Who's Journal Is It Anyway?

A New Journal, A New Paradigm?

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Pediatric Critical Care Medicine - the specialty now has its own journal. But who's journal is it? What is its purpose? Who will read it? How much will it cost?

The traditional peer-reviewed print biomedical journal is under fire, as new models of publishing are being explored, primarily due to the explosive growth of the Internet. The conflicts inherent in print publishing, where scholarly communications are sold like groceries are now strikingly obvious. There is increasing recognition that scientific manuscripts need no longer be given away to publishers to be sold for a profit, and that the process of peer review can be maintained without sacrificing quality. Electronic publishing on the Internet can enable scientific authors to dramatically expand the scope of what they've always done - give away the product of their intellectual labor. As our specialty launches its first journal, we would do well to consider these critical issues.

There has always been a conflict of interest between scientific authors and publishers. Scholarly authors want to bring new knowledge or ideas to as wide an audience as possible with as few barriers as possible - provided they receive appropriate credit. Publishers seek to distribute the scholar's work widely as well, but only to paying customers. With no alternative means of distribution, authors entered into what Steven Harnad refers to as a "Faustian bargain" with publishers; they give away the copyright (soul) to their work, in exchange for distribution (immortality) (1). Commercial authors are only too happy to engage in this contract, for they too are committed to the principle that only paying customers should read their work, for their economic self-interest is precisely aligned with the publisher's. Scientific authors have no such incentive. The Internet now represents an alternative distribution mechanism that is significantly more...
cost-effective than print. Estimates vary, but the web is very much less expensive than
traditional print publishing (2).

In addition to cost savings, the advantages of electronic publishing over print are
legion. E-journals would not be limited to a set number of pages per issue, and indeed
are not even limited to a fixed frequency of issues. The new medium is capable of
allowing access to supporting data, proofs, images, multimedia, and even self-contained
Java applets that might run a demonstration of the author's work for each reader. E-
journals have no economic or ecological penalty in creating copies and distributing them.
There can be significant time saved between manuscript acceptance and publication;
indeed what now can take months could be reduced to hours. Finally, the reach or extent
of distribution of the Internet is unprecedented. Many areas of the world that can only
afford donated out-of-date medical textbooks can now be online and tap into the current
collective consciousness of the biomedical community. A freely accessible online journal
can reach many providers and scientists who have previously had little or no access to
the biomedical literature.

Traditional journals are migrating to the web, but with few exceptions, they have
erected "financial firewalls," allowing only subscribers, site licensees, or pay-per-view
customers access to the full-text of articles. Ironically, one can still write to the author
and request a paper reprint, which is then be promptly mailed at no cost to the requesting
party. Who pays for the reprints? The authors! Let us examine the process of research to
publication as a whole. The public funds a high proportion of biomedical research, in
most countries via national granting agencies. Part of the stipulation for accepting an NIH
grant in the USA is the agreement to make the results "public". To publish results of this
government-sponsored research, the scientist writes a manuscript and gives it away to a journal. Peer review is performed at virtually no cost to the journal, since this service is provided gratis by the academic community as an accepted duty. If the article is accepted, the author transfers copyright to the journal, effectively creating a monopoly on the work's distribution. The journal then is free to charge for the work, and limit access to paying readers. To complete the circle, the author is then expected to buy back her own work in the form of the journal and its reprints; since she no longer holds the copyright, she would be in a contract violation if she distributed the work in any other format. If the purpose of copyright law is to prevent the illicit creation and distribution of copies of intellectual property, then what role could it possible play when the author himself is the party who wants to make copies to freely distribute?

There is no doubt that it is expensive to print and distribute journals. It is reasonable that publishing companies want a fair return on their investment. However, most published research is not read by individuals subscribing to a particular journal. When clinicians or scientists have a question, they turn to the biomedical literature as a whole for an answer, they do not thumb through only those print journals to which they have subscribed. The premiere biomedical bibliographic database of the US National Library of Medicine, MEDLINE, is now available freely over the web at the NLM's PubMed website (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi). The likelihood that a search will yield valuable results in only one or two journals that the researcher or physician has on their desks is small. In contrast to the ease with which citations and abstracts are now obtainable online, we are still relegated to trudging off to the medical library (assuming we practice in close proximity to a well-subscribed biomedical library)
to pull paper copies from heavy bound volumes. What could be a seamless process of searching and retrieving original information at one's desk or the patient bedside is interrupted by the traditional "reader pays" model. Indeed, PubMed includes direct links to original full-text articles on the journals' websites, but only paying customers are allowed access. Although this is only a minor inconvenience to many of us, it represents an insurmountable obstacle to others. Libraries and individuals in developing countries have consistently been left behind in this process, and the Internet offers a glimmer of hope to those who cannot afford the high cost of printed journals.

So what's to be done? Even electronic publishing has costs. No one is ready to shed the sometimes troubled but still revered system of peer review to maintain the best form of quality control we can offer the biomedical literature. There are several solutions being discussed, ranging from strident revolution to meek evolution. It is quite clear that we must take several steps. First, we must simply reclaim what is rightfully ours. We have "outsourced" the business of scholarly communication to third parties for several centuries now because we had no alternative. Now we do have alternatives and we should bring this business back into the fold.

Integral to this reclamation involves the separation of the process of peer review from the product of the print journal. For the peer review process is what we are already doing and is virtually without (direct) costs. It is the glossy product of that review that is so expensive to print and distribute. The peer-reviewed content belongs to us - we write it, we review it, we use it. The printed version of the product can belong to the publisher. The entire community of our peers should not have to bear the burden of these costs (and publishers' profits) if they do not receive or read the print journal regularly. Scholars,
scientists, and the public should have unrestricted access to the content of all biomedical journals online.

How will the more modest costs of editing and electronic publishing be financed? Creative solutions are under consideration. For example, many authors would have little qualms paying a modest publication fee. After all, authors are currently paying the journals for reprints that they then give away! Why not just make the payment up front and refer those who want copies to the free online version? Academic institutions would have additional funds to pay author charges from the savings they realize by dropping subscriptions to hundreds of very expensive and rarely read technical journals.

In addition, industry sponsorship of and advertising on journal websites could provide substantial revenue, as the "eyeball count" for an electronic journal is liable to be much more significant than a restricted distribution print version. Of course this would have to be undertaken with great care to avoid real or apparent conflict of interests. Certainly advertising already appears in many print biomedical journals. How is it that so many information-intensive resources that were formerly print-based and restricted to paying customers now freely available on the web? It is called creativity, thinking "outside the box," and "paradigm shifts." Indeed, ages ago (in Internet time), one of the visionaries of our new world, Esther Dyson, wrote in *Wired* magazine:

“We are entering a new economic environment … where a new set of physical rules will govern what intellectual property means, how opportunities are created from it, who prospers, and who loses … Intellectual property … will be copied so easily and efficiently that
much of it will be distributed for free in order to attract attention or create desire for follow-up services that can be charged for.” (3)

Why is it taking the biomedical community so long to awaken to the possibilities of electronic publishing? The high energy physics world has been sharing electronic preprints and post-publication manuscripts online on the Los Alamos archive (http://xxx.lanl.gov/) for at least 5 years. In May of 1999, Harold Varmus, then head of the National Institutes of Health, proposed what has come to be called PubMed Central (http://pubmedcentral.nih.gov/), a freely accessible eprint server that will accept published article submitted from participating journals. If every biomedical journal participated, this might achieve every researcher's and clinician's dream that Steven Harnad describes:

"It's easy to say what would be the ideal online resource for scholars and scientists: all papers in all fields, systematically interconnected, effortlessly accessible and rationally navigable, from any researcher's desk, worldwide for free." (4)

I believe that Pediatric Critical Care Medicine should follow the lead of the British Medical Journal, the Canadian Medical Association Journal, and others by agreeing now to archive all of its peer-reviewed articles with PubMed Central, enabling barrier-free access to everyone. We can then consider our own unique electronic publication options at a later date.

Who is this new journal for? It is not for the Society of Critical Care Medicine, the World Federation of Pediatric Intensive Care Societies, or Lippincott Williams & Wilkins. It is not even for the authors of the articles that will appear here. It is for all
health care providers and scientists involved in the care or study of critically ill children. It is intended to be the first high quality, peer reviewed, focused resource for Pediatric Critical Care, and it should be made as widely available as possible to influence the largest possible audience. If our goal is to improve the care of our patients, then hiding this valuable resource behind a financial firewall in today's environment of unprecedented opportunity for rapid and seamless information transfer, is, in my opinion, unconscionable. We can do better. We must do better. Electronic publishing will enable us to provide high quality information quickly and at low cost to all those who look after critically ill children.
References


