

TWO FUNCTIONS OF PUBLICATION

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The two functions of publishing are being separated by the Internet. Whilst there is a great effort to provide electronic versions of journals for use in this new world of communication the very nature of the Internet is anarchic. I do not see the attention to copyright being maintained by people who simply want to communicate. Also I cannot see scientists being taken to court by publishers for sending copies of papers to whoever without copyright permission.

Journals have, by tradition, other functions which have accrued over the years, such as peer recognition, peer review, career advancement, research grants applications. These are strongly attached to the ink on paper journal, and the quality of the particular journal or the publishing house. If there is a large separation between these two parts, and I would propose that this is inevitable, then there will be an attack on the current concept of copyright. I see as inevitable the transmission of copyright material without restriction, and a future where traditional publication would be for secondary purposes only. This would mean the reduction of subscriptions even further and the accompanying increase in cost.

The Product

The product of this trade is special. A scientific paper is not a product as such, it is the communication of information. This information belongs to the author as does a painting belong to an artist. There is a right to acknowledgement of authorship and a right to monetary recognition should this information be used commercially by someone else. It is the assignment of copyright by the author to the publisher which makes the paper a tradable commodity. A special one as it is unique and has a value dependant upon its intrinsic use as information not on its production and marketing costs. Thus there is a situation where academics have an absolute need for the communication of such information irrespective of cost and where there can be no true competition as the product is unique and protected in its uniqueness by law. A truly perfect situation for the supplier. This situation is mitigated by the sheer volume of material, there is a great dilution. Publishers employ editors to make the reputation of publishing houses by selection which in turn attracts the better quality research and which also makes the reputation of the publishing house among scientists and so the greater demand through the library committees. In this way it could be argued that there is competition, but only if there is a diversity of publishing houses.

The Relationship Between the Amount and the Requirement to Be Published

If there were no need for publication other than to communicate, it is probable that

the need for speed, the sheer quantity of routine science, and the inherent costs of preparing the paper for publication incurred by the scientist and the department, would likely have found alternative ways of communicating. It is the secondary purposes of publication which have caused overproduction within the traditional forms. It was too easy for grant issuing bodies to require proof of quality of work by demanding proof by publication and using such things as 'impact factor' to allocate 'Brownie' points for graduation of quality. If your research future depends upon what is published, and what is published is only acceptable as traditional publishing then you will publish in the traditional form.

The Internet

The Internet is beginning to show its style. Whilst we try to use it as a continuation of the orderly and comfortable ways of the past, it is intrinsically without order, anarchic. There is also another factor, there is the concept on the Internet that information is free, delivered without charge. So as we strive for some order the Internet will react, it will not merely conform. There is there a freedom which makes for fluidity.

Scientists will communicate, it is an essential part of their function, if they assign their copyright they will still think of the paper as their own work and will communicate by sending copies to whoever before the official publication. The main demand for the work could be satisfied before the paper is 'published' leaving just the archive function and the career preferment and grant allocation to the 'published' version in the library. The perceived value of the journal on the library shelves will be reduced, access will be for administrative purposes rather than the functional purposes of the faculty. Libraries will have to provide service by electronic access for students and research access will be within the department.

A Proposal for an Alternative Vision

Supposing, therefore, we accept this view of the effect of the Internet. A paper published on the Internet is delivered by the author free of charge. This is a simple direct communication. This raises certain problems, how will anyone find it when looking for this category of information? There are web crawlers but they are not very specific. How can this paper be accepted for quality without having to read it, wasting time and effort if it is not of a reasonable quality? If it is of useful quality can it be found again in five years time?

So I put forward a proposal. A first stop site for science publication where the mass of good routine science can be 'published'.

There would have to be peer review. This could be managed by the university or the institution. There are arguments that such institutions could not be trusted to maintain

quality, not an attractive argument to good scientists. Are directors of institutions and universities more blameworthy than editors? If the database were searchable by institution then there would be an argument for institutions to maintain the standards of their publications as that would enhance their reputations, much as publishing houses do, also it could be an added argument for grant requests.

There would have to be identification, co-ordinates of publication, such as where and when and in what form. This would require that the 'site' would have to have recognised substance. It would also have to have an archive which was available and distributable. Above all things, it would have to be recognised as an acceptable form of publication by the powers that distribute grants and honours, and recruit specialist personnel.

The 'site' would have to have a search engine of quality. The whole question of search would be a matter of concern to such a 'site'. Search on title author, abstract and full text. Complex searches. There is the need to consider the writing of abstracts to make them efficient as search bases. There are the problems of searching in translated material, in special forms such as AMS TeX, or chemical names with extra characters. Then there is selection by generalised subject to reduce the volume of searchable mass. This requires a discipline which will have to be found outside the specialist interior of a publishing house.

The papers would have to be available free of charge. Available for downloading and use with just acknowledgement. The author's copyright would have to be defined by the co-ordinates and his name and institution. The archive could be established by an annual archival CD ROM available for purchase by libraries at a low cost.

The authors or their institutes would need to deliver the paper as an indexed file, not a particularly difficult matter given modern technology. It would be prepared and made available within the institution at own cost, this again is not so onerous, there are already intrinsic costs which are donated when a paper is delivered to a publisher, there would be some extra costs in connection with peer review and preparation by a DTP system rather than word processing. There could be extra costs should the paper require special facilities such as inter-active molecules or video, which may require the expertise of other departments such as departments of computer science. This is an area where I think the library could find a new role. Certainly there would have to be some serious thought given to the allocation of budgets and grants.

There is another possible function for such a 'site' That is the production of very narrow subject journals or journals for an ephemeral subject in solely electronic form. There are times in science, when something new is opening up, when a specialist journal with extremely quick publication times would be useful but would not warrant continuation for a long period or would have an extremely narrow view, such as, in the past, the search for high temperature super conductors. Such a 'site' could provide the

technical expertise for such enterprises without requiring specialists in one subject becoming specialists in electronic publishing.

Suggested Effects of this Proposal

If such a 'site' were to take on the publishing of routine (not second rate) science this would leave the traditional journals free to consider just that science which was significant, more than just routine. They would not have to deal with the great volume of material, there would be less need for specialist narrow subject journals. There could be a move back towards the common carrier journal which in the past acted, to an extent, as a 'living review'. Quality and importance of the material published would be of the essence to such journals. Such journals would provide real added value to the papers published both for research grants and for career preferment.

Most importantly such a move back towards the wider view of a science with greater selection for quality would encourage a larger subscription base for each journal, with personal subscriptions becoming more useful and therefore more frequent. There could be an increase in the subscription base with greater profits for the publisher and a stabilisation of prices.

Such a site needs much thought and consideration as to techniques and consequences, so an experimental site has been established for thought and discussion, <http://sciencesearch.org>