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Desperately Seeking Copyright -- Digital Era Boosts Complexity, Urgency of Copyright Protection

Edward Colleran
Copyright Clearance Center, Inc., ecolleran@copyright.com

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Like the oxygen in the air we breathe, copyright is ubiquitous, invisible, and often forgotten. But also like oxygen, copyright is necessary for intellectual life.

In the digital era in which we find ourselves, many publishers and authors perceive risk of an erosion in the efficacy of copyright protections — both legal and technological — and their contemplation of this risk affects them as would a threat of air pollution.

On the other hand, librarians and other information professionals tend to express a different concern. Copyrighted content, of high quality, is the "air we breathe" to librarians, and any increase in restrictions upon this vital air supply concerns them greatly.

Both of these concerns are valid, and both are part of the economic equation that has been integral to the copyright balance for hundreds of years. In this column, I will highlight some of these issues from both perspectives, hopefully as a way of clarifying the issues and promoting further dialogue. (If I can do this without seeming to take either "side," so much the better!)

Rightsholders control the rights to the works they publish and are entitled, within legal limits such as fair use and first sale, to decide how, when and where they can be distributed . . . and to profit from their sale and use. This has been their copyright role for a long time.

The difference in the current digital publishing environment is the size, complexity, and rapidity of these tasks. In the context of text materials, the challenge to effective copyright protection that began with the widespread use of the photocopy in the 1970s has since swelled by an order of magnitude in the Internet era.

Take the point of view of an author or publisher and consider that all it takes to reproduce and distribute copyrighted information from the Web — with authorization or payment — is the click of a mouse. No wonder rightsholders seem a little worried!

Librarians and other information professionals have a similar set of worries. Digital publishing has increased the complexity and ambiguity of copyright compliance, especially in college environments. Librarians, who have sometimes been pressed into service in the role of "copyright cops," typically strive to uphold copyright law but are not always clear on what the rules are, or how they should be implemented.

Take e-reserves, for example. Relying on practices and precedent from the photocopy era, some librarians believe that it is acceptable, without rightsholder authorization, to retain course materials on e-reserves on a university intranet for one semester — an increasingly common practice — but not for a second semester, and that this is a permissible copyright practice. Others believe course materials can remain on e-reserve indefinitely — still without rightsholder authorization — as long as access is limited to class members with special passwords. However, most rightsholders would probably argue that these uses without authorization are not fair uses because of their substantial impact on the market for the original, and therefore should be paid for, just like when students each buy their own paper coursepacks. Courts have not ruled in this area.

Another example is the time-hallowed practice of article interlibrary-loan (ILL).

For many years, those libraries participating in this form of mutual lending ("resource-sharing") program have filled requests for journal articles with photocopies in lieu of lending "originals" of the actual publications to the requesting institutions. Publishers (fearing that unlimited interlibrary loan reciprocity negatively impacts their sales) and librarians (seeking clarity in their copyright compliance activities) negotiated guidelines for this practice in the 1970s. These guidelines suggest that after receiving copies of five articles per journal in a year, the requesting institution would be expected to obtain its own subscription. Formulated under the aegis of CONTU (The National Commission on New Technological Uses of Copyright Works), these guidelines were finalized in 1978 and have been the basis for common practice for many years now, if only as a "safe harbor".

A closely related, but newly emergent, area is the role some libraries play as free (and sometimes fee-based) document delivery services, including the transmission of PDFs from PC to PC or PC to fax. From one perspective, these technological enhancements to the efficiency of the ILL process may seem like a valid extension of older practices. From another perspective, and especially in the context of fee-based activities, this may be an invalid extension of the ILL guidelines into areas for which they are not appropriate, and, arguably, it is bringing libraries into competition with commercial services which do seek authorizations and pay royalties. Courts have not yet ruled in this area either, but these concerns and differences of opinion may escalate into conflict.

E-journals and digital subscriptions constitute...
Innovations Affecting Us --
E Ink and Digital Paper

by Norman Desmarais (Acquisitions Librarian, Phillips Memorial Library, Providence College, Providence, RI 02918; Phone: 401-865-2241; Fax: 401-865-2823)
<normd@postoffice.providence.edu>

The main objections people have to reading books and documents in electronic format have to do with comfort. The reading devices, whether computer monitors or dedicated devices, cause eye strain, are hard to read at various angles and under various lighting conditions, and lack paper's portability and ease of use. Two companies are working to change that. E Ink and Gyronic Media are working on digital paper technologies, hoping to make digital displays as easy and convenient to use as ink on paper.

Xerox Palo Alto Research Center (PARC) began work on electronic-ink or electronic-reusable paper, depending on how you want to look at it, in 1975. It is this technology that underlies the efforts of both E Ink and Gyronic Media. It uses microscopic beads that change color under an electrical charge. E Ink's Electronic Ink uses millions of tiny "switchable" transparent polymer microcapsules — about 100,000 per square inch of inked area. These microcapsules, which are analogous to the microencapsulated coatings on business forms, contain microscopic white pigment spheres immersed in a dark dye. A positive charge attracts the white chips to the top of the sphere and a negative charge repels them to the bottom, where they are obscured by the dye, causing text to appear. Reversing the process produces white letters on a dark background. Once switched, they retain their setting with little or no additional power. These microcapsules can be sprayed or pressed onto a variety of materials, such as plastic, glass, and paper.

Gyronic Media's SmartPaper uses tiny solid beads suspended in pockets of oil fixed in a silicone rubber sheet. These beads, which are half black and half white, turn freely depending on their charge. The black side has a static charge, while the white side is neutral. These beads must be embedded in their own silicone rubber sheet to function; but the silicone sheet could conceivably be applied to other surfaces.

E Ink

Joseph Jacobson, who was doing postdoctoral research in physics at Stanford University in 1995, turned to ephoresis to develop his vision of an eBook that could be reconfigured electronically to display the text of any of hundreds of "books" stored in silicon memory in the book's spine. Ephoresis uses an electric field to charge particles. Jacobson's company, E Ink Corp., in 1998 which derives its name from the electrophoretic ink process.

E Ink's prototype displays use E Ink's electronic ink and Lucent's active-matrix drive circuits printed on thin, plastic film. The electronic ink has qualities similar to paper: extraordinary brightness and contrast under a wide range of lighting conditions and easy viewing from all angles. The plastic transistors have properties similar to those of silicon chip semiconductors; but they are flexible and can be printed.

The first flexible electronic-ink display was a five-by-five-inch screen with the consistency and thickness of a computer mouse pad. A partnership with IBM Research resulted in a flexible 12.1-inch diagonal (25 square inch area) display with the resolution of a typical laptop computer monitor (83 dpi). It is roughly one quarter the thickness and weight of a standard liquid crystal display (LCD) panel and can display both text and simple graphic images while being flexed. LCD is the most popular display continued on page 89

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ute yet another problem area. Ownership of periodical copies may be fairly clear-cut in the traditional case, when a library buys a print subscription and maintains an archive. But what about redistribution of articles from electronic subscriptions, whose rising cost and growing predominance are consuming an ever-greater portion of library budgets? Electronic subscriptions are more likely to be governed by licenses (signed in one way or another by the library or the institution), and those licenses contain specific terms of re-use that vary from publisher to publisher and are not commonly known to library users. Can faculty members confidently and legitimately download and then photocopy an article from just any digital subscription or circulate that article by email without ever paying a copyright fee? Librarians worry, as well they should, that deviations from the licenses negotiated with individual publishers could leave their institutions liable to copyright infringement. Many had hoped that the intense negotiations that resulted in DCMA in 1998 would provide more clarity for digital copyright on these specific questions but those hopes were not realized.

Finally, no discussion of copyright in the digital age would be complete without addressing publishers' well-founded concerns that the pervasiveness of Internet use in general puts their traditional level of control of their intellectual property at substantial risk.

It did seem, for a while in the 1990s, that some folks believed that all information on the Internet was free for the taking. After all, users could download and print articles at will and e-mail them to countless others with the click of a mouse. Even today, the common "email to a friend" tools that one sees on news and trade magazines' Websites suggest to some an invitation to do whatever one wants with that information.

Textual materials, especially professional and scholarly ones, may be less susceptible to truly wide "Napsterization" than popular materials such as movies and recorded music. However, the authors and publishers are understandably concerned that the financial value of their materials be maintained and their copyrights respected.

Librarians have been among copyright's chief defenders, preventing others from making unauthorized copies...so librarians, themselves, are not likely to abuse the fair use and other privileges traditionally available to them. Instead, the biggest potential problem with unauthorized electronic transmission of copyrighted material comes, not from librarians, but from rogue commercial entities. Publishers know this and are taking copyright infringement very seriously, pursuing selective cases in court. These efforts are designed not only to protect the publishers' copyrights but also to vindicate the many efforts of librarians and other diligent copyright compliers to "do the right thing" and respect copyright.

How can academic librarians proceed? Probably the best remedy is to develop and publicize a clear campus/organizational policy on copyright: that lets users know what reproduction and distribution practices are authorized and which are not.

In addition, libraries can simplify, for both themselves and their customers, the process of obtaining copyright permissions through reproduction rights organizations such as the Copyright Clearance Center (CCC). CCC offers multiple licensing solutions for photocopy use as well as permissions for electronic transmissions, including document transfers. CCC can even arrange a link directly to a library catalogue through a "permissions gateway," thus simplifying the process of obtaining permission to use an individual article from the library's extensive holdings.

Librarians, publishers and authors surely agree in celebrating the vast growth in scholarly and technical knowledge, and the greater distribution of ideas, as accelerated by the Internet. Despite valid differences in perspective about the role and scope of copyright protections, whether legal or technological, copyright and will assist both libraries and rightsholders in meeting these challenges in the digital age. The common task will be to find ways to continue to respect copyrights, while aiding in the distribution and growth of knowledge.