JPN and the electronic revolution

John Hoey, MD; Anne Marie Todkill, MA

Hoey — Editor; Todkill — Senior Deputy Editor, *Canadian Medical Association Journal*

Medical and health sciences journals are in the midst of a major skirmish, or perhaps a revolution. Senior and well-published authors, along with their younger colleagues, are at the barricades, angry that their freely contributed manuscripts are published in journals that limit access to readers who are willing and able to pay to read them. The authors argue, with some justification, that the results of publicly funded research should be available to the public free, or at least affordably. Publishers respond that publishing costs money and must be supported through paid subscriptions and, for some journals, paid advertising.

Tim Berners-Lee's invention of the World Wide Web and the subsequent programming of a simplified graphic-compatible front-end facility for it by Marc Andreessen a few years later,[1] paved the way for even computer-challenged physicians (and psychiatrists, neuroscientists and editors) to access a global repository of information as easily as switching channels on a television. The capacity and speed of the Web could not be resisted; with more enthusiasm than trepidation, journals such as the *Canadian Medical Association Journal* (*CMAJ)* (in 1995), the *Journal of Psychiatry & Neuroscience* (*JPN)* (in 1998) and now virtually every health science journal launched Web sites. But some — perhaps most — publishers are worried about the impact of electronic publishing on revenue. In many cases that revenue is huge.[2] The *New England Journal of Medicine* is reputed to turn an annual profit of US$20 million — on a journal that the Massachusetts Medical Society bought for a dollar.[3] If a journal's material is available free on the Web, who will pay to access it any other form? A library subscription, to *Brain Research*, for example, costs over US$18 000.[4] Won't libraries and readers cancel their print subscriptions?

Perhaps. There is little data so far to help us predict what will happen to the revenue streams of print journals that make their content freely available on the Web. Although the financial worries of journal publishers are hard to discount, we might recall that a similar logic was invoked by Hollywood movie studios when television became commercially available. As it turned out, both industries are surviving very well. When we canvassed CMA physician members who access *eCMAJ*, over 61% told us that we should continue to make the journal available free of charge to everyone.[5] The *British Medical Journal*, which also makes its full text, and more, available free on the Web, has found no decrease in subscriptions to the print journal ... so far. In fact, there may even be a modest increase. Nonetheless, almost all medical journal publishers have taken the default position of restricting access to their e-journals to paying customers.

Authors, emboldened perhaps by Paul Ginsparg's now 10-year-old success in getting almost all research in physics published first in electronic format, available free to everyone, fought back. Harold Varmus, a Nobel prize winner and former Director of the US

Correspondence to: Dr. John Hoey, Editor, Canadian Medical Association Journal, 1867 Alta Vista Dr., Ottawa ON K1G 3Y6; john.hoey@cma.ca

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National Institutes of Health (NIH), and David Lipman, Director of the National Center of Biotechnology Information (NCBI), spearheaded the launch of PubMed Central (www.pubmedcentral.nih.gov).[6,7] PubMed Central is a full-text digital archive of peer-reviewed scientific articles. It complements the widely used PubMed bibliographic database of published medical literature and other resources at NIH.[8] Access is free and unrestricted.

Although authors were supportive, publishers were horrified. Many declared that PubMed Central would jeopardize their ability to survive. Others were alarmed by the prospect of turning their material over to a government-sponsored Web site. PubMed Central struggled to get off the ground. At present, it lists only a few publications. Among general journals, only the *British Medical Journal* (currently available) and *CMAJ*[9] are listed.

This did not deter the revolutionaries. Prominent health scientists launched the Public Library of Science (www.publiclibraryofscience.org/). Strongly supportive of PubMed Central and of free access to all health sciences research, the Public Library initiative asked authors to pledge that, beginning in September 2001, they would

> publish in, edit or review for, or 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 [the publishers] have published through PubMed Central and similar online public resources, within 6 months of their initial publication date.[10]

So far 29 866 scientists have signed on. The 550 Canadians among them include Simon Young, co-editor-in-chief of *JPN*.[11] But even this effort has failed, as few journals have bent to the pressure. Recently, the Public Library of Science initiative has launched an appeal for funds to start its own electronic-only journals. The plan foresees author charges of US$300 per published article.[10]

Publishers have an important edge in this battle, for two reasons. First, a journal's prestige counts a lot for authors, granting agencies and university promotion and tenure committees. No matter how well-intentioned tenured senior authors may be, they must always be mindful of the career prospects of their junior coauthors and of their own competitiveness in getting career awards. This is a barrier that will come down only when major studies are published in journals listed on PubMed Central. When that happens, the revolution will be rapid. It will likely take only a few such studies, perhaps a handful.

The other obstacle is that the costs of editing and publishing are much greater than US$300 per article. At *CMAJ*, we estimate our costs (not including printing and mailing) to be in the range of US$3000 per article. Running a decent peer review and editorial review system is expensive. So is the extensive editing and fact-checking that goes on in most good journal offices. Without this, the readability and accuracy of the scientific corpus will suffer. This 10-fold cost discrepancy might be ignored for ideological purposes by authors at the barricades, but it will need attention in the long run.

Will there be a *JPN* 5 years from now? We think so. The entire content of *JPN* is available online free of charge. We think that this accessibility has contributed to the improvement in *JPN*'s impact factor, now at 2.039 (making it 27 in the list of 82 psychiatry journals and 91 in the list of 203 neuroscience journals in the Institute for Scientific Information Journal Citation Reports 2000 database), and will encourage authors to submit their best papers to *JPN*. In the final analysis, medical and health sciences journals prosper or perish by the quality and relevance of the research they publish. We also believe, albeit without much evidence, that the print journal (dragging its valued advertisers along) will maintain its subscriber base. Authors and readers still like to hold a journal in their hands. *JPN* has lots of life yet, and great potential to grow. We've joined the revolutionaries.

Competing interests: None declared.

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Canadian College of Neuropsychopharmacology
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2001 Award Winners

Heinz Lehmann Award

Dr. Franco Vaccarino is the recipient of the 2001 Canadian College of Neuropsychopharmacology (CCNP) Heinz Lehmann Award. Dr. Vaccarino is currently a professor in the Departments of Psychiatry and Psychology at the University of Toronto and vice president of research at the Centre for Addiction and Mental Health. This award is designed to recognize outstanding research achievements by Canadian scientists in the field of neuropsychopharmacology. The award, donated by Hoffmann-La Roche Limited, consists of $5000 and an engraved plaque. Congratulations to Dr. Vaccarino!

Presentation: CCK modulation of mesolimbic DA function: a model for the opposing effects of stress on motivated behaviour

Jock Cleghorn Award

Mr. Steven Szabo is the recipient of the 2001 CCNP Jock Cleghorn Prize. Mr. Szabo is doing research training in the Department of Psychiatry, University of Florida in Gainsville, Fla. This award is designed to recognize the best poster presentation by a research trainee at the CCNP Annual Meeting. The award, donated by the CCNP, consists of $500. Congratulations to Mr. Szabo!

Presentation: Serotonin receptor effects on norephinephrine neuron firing are mediated through excitatory amino acid and GABA-A receptors

Innovations in Neuropsychopharmacology Award

Dr. Harold A. Robertson is the recipient of the 2001 CCNP Innovations in Neuropsychopharmacology Award. Dr. Robertson is currently professor and head of the Department of Pharmacology, Faculty of Medicine, Dalhousie University in Halifax. This award is designed to recognize outstanding research innovations in the basic or clinical fields of neuropsychopharmacology. The award, donated by Pfizer Canada Inc., consists of $5000 and an engraved plaque. Congratulations to Dr. Robertson!

Presentation: The genome and the brain: towards a neurobiology of psychiatric disorders

Young Investigator Award

Dr. Ridha Joober is the recipient of the 2001 CCNP Young Investigator Award. Dr. Joober is currently an assistant professor in the Department of Psychiatry and associate member in the Department of Neurology and Neurosurgery at McGill University. The award, donated by Bristol-Myers Squibb Company, consists of a $2500 bursary plus a $2000 research grant and an engraved plaque. Congratulations to Dr. Joober!

Presentation: Genetics of schizophrenia: combining animal models and clinical studies