Copyright law and intellectual property rights have been the focus of many news stories over the last decade. Rapid change in the publishing and communication industries is leading to a rethinking of the current copyright law and renewed consideration of the original intent of copyright law. The ease of copying and file sharing via the Web makes copyright protection difficult in a web-based culture of free and open access. Innovative, collaborative environments offer a new form of copyright that encourages sharing while providing some protections to authors. Even as these innovations are gaining momentum, projects like the Google Print Library Project keep copyright front and center in the news. Here’s a look back at the origins of copyright, with a snapshot of what is happening now.

**HOW HAS COPYRIGHT EVOLVED?**

While we don’t know what ancient scholars would have thought about copyright, it is probably safe to assume that plagiarism was frowned upon. In any case, until the invention of the printing press, the copying and distribution of creative works was difficult. The Statute of Anne in England is thought to be the first copyright law. The statute was printed in 1710 and provided for the protection of authors from the republishing and reprinting of their works by booksellers. Prior to this statute, publishing in England was largely in the hands of booksellers or stationers who had been empowered in 1557 by the Crown to destroy books with seditious or heretical content.

In the United States, copyright derives its legal basis from the US Constitution, Article I, Section 8, Clause 8: “The Congress shall have power … 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.” The Founding Fathers lost no time in codifying copyright with the Copyright Act of 1790. This act was based on the Statute of Anne and gave authors the exclusive right to print, reprint or publish their creative works for 14 years with an option to renew for 14 more. Since that first act in 1790, the copyright law has been tinkered with periodically (1831, 1870, 1909, 1976, 1998) with ever-increasing copyright terms and extensions of protection to additional kinds of creative works. The major revision to US copyright law in 1976 extended protection to a time period equal to the life of the author plus 50 years (Works for Hire – 75 years) and provided copyright protection to both published and unpublished works. The concepts of Fair Use and First Sale were codified. Today, in the US, a work is protected for the life of an author plus seventy years and a Work for Hire is protected for 95 years (Sony Bono Copyright Term Extension Act of 1998).

All copyright legislation was originally local. Sovereign nations evolved separate legislation to provide intellectual property protection to its citizens. International copyright law has grappled with the need to resolve issues between sovereign nations. The Berne Convention in 1886 established the concepts of mutual recognition of copyright between nations and the development of international copyright standards. The convention has undergone revision five times since its initial drafting and, as of fall 2005, has 160 contracting nations (www.wipo.int/treaties/en/ip/berne/).

Today, the World Intellectual Property Organization (WIPO) administers the Berne Convention.

**WHAT DOES COPYRIGHT PROTECT?**

Copyright protects literary, musical, dramatic, pantomime and choreographic, pictorial, graphic and sculptural, motion picture and audiovisual, sound, and architectural works. (Oddly, computer programs are considered literary works.) Authors and creators of works have rights to reproduction, preparation of derivative works, distribution of public copies, and performance and display of a work publicly (including digital audio transmission).

**WHAT’S NOT PROTECTED?**

Copyright is limited in what it can protect. The basis of copyright stems from a recognition that society benefits from the promotion of knowledge and learning. Limitations to copyright reflect this need to balance society’s needs with an author/creator’s rights. Facts and ideas cannot be protected, but the mode of expression can be. Creative works may be used in limited ways that are considered “Fair.” “Fair Use” includes criticism, comments, news, education, and research. The “Use” must be “Fair,” and limits are placed on the purpose of the use, the amount that can be used, and the impact that the “Fair Use” may have on the market value of the work. Libraries receive special exemptions under copyright law and can make additional copies of purchased materials for patrons, archives, and replacements. Materials whose copyright has expired are considered “public domain” as are many documents created at public expense, i.e. government documents.

For a quick overview of copyright history and protection, see the Association of American Publishers copyright primer: www.publishers.org/about/copyrightresources.cfm

**WHAT’S HAPPENING TODAY?**

Tensions have always surrounded copyright. The author’s need to profit from his creative work has always been pitted against the need to foster the growth of knowledge. Historically, copyright terms have grown substantially, and control of distribution has extended through international treaty. But technological advances have provided challenges. The Internet has let the cat out of the bag, and many wonder how to get it back. Cyberspace is seen by users as a place where everything should be free and open to all. Access to information sources, rather than being under the control of organization-wide entities such as libraries, is now available at the individual level. Copies can be easily made and distributed (Napster). On the other hand, technology often reverses the trend and restricts access through complex Digital Rights Management software.

Experimentation with modifications to “standard” copyright expectations is rampant. Collaborative, non-proprietary software is freely available (Linux, Sourceforge), and the Open-Source Initiative (www.opensource.org/) encourages software development under a form of open license. Open-Access Publishing is experimenting with a variety of means of digital distribution that differ significantly from the standard publishing model. These experiments include allowing authors to retain copyright, allowing authors to distribute their own papers via the Internet, permitting the storing of copies of papers in preprint archives, and the depositing of papers in permanent archives.

The Creative Commons (http://creativecommons.org/) movement encourages distribution of images, text, audio, and video through alternative copyright with some rights reserved. Creators may choose to reserve only some copying and distribution rights. You can find works covered under a Creative Commons license using both Google- and Yahoo-based search engines.

The latest news in copyright tension comes from Google and the Google Print Library Project (http://print.google.com/googleprint/library.html). Google plans to digitize the books in several major university libraries: Stanford, Michigan, Harvard, Oxford, and the New York Public Library. This fall, citing copyright infringement, the Authors Guild and the Association of American Publishers filed lawsuits against Google. It’s possible that the digital depository of the collective human knowledge lies in our future, but we’ll have to wait and see.

(Cont’d on p. 122)
Earl Warren, the late US Chief Justice, on the subject of sports writing, once said “I always turn to the sports section first. The sports page records people’s accomplishments; the front page has nothing but man’s failures.” I like this statement, mostly because it explains to me why I always do precisely that, i.e. read the sports pages first. But I also like it because I think scientific writing is also about recording accomplishment. Copyright law protects this writing, the product of authors’ minds. In this short paper is a small insight into how copyright works, what it means, how long it lasts, and what is going on in the ‘copyright world’ at the moment.

WHAT IS COPYRIGHT?
First, a definition. The Publishers Licensing Society (PLS) (2005) answers the question “What is copyright?” with “Copyright is not just a right to copy. Copyright in the UK is the exclusive statutory right of authors, artists, musicians and other creators to control the copying and other exploitation of their original works by other people, for a limited period of time and subject to certain exceptions.” Copyright is one of a group of so-called ‘intellectual properties’ (together with trade marks, patents, design rights, etc.) and is a form of legal protection given to products of the mind. Most countries have their own copyright legislation, with many abiding by an internationally agreed code known as the ‘Berne Copyright Convention’. Further international agreements see national bodies collecting from users and distributing copyright payments to rights holders in various countries.

Infringements of copyright are usually dealt with through civil action in the courts, though we do not often hear of such cases in the general media. At any given time, however, there are numerous cases going on around the world, with actions taken by publishers, or often by groups of publishers, against organizations that make illegal copies of copyrighted work.

WHO OWNS COPYRIGHT?
The author? The author’s employer? The publisher? In general publishing terms, the author does. However, for much work published in scientific journals, copyright is assigned to the publisher. In many cases, employers do retain the right (under the terms of employment contracts) to copyright of all material published by employees during the course of their work. In truth, however, only rarely do employers of academics, mostly universities, actually insist on being the holder of the copyright, and in this writer’s experience, it is authors, and not their institutions, who put pen to paper when assigning copyright to the publisher, e.g. the Mineralogical Society. For a number of reasons, it is sensible that the publisher is the rights-holder. This allows for all permission-to-reproduce requests to be handled in the same way, and in the same place. The publisher can also act as a watchdog, checking for copyright infringements.

In many cases, copyright agreements (Copyright management for scholars, 2005) allow that the author retain (1) the right to be identified as the author; (2) the right to the integrity of the work, i.e. neither the publisher nor anyone else can make material changes to it, without the author’s permission; (3) the right to use the material for teaching purposes; (4) the right to create a new work based on the copyrighted material; (5) the right to receive royalty payments in certain circumstances; and (6) reversion of the rights to the author if the publication ceases to be commercially available. Other terms are sometimes included, e.g. the right to post a copy of the work on a personal or departmental website. The agreements allow publishers (1) the right to credit for the publication and the right to use it in future publications; (2) exclusive right to publish in listed media; (3) the right to enforce copyright law in relation to the material; and (4) the right to license the content to others to use. In some instances, the employer of the author insists on a number of rights within any publishing agreement. These can include (1) use of the copyright material for teaching purposes by institute staff other than the author; (2) royalty payments, where appropriate; (3) interlibrary loan; (4) public access; and (5) other rights, e.g. licensing third parties to make educational use of the material.

How long does copyright last? Most ‘Berne Convention’ countries employ a policy of “life plus 70 years”, i.e. copyright material doesn’t enter the public domain until 70 years after the author has died. This is a compromise between (1) those who believe that copyright should last forever, with income from licenses to use the work accruing to the author’s estate, and (2) those who believe that material should be freely available to all.

COPYRIGHT AND PUBLISHERS’ INTERESTS
For the Mineralogical Society’s journals, there are two notable and regular exceptions to the general rule of transfer of copyright to the publisher, i.e. the United States Geological Survey and the British Geological Survey. This has been the case for many years. The argument is that as the work published by these bodies is funded by the taxpayer, then the taxpayer should be entitled to have a copy of the results of that work to read, without having to pay for it. It is arguable that the majority of material published in Earth science journals is provided by authors funded directly or indirectly by the taxpayer, and I am never sure why the geological surveys alone take this stance. Interestingly, neither organization would appear to make use of their copyright for any other purposes. Users are, of course, allowed to make copies of the work without fear of legal action by the publisher.

OPEN ACCESS
The Open Access debate is likely to bring the question of who holds copyright into sharper focus. Many funders of research are suggesting/insisting (or plan to do so) that authors make copies of their published work available for free to all. This will not marry well with those publishers who insist on exclusive copyright. A growing trend now is one where authors grant to the publisher a “license to publish” their work rather than assigning exclusive copyright to them. This gives the publisher much smaller powers over the material and allows the author the opportunity to repurpose their work. The main reason for this change is to allow authors to include their work in repositories or other online databases of academic content.

The next hurdle to be overcome is to see how publishers deal with the many publicly funded authors who wish or have been urged to make their work available via an open access facility (either immediately or with an inbuilt embargo of 6, 12 or even 24 months). It will be a crucial time for publishers.

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