project may not be able to handle competing visions for long term development. An application may reach a point where goals that were originally possible to be accomplished together can no longer be supported in an expanded feature set. Or it may simply be much easier to start anew than to continue to revise and fix an an existing application (Weber 170). And, of course, forks do commonly occur because a project is poorly managed or too undemocratic. For example, a leader may also set unrealistic goals, thus invalidating “the efficacy of volunteer efforts” (Weber 168). While this may incur short term setbacks in production, in the long term, the new project which spins off may be more productive due to lessons learned about project management or through a more open development process. For example, the Apache web server was originally a project of the National Center for Supercomputing Application (NCSA). Apache forked from the work being done at NCSA “due to the closed nature of the NCSA, and the lack of adequate feedback loops” (Mulgan and Steinberg 53)

Finally, it is worth noting that sometimes the problems with community management that institute a fork are due to growing pains within a community. Much like any organization, as open source communities attract more members, they must evolve and adjust to fit the needs of

the community, reacting in a timely manner. Common issues are

- “technical problems”
- “information flow”
- “social problems”
- “better documentation”
- “usability improvements” (Lowe and Buytaert).

Solutions to these kinds of problems may involve formulating a different or more rigorous peer review process, changing the organizational structure of the project, creating community guidelines, or implementing additional or improved electronic communication tools or venues for discussion.

### ***Producing Other Creative Works***

Like open source licensing, the open source development model has application for the production of creative works other than software. Perhaps the best known example, and one being conducted on a Linux-like scale of participation, is Wikipedia, a free online encyclopedia. Begun in 2001, over one million Wikipedia articles—each using the GNU Free Documentation License—are available as of November 2005 in approximately 200 languages, with over 814,000 articles in the English language version alone. This is a significant increase over the 290,000 English language articles available in June 2004 (Lamb 41).

This “Free Encyclopedia that anyone can edit,” uses a wiki, a fairly new form of web publishing software which allows anyone visiting the site to create a new article or edit an existing page. To facilitate the collaborative process, wikis include versioning control, providing the user with the revision and authoring history of a document. Because of this easy editing and publishing tool, thousands of people across the globe have made contributions to Wikipedia. Wikipedia articles evolve and improve over time simply because they are accessible and editable by everyone who reads them: enthusiast-hobbyists, scholars, or anyone in the general public interested in the topic. This in fact is the basis of the peer review process for Wikipedia, Raymond’s “given enough eyeballs, all bugs are shallow” principle.

In what is described as “the same approach used by open-source software developers,” a

small portion of the Wikipedia community, “about 1,200 dedicated volunteers,” work to correct inaccuracies and maintain the quality of Wikipedia: “Every time someone adds a new article or changes an old one, the volunteers cull egregious errors, or delete false articles written by malicious vandals” (Bray). However, this process does not catch every bit of erroneous information—after all, there are over 800,000 articles in English alone—and while updated articles await for the review of the main Wikipedia contributors, they are still publicly available online and being used. Because accuracy of an encyclopedia is a major concern, in October 2005 *The Guardian* asked various experts to review Wikipedia entries; each expert found multiple problems with the entries they were asked to evaluate (“Can You”). In a similar critique on the *if:book* weblog, Kim White points out that Wikibooks, a Wikipedia-sponsored project to produce free online textbooks, contains uninspired, “poorly written” writing, and even an instance of plagiarism where text was taken directly from a printed textbook. In the discussion of White’s post, David Munger offers the solution that authors should be hired and paid to produce these free textbooks.

The problem with Munger’s suggestion is that it advocates moving towards a more exclusive authorship model away from an open, collaborative process by implying that the only way to produce a successful book is to pay a professional. In that conversation thread on *if:book* I proposed the following analysis and solution based on the open source development process. The problem with Wikipedia and Wikibooks is with the “anyone can edit” process which immediately updates the version available to the general public. As previously mentioned, ideas and changes in open source development go through peer review *before* they are included in the software. Open source projects also maintain both a development/unstable and a production/stable version of the software. Major experimentation and testing of new ideas occurs on the development version. At some point, community leadership calls for a feature freeze of the unstable version. Developers then only contribute fixes to make it more stable—no further experimentation. Once it has reached a level of quality that the community is satisfied with, this version then becomes the newest production version for everyone to use. From that point on, only bug fixes are applied to the production version, and the development community creates and begins experimentation on a new unstable version. This cycle of development is similar to how books go through different editions, only in an open source community, minutely improved

versions of both the publishable version and the new one under revision are continuously shared online. Wikipedia could similarly establish two versions of articles and implement the same type of process to provide a more accurate, stable version for regular Internet users.

This particular situation demonstrates why it is important to fully understand open source licensing, its principles, and the open source development model. It is otherwise too easy to arrive at solutions to problems in collaborative processes supported by open source licensing by looking to traditional intellectual property methods of production. And hopefully, writing teachers can now see that open source is not ultimately about software, but instead is about new ideas about intellectual property and new methods of collaboration made singularly possible by these views.

## CHAPTER 4

### THE SHIFT IN SCHOLARLY PUBLISHING TOWARD ACCESS

In the spring of 2002, Modern Language Association (MLA) President Stephen Greenblatt wrote an open letter to the MLA membership. The letter, which represents the position of Greenblatt and the other members of the MLA Executive Committee, warns of a scholarly publishing crisis. Faced with smaller budgetary support from institutions and reduced income from lessening sales, university academic presses, Greenblatt explains, can no longer provide the necessary publishing opportunities for an academy increasingly requiring that assistant professors publish one—if not two—scholarly monographs in order to receive tenure. Furthermore, Greenblatt points out that the problem is not germane to the humanities, but affects all disciplines, for “the core of the problem . . . is systemic, structural, and at base economic.” For the junior faculty member required to publish or perish, “academic presses simply cannot afford to publish their books” (Greenblatt).

Not all agree that the scholarly publishing crisis has negatively affected promotion and tenure. At their 2003 Summit on Scholarly Communication in the Social Science and the Humanities, the Committee on Institutional Collaboration (CIC), a consortium of the Big Ten schools plus the University of Chicago, noted that their member institutions did not yet notice any adverse effects on tenure and promotion (3). However, like most academics aware of the situation in academic publishing, the CIC did conclude that the “increasing costs of scientific journals, declining sales of university press publications, and a shift in library acquisitions from monographs to serials” are a serious problem (3).

Libraries, it would seem, are both victim and instrument in the crisis. The MLA’s Ad Hoc Committee on the Future of Scholarly Publishing reports that library sales, which have always accounted for a major portion of academic press purchases, are in serious decline, while spending

on scholarly journals has increased:

A study conducted by the Association of Research Libraries found that from 1986 to 1997, the unit cost of serials rose 169%, compared with 62% for booklength monographs. In response, research libraries' expenditures for serials rose 142%, while their expenditures on monographs rose a mere 30%. (173)

The accelerated increase in journal prices has been going on for decades. John Cox wrote in 2004 that journal prices had risen three thousand percent since 1970, "an annual average increase of 13 per cent."

As a solution to the lack of academic press publishing opportunities, both Greenblatt and the MLA Ad Hoc Committee recommend that books be deemphasized as a necessary requirement of tenure. Is this a long term viable solution? Reducing the importance of the monograph will lead to increases in attempts to publish in journals as the likely alternative for scholars proving their merit as junior faculty. From there, an escalation in journal publishing in the humanities will require more journals to provide the space for scholarly articles, accelerating the cascading effect whereby libraries spend more on journals while further reducing their purchase of books from academic presses. This all at a time when libraries are experiencing pressure to decrease spending. Unable to keep up with high inflationary prices, many institutions are being forced to reduce their holdings:

- The Association of Research Libraries reported in 2001 that "since 1986, research libraries have canceled an average 6% of their journal subscriptions. During the same timeframe, the average research library's expenditures for serials have increased 170%" (Kieltyka).
- In 2002, Appalachian State University, which was particularly hit hard by North Carolina's fiscal crisis, planned to "cancel subscriptions to 730 of the 3,400 journals it receives. . . . In the past year, the library bought 16,500 books, about 6,200 fewer than it bought a year earlier" (Carlson "A University Library").
- Because of cost prohibitive pricing schemes from Reed Elsevier, the leading commercial journal publisher, Cornell University dropped a bundled subscription of 930 journals from them in favor of much fewer, individually selected titles: "these titles represent less than 2 percent of the library's subscriptions[;] the contract with

Elsevier for the bundle amounted to more than 20 percent of the library's journal subscription expenditures" ("After Failed Negotiations").

Since it is unlikely that scholarly publishing will be deemphasized as a requirement for tenure at any time in the near future, either our system of publishing must seek some radical change or this crisis will become worse. During the past decade or so, many researchers in the sciences have arrived at what they feel is a solution, one with ideals associated with the open source movement. These academics believe in "open access," that the published product of scholarly research should not be owned but shared. Advocates of open access assert that the advancement of knowledge happens best under the following conditions:

- *Archives*. Academics must have the right to to make pre- or post-print versions of their peer-reviewed journal articles available in public "open archives."
- *Open access journals*. Because the Internet provides the most efficient means to widely distribute scholarly work, either new journals must be created or existing journal publishers must be convinced to make all journal articles freely available online in a digital format. This must happen within six months after publication, and publishers must grant users some rights to make copies and redistribute the text.

One of the premises of open access is that electronic publishing on the Internet significantly decreases publication costs. While certainly not all publishing costs are eliminated in this model, open access advocates object to the continued commodification of scholarly articles by commercial publishers beyond initial publication. Not only is the research of the academy being held hostage by these commercial entities through subscription or pay-per-view access to large electronic databases, clearly putting a large financial burden on libraries, but all of society would benefit from having access to the intellectual property production of the world's higher education institutions.

### ***Alleviating the Cost***

Some of the price growth factor in scholarly publishing results from the expansion of the academy and its increased levels of activity. John Cox observes that research has grown at a rate of "roughly 3 per cent a year, leading to increases in pages and issues published." Since these



additional costs reflect a healthy expansion in scholarship, they support the main mission of academic publishing: to disseminate academic work and provide a method for scholars to receive recognition for their accomplishments.

But there is another contributing factor to these cost increases which does not maximize that purpose: the commercial commodification of scholarly knowledge. In the last couple of decades through many mergers and acquisitions, a few large companies have acquired ownership of a major portion of journal publishing. These commercial publishers are not to be confused with the non-profit entities similar to academic presses who also produce serials. Professional organizations such as the MLA and the National Teachers of English (NCTE) exist to provide various service to their members and assist with the publishing of their members' works. In addition to journals by such professional organizations, smaller non-profit journals are often independently hosted by faculty at individual institutions and edited on a volunteer basis, typically at a very low cost.

These non-profit publishers differ from commercial publishers in one regard: their mission is to serve the academy. Commercial publishers, on the other hand, are primarily interested in how much money they can make for their stockholders, a goal in conflict with the academy's. Academic publishing is merely a means to that end, and it should be obvious that their business strategies are representative of the enclosure of intellectual property discussed in Chapter 2. For instance, the Association for Research Libraries notes that "between 1985 and 2001, the average real subscription prices to libraries for the top ten most-cited nonprofit journals increased by about 80%, while the top ten commercial journals increased 379%" (Kieltyka). Journal subscription prices are not the only issue. Not only do they charge more than their non-profit counterparts, but academics typically have to assign them copyright in order to be published. This "transfer of ownership" turns scholarly work into an asset for the publisher whereby "online journal archives accessed through the publisher have become a revenue source through pay-per-view transaction systems, and archiving licensing" (Willinsky). Academic institutions and public grant money pay faculty members to do research, then when that research is written up and published, they must pay commercial publishers for access to the work, and in doing so, pay commercial publishers enough extra to grant them a nice profit margin. This publishing model, as Simon Culkin colorfully depicts, is a lucrative arrangement for publishers:

How's this for a winning publishing formula? A university funds scientific research; the research is turned into a paper by an author, who pays a colour illustration and reprint charge—say, £1,000—and surrenders the copyright for the privilege of publishing his findings in a specialised journal. Peers review the work for free, then the publisher prints the article—and sells it back for a hefty fee to the institution where the work was carried out in the first place.

Who can really blame commercial publishers as long as academics continue such a one-sided business deal with them? Maybe the public should blame both. Academics have allowed this arrangement to go on despite the fact that much of their work is publicly funded research. Patrick Brown notes that the U. S. Government “spends more than \$50 billion a year on nonclassified research”; yet, the scholarship for this research is not publicly available. When the National Institutes of Health proposed that results of research funded by them “be made freely available online. . . . Reed Elsevier, John Wiley & Sons Inc. and several nonprofit publishers . . . argued such a move would hurt their business” (Wysocki). Notably, Reed Elsevier has spent \$12.5 million lobbying the U. S. Congress since 1998 (Baldwin and Stroman). As a result of this pressure, the NIH backed down and made the proposed policy a “request” instead of a requirement (Suber “SPARC”).

Archives such as the one created by the NIH are important, for researchers are allowing commercial publishers to hold articles for ransom in near perpetuity by charging expensive fees for access to their private electronic archives—this all in a present day where electronic distribution has made it cheaper than ever before to distribute articles. Since publishers know that scholars need access to the most important and relevant research in their fields, their pricing schemes depend much more on each customer's willingness (and capacity) to pay, than on the production prices. Thus, it is today more or less as expensive for university libraries and individual subscribers to access this material over the Internet as before in paper format. (Björk)

Prior to the current commercialization of journal publishing, libraries evaluated their serial subscriptions and were able to build their own collection of holdings based on their judgment of which contain the most valuable scholarship. Recent escalating journal costs have forced libraries not only to decrease their journal holdings, but have also reduced their control

over the selection of their journal collections. Publishers such as Reed Elsevier negotiate large contracts which give very little cost break for those libraries who want to carry only a portion of their holdings (Foster “Second Thoughts”). I suspect that as publishers convert more of their legacy journal editions to electronic archives and libraries invest in electronic subscription, libraries will continue to decrease their physical holdings for “the cost of the physical infrastructure and archive preservation can be offset by relying on digital databases instead” (Lowe “Copyright”). In the future, libraries will own very few print runs and will “become mere ‘knowledge pumps,’ and instead of opening up a free, public space for readers, they [will] find themselves saddled with the unlikely task of policing access to ‘legitimate users’” (Guedon ).

In creating subscription contracts which place the bulk of their holdings with an institution, companies like Elsevier guarantee that their journals are available at the expense of other journals, overly privileging the value of some of their journals simply because they are part of the purchase package. Furthermore, “because they add and delete journal titles from journal indexes, publishers have enormous power to shape the appearance and availability of research” (Hess and Ostrom). Since their articles are easily available to academics in the institution, their works are likely to be more frequently cited and used in scholarly publications, arbitrarily raising the importance of the scholarship which they provide (Guedon). This despite the fact that some of the journals would not be available if librarians were building their collection through selection on an individual basis. As a consequence, the more important the scholarship in one publisher’s holdings becomes, the better bargaining position the publisher has in this already inequitable arrangement with libraries, not to mention the reduced control librarians have in building their collections.

Rather than continuing to accept the burden put on education by the commercial publishing model, academics should adopt the perspective of open access advocates who see publishers as much “like a midwife. . . . They are paid for their role, and at the end of the day, they give the baby back to the parents” (qtd. in Karow). At the very least, academics should consider Krzysztof Apt’s advice that academics need to work with non-profit publishers (26). Apt points out that academics may not need publishers at all to produce electronic journals, that the costs are very low; for example, *Documenta Mathematica*, a journal run by scholars which only costs “\$210 per year” (26-27):

So, not surprisingly, Rehmann wrote to me: “Our journal was never sponsored by anybody. Needless to say, the journal is hosted on my PC, which I have anyway.”

In some instances, editorial boards from well-known journals have broken away from commercial publishers to form new journals. Peter Suber lists fourteen separate instances where journal editors have left for a “friendlier publisher. . . . in order to protest its high subscription price or audience-limiting access rules” (“Lists Related to”). For example, Stanford University Professor Donald Knuth, well known senior researcher in the field of computer science, issued an open letter in October of 2003 addressed to the editorial board of the *Journal of Algorithms*. As a long term co-editor and founder of the journal, Knuth points out that library subscription prices for the journal, when adjusted for inflation, had remained roughly constant between \$0.25 to \$0.30 per page from 1980 to 1999 (2). Since that time, the cost has risen to approximately \$0.50 page (Knuth 2). This doubling of cost is indicative of commercial publishers while non-profit publishers have generally kept their costs the same (Knuth 2). Knuth points out that this page cost should never have risen, but even have dropped because

the publishing environment has changed dramatically since 1980. In those days a publisher took care of keyboarding and proofreading, which were quite expensive, especially when mathematics was involved. Only a few printing establishments in the world were able to do a good job of that, and we gladly paid for the privilege of having our work presented well. But now, authors have taken over most of that work, and software has also ameliorated the other aspects of a publisher’s task. (2)

Upon learning of Reed Elsevier’s purchase of Harcourt Brace in 2001 and thus their acquisition of *Journal of Algorithms*, Knuth sent a “strong letter” to Reed Elsevier protesting escalating subscription prices; his concerns were ignored by the publisher (2). For the reasons listed here and in Knuth’s letter, the editorial board of *Journal of Algorithms* announced in February of 2005 their intention to leave the journal and establish a new one, *ACM Transactions on Algorithm*.

Should composition teachers be similarly concerned about journal subscription prices? At the 2005 Computers and Writing Conference Town Hall session “The Politics and Prospects of Publishing in Computers and Writing,” I suggested that the editors of *Computers and Composition*, a journal also owned by Reed Elsevier, consider a similar declaration of independence. One of the main points by the editors of *Computers and Composition* at that Town

Hall was that the prestige of the publisher is too important for legitimizing what is a fairly recent scholarly field. Certainly, publishers are playing a role in this legitimization process. In explaining why the Association for Computing Machinery (ACM)—probably the leading professional organization in information technology—should support the creation of more non-profit journals under its name, Apt argues that

we were brought up in the tradition of accepting the publisher as a guarantor of quality. In reality the quality is provided by us, the researchers, by means of the peer review process organized by us, for us. But even if we know it, and we know it by now, we still need the publisher for its trademark. (26)

While I would not disagree with the benefits for ethos of those journals put out by professional organizations such as the ACM, MLA, or CCCC, the true prestige for journals owned by commercial publishers comes from their editorial boards and the quality of the scholarship published within them, not the publisher themselves. This is particularly true for both *Journal of Algorithms* and *Computers and Composition* where the editors include leading scholars in the particular area focused on by the journal. Commercial publishers such as Reed Elsevier do little more than bill subscribers, provide print and electronic versions, distribute the subscriptions, and create and maintain archives, purely functional roles. Most of these services can now be handled by individual journals with readily available Internet technology. Print on demand services can provide the means for individual journals to distribute print editions to their subscribers. Beyond these functions offered by commercial publishers which lend no value to the quality of the scholarship, what prestige does exist results from their ability to amass collections of journals. If scholars allow that role to be important for the legitimization of scholarship, then scholars are put in the position of being further held hostage to increases in subscription prices as these corporations work to increase their acquisitions so that they can become more marketable.

It is worth mentioning that while commercial publishers seek justifications for why their rates are so costly for their subscribers, many open access publishers in the sciences have moved to a financial model where authors pay some of the publishing costs, thus reducing the price of the journals below actual cost of production. The Public Library of Science (PloS) explains that

one-time publication charges will allow us to make all works that appear in our journals freely available to everyone for viewing, full-text searching, and

downloading from the moment of publication. (PloS “Publishing Model”)  
Since most research in the sciences requires some kind of outside funding, researchers would include publishing costs for the results of their research as a necessary expense item in grant requests. PloS positions publishing as an integral part of the research process, a justifiable cost.

### ***Making Scholarly Articles Publicly Available***

Resisting the commercialization of scholarly publishing is an obvious priority for open access and largely responsible for the growth in this grass roots movement. First and foremost, though, open access is about making scholarly knowledge accessible to everyone via the Internet. In fact, the beginnings of the open access movement can be traced back to the Los Alamos Physics Archive, known as arXiv.org, “the first, free, open archive of the refereed literature” (Harnad “E-Knowledge”). Founded by Paul Ginsparg in 1991, when Ginsparg moved the archive to Cornell University in 2001, it contained over 170,000 papers “in physics, mathematics and computer science, with almost 3,000 new submissions coming in each month” (Cornell News). These texts are not limited to peer-reviewed journal articles, but the shared writings in many forms of scientist from around the world.

While arXiv.org taught scientists the value of making their knowledge available online, it was not until the fall of 2000 that a group of scientists formed the Public Library of Science (PloS) and distributed an open letter which would directly address the problem with scholarly journal publishing. The PloS letter asked for other academics to pledge that, beginning in September 2001, they would

publish in, edit or review for, and personally subscribe to only those scholarly and scientific journals that have agreed to grant unrestricted free distribution rights to any and all original research reports that they have published, through PubMed Central and similar online public resources, within 6 months of their initial publication date. (PloS)

Julia Karow notes that by April 2001, over 15,000 scientists “had signed the letter, among them several Nobel laureates.” Since, PloS has expanded their mission and launched a number of peer-reviewed, open access scientific journals.

The support for open access has continued to grow with other signed declarations and initiatives emerging over the past several years: the Budapest Open Access Initiative (BOAI) (2001), the Bethesda Statement on Open Access Publishing (2003), and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). In recognition of the importance of open access, beginning in 2002, the Association of Research Libraries's Scholarly Publishing and Academic Coalition (SPARC) began "putting more and more emphasis on promoting and supporting initiatives that strive towards Open Access" and less emphasis on their support of experimentation with other, alternative modes of publishing (Savenije).

While these initiatives do directly address the current scholarly publishing crisis, it is important to consider this open source shift in thinking towards ubiquitous access and recognize the many benefits. Scholars who publish with open access will likely see more treatment of their work in other articles. Research on publishing in the fields of "computer science, astronomy, and physics" reveal that an article made available as open access is significantly more likely to be cited in future works (Harnad and Brody). In a study of "119,924 conference articles in computer science and related disciplines," Steve Lawrence found that articles which were freely available online were cited in other articles three times more than articles which were not. Lawrence concludes that is because of their easy access. For academics who are evaluated for tenure and promotion based upon citation indexes, publishing in a prestigious open access journal will be more beneficial to a scholar than publishing in a traditional one with similar reputation.

The open access principle of accessibility to research can also influence the way in which scholarly articles interact or connect with each other. Tomlins points out that many journals transported to the web are "merely 'fossilized words' on the screen." A richer use of web-based journal archives would be to provide hyperlinks to items referenced in a text, include supplementary annotations, and even reader comments. What develops is a text which is "a living, vibrant entity, in which the linked back issues become a required part of every issue" (Tomlins 15). The *Astrophysical Journal* is one example of a serial which has been

transformed by retrospective HTML tagging, with supplementary databases of twenty years of abstracts and back issues of most major journals in astronomy, with both backward links (references) and forward links (citations) carried with each article, plus access to databases of astronomical information. (Tomlins 15)

A similar system is being created with *CCC Online* where *CCC* Associate Editor Colin Brooke has spearheaded the development of an online space with publicly available *CCC* article abstracts and bibliographies. Reference lists which refer to other *CCC* articles directly link to the abstract for that article. Articles are categorized, with each category tag listed with the abstract acting as a link to other *CCC* articles in the same category. Even supplementary media files are included. In place of an abstract for Douglas Hesse's 2005 CCCC Chair's Address, "Who Owns Writing," is a video recording of the actual address itself. All of these features demonstrate that *CCC Online* is undoubtedly a groundbreaking use of technology by a composition journal; yet, *CCC* is not an open access journal, and membership subscription is required to access the individual articles. Moreover, use of hypertext links is incestuous. Only *CCC* articles in reference lists have live links. Other web-based resources on the site which happen to be publicly available will contain the URL in a proper citation format but are not live, leaving it up to users to copy and paste the web address for non-*CCC* webtexts into their browser address bar.

Without public access to articles, *CCC Online* is not much more than an extension of services also offered by commercial journal publishers. Reed Elsevier's Science Direct provides an online searchable index of their holdings with public access to abstracts tagged with keywords and reference lists. These provide convenience for researchers, but once again, access to full-text articles requires subscription membership. On the other hand, researchers can use Google Scholar to access academic texts publicly available online as well obtain results from full-text searches of print books indexed by Google as part of the Google Books (previously Google Print) project. To facilitate better access to both open access journals and other open access archives, the Open Archives Initiative (OAI) has created standards for embedding metadata in open access articles which will make it much easier for search engines to harvest and index open access texts. One day in the future, libraries will be able to use this metadata to search out and create their own archives of open access databases, once again turning the management of journal holdings back over to librarians. Academics, too, may assist with maintaining archives of open access articles. Researchers in a particular discipline could share their personal repository of articles with colleagues using peer-to-peer technology.

While not an open access initiative, Google Books is an important part of this conversation. With the Internet, academics have the opportunity to make "the treasures that have



been locked up in the special collections of our great libraries” available to the rest of the world, “materials that have been historically been the privileged preserve of a few advanced scholars” (qtd. in Race 14). In cooperation with major libraries such as Stanford, Harvard, the University of Michigan, Oxford and the New York Public Library, Google is scanning in millions of their book holdings and using them to create a searchable, full-text index. Anyone can search the collections of Google Books using Google’s familiar interface, with search returns yielding a snippet of the original text. Researchers in member institutions who have rights over the scanned text can then access the full-text version. Should Google Books survive the legal battle with publishers over their right to scan and index books—commercial publishers feel this is a violation of fair use, although notably university presses and other academic-run publishers seem to like Google Books—I could imagine that in the future, Google Books’ mission could be expanded to include print journal editions. With Google Books providing search capabilities, academics could then use interlibrary loan to access the articles they need if not carried by their institution.

Despite these possibilities, interlibrary loan is not a reasonable alternative for public access to scholarly texts. Would scholars prefer to order articles from interlibrary loan services and wait for their copies to be sent, or receive them immediately by downloading them from the Internet (BioMed Central “(Mis)Leading”)? BioMed Central points out that

to say that being able to go to the library and request an interlibrary loan is a substitute for having Open Access to research articles online is rather like saying that carrier pigeon is a substitute for the Internet. Yes—both can convey information, but attempting to watch a live video stream with data delivered by carrier pigeon would be a frustrating business. (“(Mis)Leading”)

Even if scholars are themselves satisfied with interlibrary loan access to journal articles, the regular public would be unlikely to take the time to visit their public library and make the request (BioMed Central “(Mis)Leading”). This is one of the main considerations of open access. The print model of journal distribution has always made scholarly research fairly inaccessible to most of society since since it resides mostly in the libraries of higher education institutions. More ubiquitous access to scholarship can only assist with the production of knowledge and, in the case of the biological sciences, even save lives because the latest biomedical knowledge is publicly available to more health care workers. Moreover, the general public may make use of

the knowledge as well. A story posted to Google Blog tells of a father who was able to prevent an unnecessary, extremely dangerous medical procedure on his two week old newborn son (Wickre). The baby boy, who was ill, had been taken to the emergency room. The examining doctor found that the child had an extremely low level of hemoglobin. When the doctor recommended a risky procedure, the father quickly searched Google using his mobile phone and found an open access article which indicated that the low hemoglobin, while rare, would likely reverse itself.

This example illustrates another value. When scholarly knowledge is freely available online, it is accessible by anyone with Internet access and basic Internet search skills. Will open access create the setting for the next self-educated Kenneth Burke? Open access publishing coupled with MIT's Open Courseware Initiatives or Stanford University's podcast lectures offer self-education opportunities. Consider situations such as the following:

- A writing teacher at in secondary school wants to change the school's curriculum to a more progressive way of teaching writing. Open access would provide her with the necessary knowledge to implement a change and the scholarly opinions to support the change to administrators.
- A union teamster interested in postmodernism and poststructuralism is unable to find any resources in his local public library.

While educators can easily imagine the benefit of the first scenario, the second fictional sounding one is a real life example. In the 1990's, John Unsworth, editor of the online journal *Postmodern Culture*, received a letter from a teamster thanking him for access to scholarship on postmodernism and postructuralism for the very reason mentioned above (Alonso et al. 42). Research in the humanities is an important part of the knowledge of our culture. At a time when people are questioning the value of English departments—particularly literary studies (Soltan)—perhaps Unsworth is right: the secret to promoting the humanities is to make “it more readily available” online (Alonso et al. 43).

Even more important, are their moral and ethical implications connected with our obligation to consider the needs of a global society? As Paul Attewell points out, there are two digital divides: one which focuses on access to technology, and the other on how computers are used when available. I would extend this division to include a third barrier, one being created by

unequal access to information available online. Painfully aware that digital and communication technologies are continuing to accentuate this difference in access, U. N. Secretary-General Kofi Annan insists that

the new information and communications technologies are among the driving forces of globalization. They are bringing people together, and bringing decision makers unprecedented new tools for development. At the same time, however, the gap between information “haves” and “have-nots” is widening, and there is a real danger that the world’s poor will be excluded from the emerging knowledge-based global economy.

In an effort to reduce the this gap, the United Nations’ World Summit on the Information Society (WSIS) formally declared in December of 2003 the importance of building an information society inclusive of all people and nations through shared knowledge. The “Declaration of Principles” which came out of the summit continually stresses the importance of providing access to all, with even specific mention of “open access” as a key principle: “We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information, including open access initiatives for scientific publishing” (4). To further these goals, Helen Doyle recommends that “international research projects funded by UN agencies should” follow the WSIS Declaration of Principles and “include funds earmarked for open-access publication.”

To address such inequities on a broader scale, the Budapest Open Access Initiative (BOAI), which grew out of a meeting of the Open Society Institute in December of 2001, advocates that all peer-reviewed journals be made publicly accessible because

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.

So far, over 3900 individuals and more than 330 organizations have signed the initiative.

### ***The Importance of Licensing***

At the core of open access principles is the notion that anyone must be able to not only read journals articles, but also the permission to copy and redistribute them. Currently, composition studies has electronic journals (e.g., *Kairos*, *Computers and Composition Online*, *The Writing Instructor*, *K.B. Journal*, *Currents in Electronic Literacy*), and some of our print journals have public Internet archives (e.g., *WPA Journal*, *Rhetoric Review*, *The Writing Center Journal*), but publishing with Creative Commons or similar licenses is very new. In March of 2004, the WAC Clearinghouse's *Across the Disciplines* published my article, "Copyright, Access and Digital Texts" under a Creative Commons Attribution-ShareAlike license. Clancy Ratliff was also successful later that year in publishing "Between Work and Play: Blogging and Community Knowledge-Making" using an Attribution-ShareAlike license in *Lore: An E-Journal for Teachers of Writing*. In October and November of that same year, through the advocacy of the *Kairosnews* editorial staff, *Kairos*, *Computers and Composition Online*, and *The Writing Instructor (TWI)* all stated their willingness to allow authors to choose to publish in their journals with Creative Commons licenses. Not long after, Laurie Taylor and Brendan Riley updated their "Open Source and Academia" to include an Attribution-ShareAlike license.

It is only more recently, though, that any journals in the field have adopted a clear open access policy. In the spring of 2005, *K. B. Journal* published their first issue with all articles licensed under the Attribution-ShareAlike license. Similarly, David Blakesley, Consulting Editor on the *K. B. Journal* and Editor and Publisher of *TWI*, had discussed with me his intention to make *TWI* an open access journal as well.

Notably, the Attribution-ShareAlike used by *K. B. Journal*, myself, Ratliff, and Taylor and Riley permits the creation of derivative works. While not a requirement in PloS's initial letter which sparked the open access movement in journal publishing nor the later BOAI (2001), the more recent Bethesda Statement (2003) and Berlin Declaration (2003) have expanded the open access requirements to include the right to modify and distribute derivatives works. The idea of derivative works of scholarship may trouble some academics, an issue raised at the "Can We Publish Essays the Way Open Source Programmers Publish Code" roundtable during the 2002 Computers and Writing Conference. Beyond the obvious reason that allowing derivative works confounds the sense of control normally given authors under copyright, there are certainly the fears that another may take a text and rework it inappropriately, potentially affecting the

reputation of the original scholar. From the perspective of one already comfortable with the notion of sharing via copyleft style licenses, let me offer that these imagined threats seem minimal compared to potential benefits. Allowing derivative works would allow others to extend a researcher's work in useful ways such as

- translations
- audio versions for the visually impaired
- conversions to other file formats (important for long term archiving)
- changes in document design or layout
- inclusion of additional metadata tags or other descriptive data
- annotated versions

### ***Scholarship Doesn't Need to Pay***

Cathy Davidson gets it half right when she says, “The bottom line is that scholarly publishing isn't financially feasible as a business model—never was, never was intended to be, and should not be. *If scholarship paid, we wouldn't need university presses.*” Yes. In any reasonable economic model, scholarship is not a profitable venture. Only when the academy, as the producers and main consumers of research publishing, illogically allows an unnecessary middleman to profit. Perhaps educators will soon take a stand to discontinue this ludicrous financial arrangement and use Internet technology to distribute its wealth of knowledge to everyone at a very low cost.

## CHAPTER 5

# OPEN SOURCE, COLLABORATIVE LEARNING, AND ACADEMIC PUBLISHING

Previous chapters demonstrate that intellectual property will likely be further commodified and controlled through a progressive and aggressive system of enclosure with many potential adverse effects on society. On the other hand, open source and open source style of thinking promote the opposite view—the sharing of intellectual property—and open source development began in direct response to the proprietization of software. Open access has similarly gained popularity due to the commercialization of journal publishing. These two movements seemingly offer one solution to Michael Day’s question,

Could the collaborative communities forming on the Internet help us to get past the objectification and commoditization of the words and thoughts so prevalent now in the publishing and legal arenas? (251)

Resisting oppressive intellectual property laws and practices is certainly one good reason—and a popular one—for embracing open source principles. It is equally important to recognize that the culture of sharing with an emphasis on near ubiquitous access and the collaborative production processes facilitated by openness represent a different knowledge making model with specific merits, regardless of the state of intellectual property in general. Indeed, Tim O’Reilly suggests that open source represents a paradigm shift for business because it shifts the traditional view of “software as commodity” toward service, makes use of “network-enabled collaboration” where people can connect to each other based on their interests rather than being limited by their physical proximity to each other, and expands the view of software from just an artifact to a process (“Open Source Paradigm Shift”).

Open source can similarly be a key element in a paradigm shift in composition, one that had already begun with the attention the field has given to collaboration and social constructionism in the last twenty years or so as represented in seminal works such as Kenneth Bruffee's "Collaborative Learning and the 'Conversation of Mankind'" and Lisa Ede and Andrea Lunsford's *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*. Whether or not this is truly a paradigm shift—I do not want to get into the debate of what is and what is not a paradigm shift here—open source has much to offer. The open source development model (OSDM) and other "commons-based peer production" processes (a term first used by Yochai Benkler to describe how large numbers of people come together in open source and other similar projects, such as Wikipedia, to produce a shared good) are themselves highly "social, collaborative, and constructive" methods of intellectual property production which provide new examples and ways of thinking about collaboration and the way knowledge is constructed, used, and owned. Particularly in the examples of Linux and Apache, open source development has proven "that a large and complex system of software code can be built, maintained, developed, and extended in a nonproprietary setting in which many developers work in a highly parallel, relatively unstructured way" (Weber 2). Open source development can further inform our understanding of mega multi-authored document collaboration in a Web-enabled world. The development "process is a real-world, researchable example of a community and a knowledge production process that has been fundamentally changed, or created in significant ways, by Internet technology" (Weber 2).

Recent research by writing teachers that uses open source to shape pedagogy provides direct relevance to the teaching of writing. Brenton Faber describes how open source suggests an "educational process [that] would emphasize collaborative problem based learning, working through drafts, risk taking, mentoring, user testing, releasing early and often, developing in collaboration with users, and rewarding and building from failure" (31). In "Open Source Academia," Laurie Taylor and Brendan Riley show how open source can inform classroom practices for writing as a process and social constructionist thinking including peer review and collaboration. Examining the production process of open source can provide "both a metaphor and a method" which provides "students with a practical way to collaborate." Taylor and Riley suggest that, like Greg Ulmer's "garage band metaphor" of writing, open source production

strategies avoid the divide and conquer, or “assembly line,” method of collaboration which students typically gravitate toward.

Furthermore, open source relates to service learning and could be used to structure projects which last across semesters to produce lasting document resources for use by others (Taylor and Riley; Faber). Such projects should make use of “full community peer review” by connecting class projects “to a larger community” outside of the classroom (Taylor and Riley). As one such example of this, in Fall 2004, Purdue University’s Professional Writing Program began the Open Source Development and Documentation Project (OSDDP), a program-wide, Internet community-based, service learning project in which students

- write about open source or topics related to open source
- participate in construction of documents about the project itself (i.e. press releases, project guidelines, site user documentation, etc.)
- produce documentation for open source projects
- work with clients regarding implementation and use of open source.

Because all documents on OSDDP are Creative Commons licensed, students can—and often do—revise documents created by student groups from previous semesters. Students find as difficult the process of evaluating an existing document, re-researching the topic, and proposing and making changes as they do creating such a document from scratch. Unlike many other writing assignments students are typically exposed to in the writing classroom, this experience replicates a unique writing situation students will likely encounter in their careers. As professionals in the workplace, they may have to rework and revise existing reports, marketing materials, mission statements, policies, and other organizational guidelines. They may be asked to rewrite and polish a rough draft submitted by a fellow employee who has been pulled onto another project, or asked to update instructional materials for operating machinery or computer software.

Taylor and Riley observe that open source provides an opportunity for students to critically evaluate attribution, plagiarism, and “the social and ethical implications that come with any technological apparatus.” I have also found—and have talked to other Purdue teachers with similar experiences—that working with OSDDP makes ownership, attribution, fair use, and other intellectual property topics a relevant and necessary component of class discussions. As students gain understanding of open source and the reasons for using Creative Commons licensing with



OSDDP documents, they use open source as a lens to analyze and critique intellectual property and our society's default context for understanding it as "property." During these conversations, students grapple with the idea of balance between copyright's design to benefit society and the mechanism of limited monopoly of ownership designed to achieve it. I encourage them to confront their generation's desire to share files via peer-to-peer with their acculturation to the idea that creators deserve rights and control of IP. The resultant discussions invariably turn to working through how copyright could be more balanced than in its current legal implementation, and how and why creators might choose more flexible licensing to allow sharing using Creative Commons.

Academics, too, can look outward and use open source as a lens for cultural analysis of enclosure on our society. But the field of composition should also use open source to engage in meta-reflection and critique of its own knowledge making processes. In Kenneth Bruffee's collaborative learning classroom, students "learn to construct knowledge as it is constructed in the academic disciplines and professions" (*Collaborative Learning* 1). His students work together in "consensus groups . . . on a limited but open-ended task, negotiating among themselves what they think and know in order to arrive at some kind of consensus or agreement, including, sometimes, agreement to disagree" (*Collaborative Learning* 28). Whether or not social constructionists agree with Bruffee's notion of consensus as the means to reacculturate students to participate in academic discourse communities (*Collaborative Learning* 3)—even when John Trimbur's revises the role of consensus to make allowance for disensus—most would agree with Johanna Atwood's view that knowledge making—both in the classroom and in each discipline—happens through "group interaction (speaking, reading, and writing with others) and the Bakhtinian act of appropriating language to make it one's own" (17). Many writing teachers would also agree with descriptions of writing as a collaborative, social process that involves dialectic. Karen LeFevre suggests adopting Glen Matott's views that composition overly stresses the role of invention as a individual act, privileging an expressionist view of writing, and that we should instead emphasize the importance of dialogue as a necessary component in invention: "invention as an act initiated by a person but not fully brought to fruition until it is evidenced in situations where others receive and acknowledge and eventually evaluate it" (64). Some may find problematic the use of the term "social," as James Reither and Douglas Vipond do, because there

are so many different ideas about the “social in writing” and saying that writing is a “social process” does not reveal enough about what those processes are (856). For Riether and Vipond, it is “more helpful to think of writing (and knowing) not as social, but more specifically, as collaborative” (856). Collaboration involves “coauthoring,” “workshopping”—in which writers receive feedback on drafts—and “knowledge making” (857-862). For them, coauthoring and workshopping are not a required component of writing (860). Knowledge making, on the other hand, cannot be escaped. Writers collaborate with the conversations which exist before them, a recognition of the role that intertextuality plays in any writing process (Reither and Vipond 861).

Ideas such as these represent the many conversations about writing which tie current understanding of writing, learning about writing, and disciplinary knowledge making to social constructionist principles. In much the same way, Bruffee relates collaborative learning to nonfoundational social constructionist principles because “knowledge is a socially constructed, sociolinguistic entity and that learning is an interdependent, sociolinguistics process” (Bruffee *Collaborative Learning* 9). With all the intertwining of the social, social construction, collaboration, and collaborative learning, it is easy to see why Kerri Morris and Dana Mead question Bruffee’s views on collaborative learning and the social construction of knowledge: “Is this research about collaborative writing or about collaborative learning, about professional activity or about teaching method? The history of these two movements has been oddly conflated in our discipline” (87).

In this text, I will continue to do as Bruffee has done, for I would argue exactly the opposite, that how these issues are interrelated is equally important. Bruffee advises that if teachers think “of writing as social, collaborative, and constructive[, this] tells us a good deal about how college and university teachers (and textbooks) should be teaching writing and expecting students to learn it” (*Collaborative Learning* 57). Bruffee also quotes Kuhn, “knowledge is ‘intrinsically the common property of a group or else nothing at all,’” which Bruffee then defines as “nonfoundational social construction” (*Collaborative Learning* 3). What about the obvious corollary to these statements? Bruffee’s discussion of collaborative learning and nonfoundational social constructionism and composition’s attention to these issues and others mentioned above has not critiqued enough the primary “professional activity,” academic publishing, used for knowledge making within the field. The journal publishing system began

historically as a method for both disseminating and building the knowledge which is the discipline—as well as allowing scholars to gain recognition of their work. When considered in conjunction with these original purposes for academic publishing, our current understanding of collaboration and its use in the classroom, and the benefits of using the Internet and other forms of electronic distribution, open source can offer valuable strategies for revising this now antiquated print-based journal model.

### ***Borrowing from Open Source***

The previous chapter on open source mentions that OSDM is primarily about process. This is not to diminish the importance of open source licensing. A collaborative production model without an open source or equivalent Creative Commons license cannot be termed as open source. In this distinction, I disagree with Taylor and Riley's use of the term "Open Source pedagogy" to describe examples which do not include open source licensing. Collaboration and authorship are intermixed too much with notions of ownership to imagine that the license does not affect the process, and the term open source has particular ideological associations which depend on specific rights provided under the license. Important for those concerned about enabling access, an open source license also "ensures low and nondiscriminatory barriers to entry" for all who wish to participate (Weber 233).

Even if writing teachers choose not to use open source licensing, this obviously does not discount the value of studying open source as a pedagogical model or incorporating "open source methods" (perhaps a better term than open source pedagogy) in our teaching. As Taylor and Riley explain, there are specific parallels between OSDM, process pedagogy, and collaboration. For instance, in the "The Cathedral and the Bazaar," Eric Raymond includes nineteen key points in his analysis of the Linux community, many of which demonstrate useful thinking about a process model for writing software. For example,

- *Invention*. "Often the most striking and innovative solutions come from realizing that your concept of the problem was wrong."
- *Revision*. "Perfection (in design) is achieved not when there is nothing more to add, but rather when there is nothing more to take away."

Such lessons about process when coupled with open source lessons on publication can also be applied to academic publishing which is more cathedral than bazaar (Taylor and Riley). The myth of the independent scholar, toiling away in solitude to produce the inspired and singularly researched manuscript corresponds well with Raymond's description of software which is "built like cathedrals, carefully crafted by individual wizards or small bands of mages working in splendid isolation." While the myth of the independent scholar has been discredited (e.g. Sullivan), it is the basis upon which the academic publishing model was created, and scholarly publications are rarely—if almost never—collaborated on at the level seen in open source projects. Even when we speak of collaborative authorship of research, the process is much closer to the "small band of mages" described by Raymond than it is OSDM. Thus, whether or not compositionists will agree that open source methods offer a more productive and efficient method of knowledge production, it *is* highly collaborative, with a more transparent, inclusive review process. Raymond's "great babbling bazaar of differing agendas and approaches . . . out of which a coherent and stable system could seemingly emerge only by a succession of miracles" of OSDM sounds like the chaos of Bruffee's collaborative learning classroom ( *Collaborative Learning* 30-31) and very much like a community designed with a Burkean Parlor in mind.

### **Release Early, Release Often**

According to Raymond, one of the core principles of development which differentiates Linux from proprietary software and, indeed, other open source projects at the time the article was written, was the "release early, release often" strategy of making development versions of Linux frequently available for users and developers alike to test, revise, and evaluate. Open source projects will typically maintain stable versions and experimental versions, with nightly "builds" (versions) of the most recent experimental revision. In Linux's case, this method has particular motivational benefits:

Linus [Torvalds] was keeping his hacker/users constantly stimulated and rewarded —stimulated by the prospect of having an ego-satisfying piece of the action, rewarded by the sight of constant (even daily) improvement in their work.

(Raymond)

Other types of collaborative writing projects would similarly benefit from this approach. Visible progress in terms of small milestone achievements offers participants more incentive to continue

to work on the project than long stretches between heavily modified versions, and constantly available updates provide more opportunities for frequent feedback from others during the writing process. Much like Wikipedia, the most current version of the text would be available for others to review and, in the case of collaborative projects like Wikipedia, revise and improve.

Steven Weber also likens the release early, release often strategy to an evolutionary model akin to genetic development where frequent changes in updates create a natural selection process that provides the opportunity for numerous “variations” while also “locking in” what works:

The open source process in principle mimics this evolutionary strategy, with a feedback and an update cycle (at least for larger projects) that is an order of magnitude faster than most commercial software projects. (Weber 80)

If, as Gregory Clark says, “the primary project of a discipline should be to perpetuate the process of exchange through which disciplinary knowledge itself is continually reconstructed” (*Discourse in Dialouge* 5), then improvements in this process of exchange are certainly worth consideration. A release early, release often strategy of publishing drafts and ideas to the web could advance the knowledge in a field much more quickly. In discussion with fellow webloggers, I have found that many believe that weblogs may eventually supplant—or even provide a new process model for—knowledge being made in print publication because of faster information exchange. An additional factor, as Day points out in regards to Internet publishing in general, is that documents published to the web “can spread further, into more hands that need them” (252). A current example of this change in knowledge production for a particular discipline is in web design. Anyone who teaches writing for the web classes quickly learns that web design professionals and academics are creating, discussing, and forming most of the new knowledge about their field through the use of weblogs and other public web publishing mediums. This discipline/profession (since both academics and professionals are involved) is making meaning outside of the traditional academic discourse model. Perhaps web design is the audience Day speaks of when he writes, “for some audiences, the resultant faster dissemination of ideas makes networked discussion an excellent medium for collaborative research” (263). Perhaps composition is that audience, too.

Finally, the release early, release often practice contributes to the transparency of the project. In offering advice to new open source projects about getting their work out there

immediately, Scott Leslie suggests “that part of the openness means a development practice that’s literally ‘out in the open,’ open for scrutiny (and also for people to pick up on their own, without having to enter into political or economic relationships with you ahead of time.)”

### **Valuing Every User’s Participation**

We write either to maintain our membership in communities we are already members of, to invite and help other people to join communities we are members of, or to make ourselves acceptable to communities we are not yet members of.

(Bruffee *Collaborative Learning* 55)

The composition community shares research and ideas through publication, holds face-to-face discussion at conferences, and maintains constant virtual dialogue via email listservs. These are the main sites of conversation which define the discipline, our method of collaborative learning. Open source projects work similarly as discourse communities with social conventions for participation, processes for collaboration, and values about inclusion. Ilkka Tuomi explains that the incremental development model and particular “architecture of the technical system” in Linux has a particular “social advantage” (437). New developers can develop their skills and learn the social conventions of the community, eventually rising to “become master and gurus in the project community” (437). When combined with their “access to . . . community discussions and historical records. . . . this collaborative learning model could potentially be extended beyond software development projects” (451). For Kaspar Edwards, open source development projects are epistemic communities where members collaborate using distributed communication in which they share “normative, principled, casual beliefs and notions of validity” (17). Because epistemic community theory does not explain how new members become involved successfully in project development, Edwards proposes that “situated learning and legitimate peripheral participation (LPP)” are useful “analytical tools for understanding the process of socialisation into [open source software] development” (19). Within these communities, “learning is a process of becoming a practitioner,” and new members, or “learners,” become practitioners by engaging in an apprenticeship model (Edwards 20). Established project contributors, or “insiders,” see learners as legitimate peripheral practitioners, and through their participation, learners acquire an understanding of the social conventions of the community by working on parts of the project suitable to their skill level and knowledge of the project (Edwards 20).

The success of OSDM depends upon these model of master and apprenticeship, of teacher and learner, since open source development accelerates with economies of scale. In a community where new members are encouraged, and even assisted, to gain expertise and become more active contributors, a project will be more likely to sustain long term growth in membership. Developers at Drupal, the open source community in which I participate, have often expressed the importance of attracting potential contributors to the project because there is a belief that the power of the many benefits the construction of the software and all of those who use it. Even if the contributor base does not greatly increase, the community must recruit some new members in order to make up for the natural entropy of contributors leaving the project.

Community and product growth are not the only incentives for this type of learning model, and composition researchers offer insight which can be applied here. In their discussion of research and writing about collaboration, Mary Frank Fox and Catherine A. Faver cite “skills and competencies” as one of three “intellectual factors” leading to successful collaboration. When colleagues “skills and interests” are “complimentary,” collaborators find that the opportunity to learn from one another is one of the satisfactions which comes from the collaborative process (128). Geraldine McNenny and Duane Roen make a case for collaborative scholarship because “coauthorship enriches the exchanges of ideas within the university while encouraging an openness and a spirit of collegiality” and that better writing and research occurs through working with others (292, 300). Collaboration can also promote “team spirit” which encourages team members to make strong contributions to support the team, efforts that writers might not make if writing only for themselves (McNenny and Roen 204).

A key difference between OSDM and the way that our field collaborates and makes knowledge is the level of openness. Open source is more inclusive; it involves “expected users” in production of intellectual property (Keats). OSDM accomplishes this both through the release early, release often strategy and through a transparent review process where contributions to the project are vetted in public, online discussions. To support the growth of the community, the peer review is not top down, but rather a system of “peer-level monitoring” known as “horizontal monitoring” where more democratically, members in a community all participate in the review process (Awazu and Desouza 1018) in a manner very similar to the “dialogic writing” Atwood describes (20-21). Taken all together, the whole “release-feedback-suggestion-revision” process

is instrumental in creating “the community of developers” (Faber 35). The emphasis on community involvement is important here because in my experience with Drupal development, long term developers stress the necessity of peer review by telling new contributors that they must find and encourage others to test and discuss their contributions. Only then, based upon the evaluation of other members, do the project leaders make a decision to accept, reject, or remand the contribution back to the creator.

Raymond likewise stresses the importance of involving users in the process on more than one occasion in “The Cathedral and the Bazaar.” He directs us to “listen to your customers” when speaking of release early, release often. He points out that “treating your users as co-developers is your least-hassle route to rapid code improvement and effective debugging.” One core premise behind Raymond’s lessons of user involvement is the now common belief in the open source community (thanks to Raymond) that “given enough eyeballs, all bugs are shallow.” In other words, software improvement benefits from the largest possible audience of reviewers. In essence, this is a user-centric production model, one which might inform our understanding of usability in document construction. The more users/readers involved in discussion about drafts of a particular document, the more likely it is to be rhetorically situated for the target audience. This is assuming that writers develop collaborative process to handle very large number of user contributions as open source has done.

Even though most writing teachers would probably agree with Raymond’s observation that

The next best thing to having good ideas is recognizing good ideas from your users. Sometimes the latter is better.

our academic publishing model is very exclusive, and does not treat readers—our users—as co-developers (co-authors) and provides little opportunity for participation by others in the writing process. This is a strange disconnect between implementation of peer review in the classroom and use of it as a discipline. Despite the fact that “collaboration underlies our research and pedagogy,” Susan Hunter notes that “it does not describe the review process for journals in composition” (266). The peer review groups and discussion cited in Bruffee’s collaborative learning model are more open than the current academic publishing model of write an article and send it off to a publisher. Submitted articles are then “peer reviewed,” but not in the conversation



central to social constructionist pedagogy advocated by Bruffee or the process of open source peer review. Academic peer review is generally hidden. Only a few individuals selected by the journal or publisher evaluate the text; authors may never know who these readers are, and vice versa in blind review. The author typically receives feedback, with little or no further discussion or other interaction with reviewers, except in rare cases such as *Kairos* where reviewers act more like editors and work with the author(s) throughout the revision process. *Kairos*'s peer review model would seem to be the more desirable. In a survey of journal reviewers Hunter found that "many reviewers . . . would like to see more collaboration built into the editorial process," for reviewers "have a sense of working in the dark" (267). A more collaborative review process would also help reviewers negotiate the conflict between their roles of one who must pass judgment on the work and the teacher who wishes to work with the writer to improve the work (Hunter 269).

Hunter's scholarship focuses on the collaboration between reviewers and authors, but what about expanding that collaboration space outside of the normal review process? If, as Clark says, "Writing is, in some sense, almost always public discourse in this attempt to contribute to the shared knowledge upon which the people whom a community comprises construct their collective lives" (48), then why not facilitate more opportunities for public discourse? Composition has worked very hard to make sure that others are not marginalized in the ways that we teach writing. Why not work to make the availability of our scholarship and participation in the conversations of the discipline similarly more inclusive to all? Academic publishing privileges a discourse where only those who can/will be published speak in the foreground. Articles inter-reference and respond to each other in a dialogue which is carried on across publications. Even when collaboratively written, they appear as one voice that does not include the discussions on email lists and at conferences which represent the subsidiary dialogues where knowledge is made. Moreover, even those discussions are typically private or exclusive. Conference attendance requires financial support, privileging those in the field whose institutions fund their participation. Listservs such as TechRhet and CCCC-IP have private archives available only to members. While anyone may join these lists in order to participate and access their archives, this does create a barrier to entry which discourages the sharing of the knowledge made in their discussions. Access barriers are a failing of the Sakai Collaboration and Learning

Environment, an open source project begun by several universities in partnership with commercial clients. Rather than adopting OSDM principles in full, Sakai is a good example of John Slatin's observation that the university can use computer technology to "distribute authority and power more widely, to bring students and faculty and administrators actively into collaboration" or they can use it to extend existing authority structures (Slatin 50). Sakai describes its development as "the community source model," giving the impression of an open community; yet, it is an exclusive pay-to-play project with closed development forums and limited accessibility to software releases for non-members ("Sakai Partners Program"; "About Sakai"). Drawing on the lesson exemplified by Sakai, compositionists should be careful to apply open source principles in a manner that is as inclusive as other open source projects, or they risk needlessly marginalizing the participation of others.

### **Principles of Distributed Innovation**

Open source has always depended on the power of the Internet for distributed collaboration and is central to the paradigm shift in business described by O'Reilly. The use of this communication medium makes possible Weber's four "principles of distributed innovation":

- "Empower people to experiment."
- "Enable bits of information to find each other."
- "Structure information so it can recombine with other pieces of information."
- "Create a governance system that sustains this process." (234)

Within this distributed environment, Faber draws on one of Raymond's lessons from OSDM to point out the importance of experimentation in "an open source classroom" that would reward students for risk-taking, for being inquisitive, and for trying to find new ways to solve problems. . . . Such an environment would be a significant departure from an educational culture based on examinations, standardized testing, and other rote devices that do not enable experimentation or enable students to take positive lessons from failure and experimental actions. (Faber 34)

The recent popularity of weblogs is an additional example of where a couple of these principles are being applied using current technology. Many bloggers are now using Creative Commons for their posts in order to "share ideas and relinquish control over their content" (Ratliff 10). Most weblogs also provide Really Simple Syndication (RSS) feeds, machine-

readable XML-encoded pages which continuously update with the latest content on a website. Other bloggers—and anyone else for that matter—can subscribe to various weblogs using a news aggregator or news reader, a software application that regularly pulls the latest content from the RSS feed, enabling each individual news aggregator user to assemble “bits of information” from sites of their choice. RSS and other XML-encoded data and news aggregators can be useful tools for classes and journals. Collin Brooke recommended the use of a news aggregator to his students in his 2005 Network(ed) Rhetorics class. *College Composition and Communication Online*, *Kenneth Burke Journal*, and *The Writing Instructor* all provide RSS feeds so that Internet users may receive notices in their aggregator about new content. Journals that provide electronic copies online that use the Open Archives Initiative Protocol for Metadata Harvesting will provide the means for search engines to more easily index their content and allow scholars and librarians alike to easily pull relevant scholarly works.

### ***Revising Academic Publishing and Peer Review***

As a solution to the high cost of teaching materials in Africa, Derek Keats proposes a production model for developing open content texts. Like Keats, I want to provide a similar set of guidelines for thinking about an open source informed academic publishing model:

- Open access and licensing
- Public peer review
- Pre- and post-publication dialogue
- Post-publication versions
- Rolling publication cycle
- Technology support
- Mega multi-authored texts
- Print on demand

#### **Open Access and Licensing**

The traditional print model of publication began because it was the most efficient available means of sharing scholarly work (more efficient than the oral tradition). Now that electronic distribution offers a cheaper, more accessible method, scholarly journals—and perhaps

even academic book publishers—should adopt open access principles. At the very least, articles should be available under Creative Commons Attribution-NonCommercial-NoDerivs 2.5 licenses to guarantee that scholarly work is maximally distributed and easily accessed. To optimize the collaborative authorship of texts, educators should consider copyleft versions of Creative Commons licenses. In discussing how research has changed because of online conversation and collaboration, Michael Day proposes that the field has become more like a “hivemind,” and with that understanding, “protecting the rights of individual authors does not make sense if the work is produced collaboratively” (269). Additionally, as TyAnna Herrington observes,

“Individuals’ or groups’ belief in a social constructionist ideology can lead them to accept collaborative and even community authorship and ownership of knowledge, while their belief in foundational ideology supports the argument that an individual author should retain exclusive protective rights to intellectual property” (Herrington 9).

Because open source licensing removes the barriers imposed by copyright law for collaboration and community authorship, social constructionist should believe, too, in the value of using open source licensing, particularly copyleft. To do otherwise is to inhibit the community construction of knowledge in favor of remanding control to the individual author and/or the publisher. In the long run, because copyleft privileges collaboration and community ownership, enough interaction with publishing models which use copyleft licensing could lead to wider acceptance of social constructionist principles.

### **Public, Dialectic Peer Review**

At the very least, peer review processes must be transparent instead of hidden evaluation procedures and feedback. Transparency has been an integral part of open source projects because “potential contributors [must] understand what it is that they are contributing to” (Mulgan, Steinberg and Salem). In the same way, a public review process can allow potential article contributors to better prepare their articles for submission by understanding the political and ideological climate in which their articles will be reviewed. Moreover, an open review process is a form of quality control. Authors and their reviewers must also have opportunity to converse about their text rather than merely being given feedback. Otherwise, the author-reviewer dynamic

is much like how many teachers respond to a student paper—no sustained conversation about the text. Hunter suggests that “a reviewer’s willingness to engage in dialogue with writers is as important as his or her qualifications to certify new knowledge” (269). Indeed, and reviewers will have to answer to authors and other readers. The validity of a review and the quality of feedback can only increase when it can be externally judged by others. Because reviewers are publicly evaluated on their response, good reviewers can then demonstrate a contribution to the field, making it possible for reviewing to gain more recognition in terms of tenure and promotion.

Note that a public review process does not negate the possibility of blind review. Authors could submit articles semi-anonymously—only editors would know their true identity—and converse with reviewers (and the public) about their text using a pseudonym. Once the article has been accepted for publication, the author’s real identity could be associated with the draft or abstract submission, the pre-publication discourse, and, of course, the final version of the article.

### **Pre- and Post-Publication Dialogue**

Whether or not the public has a direct evaluation role in determining if an article is to be published, anyone with Internet access should have the opportunity to read and respond to both submissions for publication consideration and final article versions using some public discussion forum. Increasing authors’ opportunities to discuss their work with others will assist in both improving and establishing the quality of the work and is a positive aspect of the “massively parallel peer review” described by Taylor and Riley. Authors will likely find that a public review process of a submission will give them good feedback for revising the work for the publication’s audience because they are interacting directly with that audience. Chances to discuss a work-in-progress and a final version of a draft with an author is an excellent way to have others learn and gain knowledge about the field, as well as demonstrating learned expertise. Perhaps maybe one day, doctoral preliminary exams could consist of discussing drafts and final versions of articles in public venues. The successful doctoral candidate would demonstrate their knowledge of the field and contribute in some small way to the construction of documents being discussed, a more useful method for determining whether a graduate student is ready to become a participant in the field.

Journal editorial boards might still select specific reviewers responsible for final voting on an article’s merit. The reviewer could be selected prior to the discussion about the submission,

or journal editors might privately poll from those actively discussing the text with the author. A more community-based process might involve some sort of moderation. At minimum, it could be a simple voting system such as Digg.com. A more involved model would make all discussion participants become reviewers who rate the quality of the submission and the author's discussion about the text under consideration. Reviewers themselves might receive ratings for their reviews, much like with book reviewers on Amazon or Slashdot's karma system as described by Benkler. This would assist in establishing the merit of their review work and could also be used in a weighted polling system. Reviewers with higher ratings could have a larger vote in the evaluation of an author's submission.

One advantage of a more open review process is that authors can be evaluated not only on the submission itself, but what they might indicate during conversation about intentions to revise based upon commenters' suggestions. Understanding better an author's plans for revision will allow reviewers to make more informed projections about the quality of the final document.

### **Post-Publication Versions**

Since electronic publishing is no longer fixed in a medium, authors might choose to—or editors might ask them to—update official published versions with new ones based on comments contributed by the community since original final publication or perhaps because of new research or thinking about a particular topic. The author might submit a new revised version for review again, or the editor might select to merely notice the original version as needing an update and invite feedback for improving the text.

If the field fully adopts open source principles and leaves behind the authorial notions of authorship to which they have been acculturated, editors might solicit revisions from new authors when the original author is no longer available or willing to work on the text.

### **Rolling Publication Cycle**

Electronic documents are not subject to the same constraints which resulted in the volume/issue approach for periodical publications. Calls for participation could remain open, without—or with broader—deadlines for submission. Following the public review period, the author should be invited to publish their article immediately rather than waiting until a full issue release. Readers can be kept abreast of new article releases using email notification or RSS subscription.

## **Technology Support**

If journals are to keep pace with the best web publishing methods, they need to use current technology. Even just five or six years ago, implementing an open review process publishing system with the methods above would have been difficult and expensive with available technology. Today, open source weblogs and more full-featured content management systems are viable platform for hosting a publication and its associated conversations. Many of these applications provide the necessary collaboration, document management, user moderation, and communication tools. They provide more user-friendly interfaces for publishing and organizing content than the traditional method of posting HTML documents to the web via file transfer clients. At the same time, cost of commercial webhosting has dropped to a point where a journal or other organization could purchase webspace to support an online publication for only a few hundred dollars a year.

## **Mega Multi-Authored Texts**

With the open review processes offered above, journals might also open up specific topics and invite Wikipedia-like, open source-style collaborative authoring from the community at large. Unlike Wikipedia, these mega multi-authored texts should go through an evaluation process before being announced final in order to avoid the issues with credibility and accuracy which Wikipedia is currently experiencing (Jade).

## **Print on Demand**

The predominant method of publication for most journals is print first, then provide electronic versions of articles on the web post or concurrent to publication. Printing and distribution of issues is a significant cost in journal publication and should be treated as a luxury. Journals should choose to focus on electronic publication as their means of distribution, and they should authorize print on demand publishing services to handle publication and subscription of print versions.

## ***Progressive Publishing Examples***

In Spring 2006, Editor and Publisher David Blakesley plans to revamp *The Writing Instructor*. Using a content management system to support the site instead of more traditional,

static HTML pages, the journal will implement a publishing model with many progressive ideas such as,

- Works will be published under Creative Commons licenses.
- “Peer review is conducted Slashdot style, with scholarly review teams and multi-tiered response and feedback.”
- “Authors collaborate closely with editors and reviewers to prepare their work for publication” (Blakesley).

*The Writing Instructor* is not the first organization to experiment with a different publishing and review model. There are a few prior examples in recent years which exhibit some of the ideas presented above.

### **Pitch Journal**

In 2003, *Pitch Journal* released its first (and only) issue. Begun by David Wiley and the rest of the Open Sustainable Learning Opportunity (OSLO) Research Group at Utah State University, *Pitch Journal* focused on Instructional and Learning Technology and implemented an open review system where the articles must “receive a certain number of reviews and maintain a certain level of review” for publication. The review process was both anonymous and blind. Once articles reached the review threshold for acceptance, editors then worked with authors to prepare the article for publication. Articles in *Pitch Journal* were available under Creative Commons licenses.

### **Into the Blogosphere**

In 2004, faculty and graduate students in the Department of Rhetoric at the University of Minnesota published *Into the Blogosphere: Rhetoric, Community, and Culture of Weblogs*, an edited collection of scholarship on weblogs (Gurak et al.). The text is published to the Internet using weblog software—an appropriate choice for a work on weblogs—and comment boards were enabled when the text was first published to facilitate post-publication discussion between readers and authors (commenting has since been disabled due to spammers). Articles are available under Creative Commons licenses.

### **Computers and Writing Online 2005 Conference**

*Kairosnews* hosted the 2005 online version of the Computers and Writing Conference. Authors submitted abstracts publicly online by posting them to the *Kairosnews* weblog where



they were responded to publicly. Community members were invited to review abstracts and authors were encouraged to find reviewers. Final decisions about conference acceptance were made by conference organizer selected reviewers. Completed conference presentations were posted again to the weblog for community discussion. All presentations are available under Creative Commons licenses.

### ***Complications for Revising Scholarly Publishing***

In writing about open access, Harvey Blume argues that through understanding open source software, academics should consider that “if a given field of study puts all or most of its work online where it is available for review, criticism, and development, the field has adopted an open-source style of work” (46). When many disciplinary fields do so, “it makes sense to think of open-source software not as a special case, but as a sign of change in knowledge as a whole, a movement toward electronic collaboration” (Blume 46).

This shift will not come without resistance. McNenny and Roen believe that dialogic modes of knowledge production may be “a threat to established authority” and even “antithetical” to the academy (305). Patricia Sullivan notes that “while the production of knowledge is acknowledged to be a social enterprise. . . . collaboration is thought to curb the individual’s capacity for originality and creativity that are necessary to produce (rather than merely reproduce) knowledge” (12). In discussions about collaborative learning, Cooper, George and Sanders point out that when education has been historically used as a means of control, “collaborative learning can be a threat to this structure of control in an elitist society which it presupposes an environment in which Others have a voice and in which the outcome is uncertain” (Cooper, George and Sanders 36). They observe that the “romantic myth of the individual” is used by those who fear collaboration (38).

Nevertheless, if open source methods can benefit the field, composition should choose to fight for the merits of collaboration at the level of publishing and peer review. We should see collaboration as the “technology of power” which Ede and Lunsford describe (120), and make use of it for the field’s benefit. We may have to confront disdain from academics outside of composition, struggle with lack of sufficient recognition at first in terms of tenure and promotion,

and continue to educate others on the value of collaboration in scholarship. This all despite the irony that the goal of an open source informed academic publishing and review process is to improve the quality of the scholarship and its pre-publication evaluation.

## CONCLUSION

### ***Exercising Our Right to Choose: Just Ask***

On 15 January 2003 when the U. S. Supreme Court upheld Congress's right to extend copyright terms seemingly in perpetuity, the Court took away hope from copyfighters who had thought judicial and legislative reform the means of repairing problems with intellectual property law. By supporting Ashcroft's position, the U. S. Supreme Court has further made clear that our society cannot rely on the government to create balanced intellectual property policy. Admittedly, I was not surprised by the ruling. Disappointed, maybe, in the Justices' unwillingness to recognize the importance of the public domain, but not surprised. The Court was not likely to overturn the Copyright Term Extension Act (CTEA) since any ruling against it might also affect previous copyright legislation. As reported by one of the public observers of the oral arguments, "There was a great deal of concern whether or not accepting Eldred's position would lead to the court having to invalidate many previous laws, in particular the Copyright Act of 1976" (Ruiz). Having to repeal the 1976 Act could potentially plunge one of this country's major economic industries into chaos.

Moreover, while a ruling by the Court against the CTEA would have been beneficial to the public domain and those that make use of it, this small win for copyfighters would have probably been less beneficial than the loss has been and will continue to be. A ruling against the CTEA would have done nothing to negate the DMCA, the encroachment of fair use, and the heavy licensing fees and copyright infringement threats of the content industries. Nor would it have helped in making the general public more aware of problems with intellectual property. Without more general awareness of and interest in intellectual property issues among the majority of voters, additional reform will be very difficult as long as lobbyists of the entertainment industries and other media concerns are the primary voices with influence over

## Congress

While little progress has been made in terms of abating the government-supported reduction of the public commons and user rights, openness has become more widely accepted and put into practice at an exponential rate in the last few years, an increase in popularity I suspect is due in small part to the ruling of the Supreme Court. In his reflections over his oral arguments in *Eldred vs. Ashcroft* and the subsequent ruling, Lawrence Lessig surmises,

If there is any good that might come from my loss, let it be the anger and passion that now gets to swell against the unchecked power that the Supreme Court has said Congress has. When the Free Software Foundation, Intel, Phillis Schlafly, Milton Friedman, Ronald Coase, Kenneth Arrow, Brewster Kahle, and hundreds of creators and innovators all stand on one side saying, “this makes no sense,” then it makes no sense. Let that be enough to move people to do something about it. Our courts will not. (“Losing”)

When hope is lost for effecting change in an oppressive system, people become more willing to consider revolutionary alternatives that work despite government regulation. Only the abject poverty of the peasant classes in contrast to the opulent wealth of the aristocracy could have stimulated the Russian revolution and the birth of Communism in 1917, the injustices imposed by the British monarchy the seed of a Democratic revolution here in America in the seventeenth hundreds. Open access, open source, and open content provide an alternative to accepting the default view of copyright. By choosing open source or Creative Commons, educators and others concerned about intellectual property now have the option of engaging in the “civil disobedience” which Glen Brown encourages:

Taking one’s grievances to Congress and the courts can be a long, expensive road. Using a Creative Commons license is not only a way to opt into a system of more moderate copyright, it’s also a way of raising your hand and saying, ‘I believe in another way,’ then taking action.

In addition, educators can also choose to use open source software as a means of protesting against available proprietary software, or more specifically, the lack of options available in monopolized software markets. For those that object to Microsoft’s domination of personal computing over the last decade or so, Mozilla Firefox and OpenOffice offer equitable

alternatives over continuing to use Internet Explorer and Microsoft Office; these applications are equal in feature set and superior to Microsoft in their adherence to open standards, while also free to download for anyone—institutions, teachers, administrators, and students—to use. If concerned about Blackboard and WebCT's recent merger into a similarly powerful monopoly in the learning management system market, teachers can explore open source systems such as Sakai and Moodle. Adoption of open source course management software can also allow teachers to become actively engaged in their development, an opportunity for education to have extensive influence over the development of the pedagogical tools used to manage course websites and elearning.

While open source certainly might not have evolved into the popular ideological movement it is today without the commercialization of software in the 1980's, educators must also see it as more than just a means of resistance. As a complement, a component of a new intellectual property model now expanded from the traditional focus on individual property rights, open source thinking offers options that extend copyright in useful ways beyond the singular default choice of "All Rights Reserved." It does not matter whether copyright terms are 17 years or 70 years after the death of the author; openness often has superior benefits for knowledge production in certain circumstances merely because of its emphasis on collaboration and community ownership. This enlightened perspective on intellectual property is a Pandora's Box now open and demanding our consideration, one which provides a new framework for making decisions about intellectual property informed by both the new ideology of openness and the old based on ownership. Rather than merely continuing with their default conditioning of accepting copyright by default without making any decisions, educators must now consciously decide how to license and produce content. This, even in cases where resistance to oppressive intellectual property practices is not an issue. Some researchers in composition, for example, are actively engaged in creating excellent software applications for the writing classroom or content management systems for managing their program websites. These in-house software construction projects often involve building an application from scratch and require funding of faculty time by the department or institution. Unfortunately, these applications rarely make it out of the department in which they are created unless as a commercial product proclaimed as a new software product created for education by educators. How much more could such projects be *for*

education if they were better informed by open source practices?

Rather than reinventing the wheel at a high cost to the institution in terms of supporting development time, writing teacher-researcher-programmers should look for open source projects which meet most of their needs as a development framework, as a starting point upon which to build their work. This would allow her to take advantage of the learning opportunities in an open source community and the many other reasons previously cited for participating in open source development such as peer feedback—particularly important for writing teacher programmers since they are not programmers by trade—and long term ongoing maintenance and growth of their work. Even if a viable open source project does not exist as a starting point for creating the application, the writing teacher should open source their work for the same reasons. Besides, if the ultimate goal of an academic project is to better the field, shouldn't the work be shared as openly as possible?

While this text has largely presented some very altruistic goals for openness involving sharing and collaborative knowledge production from an almost idealized viewpoint and heavily criticized traditional intellectual property practices, certainly there will be some instances where openness will not be the most pragmatic solution. Linux may offer a lower cost of ownership in the long run over Microsoft as a server technology; yet, many educational institutions may not have the information technology and computer support to immediately move to an open source operating system for hosting their websites and other network resources. Teachers might wish to Creative Commons license their course materials, but university intellectual rights may interfere with their rights to do so. Or, consider the case of this dissertation. Florida State University dissertation submission guidelines only allow for the "All Rights Reserved" notice on the title page; obtaining permission to alter the university dissertation format would be prohibitive. Also, I hope to revise this text into a book length manuscript for publication. If this text is licensed using a very liberal Creative Commons, a potential publisher might not be interested in the revised version because they feel that the dissertation version is too easily distributed and republished. So I have to choose a compromise. I will publish a version of this manuscript on my personal website at <http://cyberdash.com/future-is-open> under a Creative Commons Attribution-NonCommercial-NoDerivs license.

Thus, educators are now faced with choices in regards to intellectual property when little

choice was available before. As I have mentioned elsewhere, “I am not suggesting writing teachers should begin tomorrow by refusing to publish without open content licensing; I think that a luxury only the fully tenured among the discipline may have” (“Copyright, Access”). However, we should begin thinking about ways in which we can make our scholarship and other work more accessible. There are a few things writing teachers can do very easily. Teachers should consider sharing teaching materials published to the Internet using Creative Commons licenses. Scholars can make their work more available by following Nick Carbone’s suggestion that they submit one article to a traditional journal and one to an “effectively public domain” journal. Regardless of whether we publish online or in print journals, it never hurts to see if a publisher will allow a Creative Commons license. Just ask. Or, when publishing in print, we might submit the Scholarly Publishing and Academic Resources Coalition’s “Author Addendum,” a document which formally requests specific rights for archiving a copy of an article publicly on the web. If we continue to ask, publishers are more likely to consider these requests as important and give them serious consideration.

As we make these choices, we will also learn more about openness. To do otherwise and ignore the potential of “Some Rights Reserved” and open source will, as librarian Luke Rosenberger advises, leave us without influence over a powerful idea which will continue to gain widespread acceptance:

We need to start asking ourselves what effect the “bazaar model” could have on our ecosystem, on our economy of ideas and creative enterprise. If the open-source revolution in software is any indication, we’re potentially talking about a steamroller, folks, a freight train. As far as our understanding of the consequences, we can stand aside and watch it pass, we can stand in its path and get clobbered, or we can make the leap into the driver’s seat and put a hand on the wheel.

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## BIOGRAPHICAL SKETCH

Charles Lowe is an Assistant Professor in the Writing Department at Grand Valley State University where he teaches first year composition and professional and technical writing, having previously taught writing as a Continuing Lecturer at Purdue University and as a Teaching Assistant at Florida State University. He holds a Bachelor of Arts degree in Computer Science from Cornell University (1994), an M. A. in Literature from Florida State University (1998), and a Ph. D. in Rhetoric and Composition from Florida State University (2006). His research interests include intellectual property, particularly open source and open access; electronic communication; web design and usability; and social software, with an emphasis on content management systems. He is the Editor and co-founder of *Kairosnews*, is currently the Co-Chair for the Intellectual Property Caucus of the Conference for College Composition and Communication, and regularly contributes documentation and support to the Drupal open source community.