

From the Executive Editor

“Open Sesame”

REGULAR READERS OF THIS COLUMN WILL HAVE seen the message from our publisher in the October 2004 issue about open access for scientific papers. The issues discussed included open access for publishing, and open access relative to archiving.¹ The main purpose of the piece was to highlight the change in copyright agreement with our authors, which allows them to deposit electronic copies of their articles in *Cardiology in the Young* in their own archives, or in the open access electronic archives maintained by their host Institutions. We have considered at length, over the last few years, the effect of the electronic archiving of scientific journals, and access to them through the internet. The pace of change on scientific publishing has, for many of us, been slower than we anticipated.² Looking back, nonetheless, it is now clear that the last few years have seen irrevocable changes. Most scientific journals are available on-line, and the archiving of paper copies of journals, either personally or institutionally, is becoming much less widespread. Academic libraries have changed beyond recognition, with computer terminals replacing the long, dusty, shelves filled with bound copies of journals. This in itself makes research more efficient, and improves access to the scientific literature. In most cases, however, access is still limited to subscribers. Those who wish to read must pay for the privilege.

Open access turns this on its head. Its two principles are, firstly, immediately upon publication, a complete copy of the work is deposited in a permanent electronic archive or electronic journal. Secondly, readers have completely free access to the work, and can use, copy, print, or distribute it. This seems to offer much in terms of accessibility, and thus sounds attractive. But the implications of open access are profound. As our publisher stressed, the commercial ramifications are enormous. Publication, even electronic open access publication, has significant costs, and maintaining a permanent archive makes it essential to establish secure mechanism for funding over the long term. This has led to a new commercial model, in which the payment is made by the author, rather than the reader. Authors submitting their work to one of the currently expanding number of open access journals may have to pay a fee for submission, or for publication,

or both. Currently, fees vary between about \$500 and \$3,000, depending on the policy of the journal and the length of the article. The conventional model of scientific publishing, in which the reader pays for access, has created many journals that have stood the test of time. It has been a success. If we abandon this model too readily, can we be confident that the new open access journals will prove as durable? These journals may turn out to be ephemeral. The archives they create may be unsustainable. Scientific work may available to a wide audience in the short term, but may not be available to any one indefinitely. An increasing number of journals, new and established, are embracing the open access “author pays” model. In truth, I suspect that a financially viable model of open access journals will eventually be established, but it may take some time until authors can be confident that the open access journal to which they submit their work will stand the test of time.

It is the scientific implications of open access, rather than the commercial ones, which are perhaps of most interest. In the current model, authors submit their work to the journal editor, who has to decide whether the work is of sufficient scientific quality to merit publication. In doing so, the editor takes advice of other scientists working in the field, chosen because of their known authority in the topic of the work. This, of course, is the scientifically hallowed process of peer review. In practice, few decisions are absolute. Limitations of space mean that few journals can publish every paper of scientific worth that they receive. The editor has to make a judgement, and all editors have to weigh up the qualities of the scientific work, and the space in the journal, before accepting or rejecting individual papers. Electronic open access changes that. No journal necessarily has a maximum number of pages. Editors could, if they wish, change their criteria for acceptance. But if change means lowering scientific standards, is that good for science? Is it good for the journal and its readers?

Our Editor-in-Chief has already boldly nailed his colours to the mast. *Cardiology in the Young* will not be bowing to the rebels at the gates who are demanding the end of peer review.³ For now, at least, he is right. If open access leads to a lowering of the standards of assessment of scientific papers, it will undermine the

very purpose of journals themselves. They would be of no more value than unselected archives of work, good and bad. Peer review will remain a cornerstone of scientific publishing, unless there is a fundamental change in the nature of journals.

While open access has obvious benefits for readers, who can access all they need without paying, it does create an extra financial burden for authors. For those with ready access to research funds, the cost of publication becomes yet another overhead. This is not welcome, but may well be manageable. What, though, about those researchers not fortunate enough to work in big academic institutions without large research budgets? They will find it increasingly difficult to fund their research. In medicine particularly, much valuable work has been published by individual authors, away from the great academic centres. The model of publishing in which the payment is made by the author seems to signal the end of this tradition. It is part of the onward march of "big science", and will be regretted by many, but it seems inevitable.

The work of individual scientists and institutions is often judged on the basis of the "impact factor", or the citation index, of their published work. I have written before in this journal about the nature of the indexes for citation, and their influence on journals.⁴ They are a relatively crude index of scientific merit, and they create perverse incentives for authors and publishers, but they are an increasingly important currency of academic achievement. What effect will open access have upon impact factors? Easier access to a wider spectrum of journals may well make impact factors more evenly spread between different journals, since they will no longer be so heavily dependent on

the number of subscribers of each journal. If it does, this will be welcome. At the moment, those journals providing open access tend to have low impact factors, but the situation is rapidly changing. It is not altogether clear how the picture will develop, but how it does will be fundamental to the wider acceptance of open access journals.

Cardiology in the Young has taken its first tentative steps towards open access. As I emphasised in my opening sentences, authors can now post electronic copies of their articles in their own, or in their institutional, archives. We realise this is only a first step. The next few years are likely to see many more changes. We will respond to the developing picture, but our main focus will be upon maintaining the scientific quality of the journal, and its value for our readers and our authors alike.

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