

EDITORIAL

The future of printed journals – a utopian solution?

Our present system of journals has been in existence for a long time but is anomalous. The work described is paid for by governments (e.g. the EPSRC, the Medical Research Council), or charities (the British Heart Foundation, the Wellcome Foundation), and is peer-reviewed free of charge by other scientists. When papers are submitted, publishers demand that the copyright to the work be assigned to them, and they then publish the papers in journals which they sell, and which these days may be on paper (primarily) or electronically, or typically both. For many journals there is also a 'page charge', and also charges for colour reproduction and reprints, which normally come out of the grants from the MRC & Co. Libraries have to pay to receive the journals in whichever format. About 16,000 journals are published each year in science, education, technology and medicine, and the average yearly cost of a library subscription to a journal is over £600 (\$1000). A number of journal publishers make good profits in this way and so also do a number of learned societies. Both would say that (with the exception of *Science*, *Nature* and some of the medical journals, which have large print runs and carry a lot of advertising) print runs are small and the corresponding costs of typesetting are high and so high subscription prices are inevitable. Librarians grumble that although publishers sell electronic access (in addition to print versions), these tend to be either expensive or be "bundled" – in order to obtain cheaper subscriptions a bundle of electronic versions has to be taken. Electronic publishing should remove some of these constraints (and save trees and postage) but publishers would say that they still need to run offices and employ personnel, and indeed at the present time *both* paper and electronic versions tend to be the rule. From time to time universities and librarians revolt. The *British Medical Journal* of 6 March (Vol. **328**, p. 543) reported that a number of the most prestigious universities in the USA (Harvard, Duke, Cornell, MIT) are threatening to cancel some of their subscriptions in protest against "exorbitant pricing".

The problem is that scientists and educationalists need to publish papers in order to survive. One's list of publications in high profile, peer reviewed journals is the strongest credential for promotion, a new job and grant getting. No other part of a scientist's CV, for example, is anywhere near as important. So what is the solution, if there is one? The Web is an obvious solution – as happens with *BEE-j*. There is no print version, there is no page charge or even an access charge, and the papers submitted (as always) are refereed free of charge by others in the field. It is supported by LTSN (now the Higher Education Academy). Papers appear promptly without waiting for there to be sufficient to fill an issue. Hopefully some forests are being saved because most people would not print out the whole journal and may even read papers on the screen without printing them out. Indeed, in a typical print journal, the average scientist may only be interested in two or three papers in any one issue (and will probably photocopy these, illegally or otherwise). There is another potential advantage here too, and that is a general altruism about

making the results of scientific investigation (or in the case of *BEE-j* pedagogic research) freely available to the whole world (at least to those with an internet connection). This last phrase in parentheses is not as facetious as it might seem. Whereas in many laboratories in universities in the developing world equipment and running expenses are extremely scarce, most places have access to the internet. Computers and the associated paraphernalia are cheap compared with scientific equipment because they are produced in such vast numbers, and because of satellite communication connections are cheap too. Therefore this give a unique opportunity of sharing our work around the world, to all from student to professor, surely a worthy objective, and one this is actually possible right now.

There are costs of course for the organisations producing the e-journals. Someone has to receive and send out the papers for review and someone has to edit the papers for putting up on the web page – and these people have to be paid. There is also the cost of web servers and maintenance (and increasingly these days of spending time protecting against viruses and hacking raids). Some web journals charge an up-front fee (e.g. \$1500) for accepting a paper to offset these costs. The *British Medical Journal* was hitherto freely available to anyone with a web connection but now an access charge is proposed. But overall the process should not only be quite a lot cheaper but also should make our publications freely available to everyone in the world who wants to read them. This may be bad for publishers (and some learned societies) but good for science and education on an incredibly large scale. Moreover, grant-giving organisations and promotions committees will have to accept web publication as an authentic mode of communicating their data and of demonstrating their credentials – and they should be happy to accept the arguments for the general good put forward above.

We expect our publication to appear through additional routes via the UK libraries network and beyond. We will look to using projects such as SHERPA (<http://www.sherpa.ac.uk>) as a route to circulate information about our articles as the relevant meta-data standards are adopted and embedded. This would lead to any article being correctly catalogued and its details circulated around the globe as soon as possible.

One famous newspaper publisher once said, when asked what he did for a living: “I buy wood pulp, process it, and sell it at a profit”. But this is not the business of scientists and educators. Things must change. Send your papers to BEE-j.

Ed Wood

Director,
LTSN Centre for Bioscience
<http://bio.ltsn.ac.uk/>