

Science must push copyright aside

Richard Stallman,
founder of the GNU project

It should be a truism that the scientific literature exists to disseminate scientific knowledge, and that scientific journals exist to facilitate the process. It therefore follows that rules for use of the scientific literature should be designed to help achieve that goal.

The rules we have now, known as copyright, were established in the age of the printing press, an inherently centralized method of mass-production copying. In a print environment, copyright on journal articles restricted only journal publishers requiring them to obtain permission to publish an article and would-be plagiarists. It helped journals to operate and disseminate knowledge, without interfering with the useful work of scientists or students, either as writers or readers of articles. These rules fit that system well.

The modern technology for scientific publishing, however, is the World Wide Web. What rules would best ensure the maximum dissemination of scientific articles, and knowledge, on the Web? Articles should be distributed in non-proprietary formats, with open access for all. And everyone should have the right to mirror articles; that is, to republish them verbatim with proper attribution.

These rules should apply to past as well as future articles, when they are distributed in electronic form. But there is no crucial need to change the present copyright system as it applies to paper publication of journals because the problem is not in that domain.

Unfortunately, it seems that not everyone agrees with the truisms that began this article. Many journal publishers appear to believe that the purpose of scientific literature is to enable them to publish journals so as to collect subscriptions from scientists and students. Such thinking is known as confusion of the means with the ends.

Their approach has been to restrict access even to read the scientific literature to those who can and will pay for it. They use copyright law, which is still in force despite its inappropriateness for computer networks, as an excuse to stop scientists from choosing new rules.

For the sake of scientific cooperation and humanity's future, we must reject that approach at its root not merely the obstructive systems that have been instituted, but the mistaken priorities that inspired them.

Journal publishers sometimes claim that on-line access requires expensive high-powered server machines, and that they must charge access fees to pay for these servers. This problem is a consequence of its own solution. Give everyone the freedom to mirror, and libraries around the world will set up mirror sites to meet the demand. This decentralized solution will reduce network bandwidth needs and provide faster access, all the while protecting the scholarly record against accidental loss.

Publishers also argue that paying the editors requires charging for access. Let us accept the assumption that editors must be paid; this tail need not wag the dog. The cost of editing for a typical paper is between 1% and 3% of the cost of funding the research to produce it. Such a small percentage of the cost can hardly justify obstructing the use of the results.

Instead, the cost of editing could be recovered, for example, through page charges to the authors, who can pass these on to the research sponsors. The sponsors should not mind, given that they currently pay for publication in a more cumbersome way through overhead fees for the university library's subscription to the journal. By changing the economic model to charge editing costs to the research sponsors, we can eliminate the apparent need to restrict access. The occasional author who is not affiliated with an institution or company, and who has no research sponsor, could be exempted from page charges, with costs levied on institution-based authors.

Another justification for access fees to online publications is to fund conversion of the print archives of a journal into on-line form. That work needs to be done, but we should seek alternative ways of funding it that do not involve obstructing access to the result. The work itself will not be any more difficult, or cost any more. It is self-defeating to digitize the archives and waste the results by restricting access.

The US Constitution says that copyright exists "to promote the progress of science". When copyright impedes the progress of science, science must push copyright out of the way.

Richard Stallman is the founder of the GNU project, launched in 1984 to develop the free operating system GNU (an acronym for GNU's Not Unix), and thereby give computer users the freedom that most of them have lost. GNU is free software: everyone is free to copy it and redistribute it, as well as to make changes either large or small. The GNU/Linux system, combining the GNU system and the Linux kernel, has an estimated 17 to 20 million users. Stallman was awarded a MacArthur Foundation fellowship in 1990.

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