

IS PUBLISHING OF SCHOLARLY INFORMATION AT THE CROSSROADS?

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The scholarly journal fulfils various important functions by informing the knowledgeable readers about developments and opinions. The publishing medium (ranging from the traditional printed on paper to the more recent developments of electronic publishing) creates certain publishing limitations and opportunities. This article explores the discussions about the future existence of the scholarly journal, especially in the printed format. The strong and weak points of the digital journal are explored as well as an evaluation of the controversial ideas of Harnad on digital publishing. The conclusion of the review is that there is a place for peer-reviewed scholarly journals, no matter of the publication mode. With the development of technology, the Internet can play a much greater role in this regard. The changes are expected to be gradual rather than abrupt.

Key phrases: digital journal, digital publishing, electronic journal, electronic publishing, scholarly journal

INTRODUCTION

The scholarly journal has survived for several centuries in one form or another, since it has several important functions. The primary aim of scholarly journal is to allow the publication of certain facts and opinions of the author, and bring these to the attention of the academic community or reading public – which could range from a small select group of experts and/or specialists and researchers, to a far wider audience of merely interested individuals.

Another issue of the scholarly journal is the ‘hazing’ aspect which is the process of evaluation of the material by a selection of experts who are able to assess the merits of the work, and suggesting improvements or revisions. This peer review has wider implications than the mere publication angle.

The scholarly journal also provides a forum for the published articles to be discussed or criticised, while inviting comments from other knowledgeable readers. For researchers, the existence of such publications provides a wealth of information relating to a subject, and are absolutely necessary in some instances in order to proceed with practical applications, or even as a starting point for further study (Valauskas 1997:Internet).

From the wide-ranging discussions over the past decade and more, it is clear that the necessity for having scholarly journals is basically independent of the medium: whether printed on paper or produced electronically (Valauskas 1997:Internet; Willis 2003:Internet). However, the medium used has the effect of setting parameters and establishing both limitations and potentials for the content: ranging from appearance, coverage, convenience and communication aspects to costs. In fact, the issue of costs appears to be a fundamental factor in the publication of all journals: paper based and the e-varieties, including scholarly journals.

IS THE DIGITAL SCHOLARLY JOURNAL IN ITS CURRENT FORM AT THE CROSSROADS?

Valauskas (1997:Internet), in reviewing the diversity of e-journals over the previous five years, predicted the extinction of traditional academic journals in their well-established print formats. This termination is in favour of a rich variety of media which would allow a far greater degree of sharing, debate and communications amongst the readership – evolution but not revolution. Generally the digital scholarly journal has remained important since it is not about communications as such, but about validation and acceptance into the community of knowledge by peers and experts – so just because the whole process of publication has been accelerated by the Internet, the significance of peer review has not been altered (Valauskas 1997:Internet).

In a wide-ranging and very comprehensive discussion of this and related issues, Willis (2003:Internet) evaluated the then current situation in publishing as a bridging phase between the traditional printed version and the vast potentials of the electronic format. In his view any evaluation of the electronic scholarly publishing scene was dependent on two aspects.

Firstly, the technical and infra-structural problems relating to publishing electronically, using the Internet and linking in with web sites. Many e-journals were limited in their design, layout, and typographic possibilities, although the technology has been evolving towards a far greater degree of flexibility, versatility and overall user-friendliness (Valauskas 1997:Internet).

Similarly for the human and organisational aspects of electronic scholarly publishing, Willis (2003:Internet) indicates that ‘... a paradigm shift (revolution?) does not generally take over a field completely in one generation’. Further, there would be a wide range of responses during the transition phase: from those looking for improvements to others resisting the move from their comfort zone.

Willis (2003:Internet) considers that this period is in the middle of such a paradigm shift in scholarly publication, and that “some of the resistance and hostility expressed in the literature about e-journals is more a reflection of the social and psychological aspects of change than a rational, objective evaluation of the options”. Willis (2003:Internet) refers to both Kuhn and Feyerabend in describing a situation where rational analysis, although superficially there, is just a facade for decisions made using other kinds of input. Much of the discussion over the relative costs of publishing print versus electronic journals according to Willis, is of this type and thus, high emotions and considerable disagreements are more than likely, while the transition period lasts. Apparently this situation has continued over the past decade till the present time.

In addition, the importance of the control over accessing and reprinting published works had not yet reached the critical level it has now attained.

Although university tenure committees have reflected the more staid outlook that requires a respectable number of articles in print (on paper) to underpin any applications for tenure in a university teaching post or promotion, this has gradually given way to a far greater acceptance of electronic scholarly journals, especially in the UK, so that the primary functions of the academic journal will continue in this new form with official approval (Lewis 2004:Internet, Willis 2003:Internet).

Harnad frequently published controversial viewpoints for more than a decade in pushing for radical changes in publishing digital academic journals. In order to get around the various complexities of this situation, Harnad suggested that academics make greater use of the Internet, and use the freedom to their own advantage.

Clearly a form of crossroads exists, but not directly relating to the importance of the scholarly journals themselves and their purpose, but instead relating to how they are to be published, administered and funded. The publishing and accessing of scholarly information will persist indefinitely, while the digital scholarly journal will continue to evolve from its current form, in realising and achieving the wide-ranging potentials of the electronic format combined with the Internet. There is no abrupt change in direction as such to be expected but a relatively smooth and gradual development on content and main purpose. Even the controversy, mainly over money, will re-adjust using new models.

WHAT ARE THE CURRENT DIGITAL JOURNAL'S STRONG AND WEAK POINTS?

There are several levels of discussion in determining these points: the evaluation of digital academic journals ranges from how they compare to printed journals from a user's perspective, to the differences from the publishing standpoint, and to the different costs structures.

Strong points

The following are the most obvious strong points of the digital journal:

- Speed and interactivity are the two most immediate and significant strong points of digital journals, and for the academics, this allows for heightened functioning: the assessment and revision of articles are rapid. Fast publication and immediate communication globally, allows for a quick turnaround and responses from the readership (Valauskas 1997:Internet; Willis 2003:Internet).

- Further, from the possibility of distributing pre-prints to the ability of accessing the complete archives of a given title on a website or database, and be able to transmit these immediately if required, there is a tremendous advantage over the printed versions (Valauskas 1997:Internet).
- Possibly the potential of the digital journal is a strong point yet to be realised more fully, for example, using multi-media.

Weak points

Like the strong points, it is only by comparing with alternatives that the weak points really emerge.

- Printed journals are more convenient, comfortable, portable and aesthetically pleasing to read, and require no power source (Willis 2003:Internet).
- From a reading perspective, some 40% or more of the information on a computer screen is lost, while paper can hold up to 50 times more information for a given area. One reads as much as 25% to 30% slower on a screen. Further, there is a limit to the amount of digital text a reader can assimilate easily (Willis 2003:Internet).
- Some university faculties still prefer their academic staff to publish in print journals when considering promotion, tenure and merit evaluation.
- Authors of articles might struggle with software problems in preparing work for e-journal publication.
- Problems relating to what constitutes 'finished' work aside from a specific publication date.
- Publishers of an e-journal, if commercial, have control of the content.
- Costs of different kinds:
 - Access to computers and the Internet could be expensive, even if possible, e.g. emerging economies have infra-structural problems.
 - Libraries may consider microfiche adequate, and may not have unlimited access to the Internet.
 - Payment to publishers and/or subscription payments (tolls) are necessary to gain access to current and previous articles.
 - Publishers controlling access to archives, and limiting distribution, are able to manipulate the situation to their own commercial advantage.

According to Willis (2003:Internet), “there may indeed never be a point when electronic scholarly journals completely replace their paper counterparts [since] each serves different functions for multiple audiences within a discipline”.

STRONG AND WEAK POINTS OF HARNAD’S IDEAS

Harnad (1995a:Internet) used the experiences of physicist Ginsparg (1996:Internet) at Los Alamos and the development of a very active email network that allowed a massive exchange of research papers, as an indication that scholarly communication has been undergoing a revolution. The primary objection made by Harnad against the traditional (post-Gutenberg) publishing model was the ‘Faustian bargain’ where academic authors gave up their copyrights to commercial publishers merely to reach the readership.

However, such publishers would gain also by charging subscribers to read the journal. (In fact, Harnad considered this an acceptable situation for trade authors who were paid for their work).

This scenario has applied to electronic journals as well as print versions. Harnad (1995:Internet) recognised that the prevailing system – expensive, with limited access due to high prices, and long delays in publication – did not favour the author (actually the most important factor), and he proposed that scholarly papers should be available as preprints in electronic format to break this stranglehold. Willis (2003:Internet) sums it up as “Harnad believes that ‘What scholars ... need is electronic journals that provide (1) rapid, expert peer-review, (2) rapid copy-editing, proofing and publication of accepted articles, (3) rapid, interactive, peer commentary, and (4) a permanent, universally accessible, searchable and retrievable electronic archive’”. Objectively, Harnad (1995a:Internet) was able to analyse the situation and give power back to the primary force, the author, after considerable effort and upheaval in academic circles. Certainly the readers of all kinds would benefit – provided they had access to the Internet, and at a cheap rate.

But there were two important issues that initially stood against this enlightened approach in the conservative academic world with its motto “publish or perish”. Firstly, the need to have the peer review process as an unimpeachable mechanism and as a necessary intermediary between the author and the readership of the digital scholarly journal. And secondly, the question of costs and payment – probably the weakest part of Harnad’s arguments at that stage, but since justified (Harnad 2004:Internet).

Harnad suggested that the government and/or the user institutions s/would support such an initiative, since the Internet as well as many of the reviewing experts and others were free or at low cost, and the author even could underwrite the small amounts necessary.

Harnad further had the vision, along with Odlyzko (1994:Internet), that the electronic scholarly journal could be something far better, and greater than the traditional print journal,

especially with the potential of using multi-media and hyperlinks (Harnad 1995b:Internet, Odlyzko 1994:Internet and Willis 2003:Internet). Further, Harnad (1991:39) perceived e-journals as the 'fourth revolution in the means of production of knowledge', following the developments of the spoken language, the written language, and the movable type printing press. Clearly Harnad was (and is) enthusiastic about scholarly debate and certainly claimed that retaining the rigor, discipline and permanence of the refereed written medium was essential, as he demonstrated in the e-journal he edited, *Psychology*, allowing 'open peer commentary'.

OTHER PUBLISHING MODELS

According to Willis (2003:Internet), various other pricing schemes emerged to deal with the issues arising from the publication of journals, without depending on the commercial element that removed control over copyright, and archive access from the author.

John Hopkins University Press had a commendable pricing scheme used for journals in their *Project Muse*, where the subscription rates of print and electronic versions of the journals were based on the publisher's cost of producing the version (base cost plus costs associated with that version).

Another worthy model was that of MIT Press for the pricing of their *Chicago Journal of Theoretical Computer Science*. Institutions were charged \$125 as a base cost because the journal was distributed electronically and readers printed their own copies locally (Willis 2003:Internet).

Another model described by Willis (2003:Internet) referred to the 'many successful e-journals that do not charge for the electronic version of the journal, for instance *Postmodern Culture*, a refereed journal with two editors and a review board'. Subscription was free, due to the financial and technical support given at their institution, a university, but a small charge was levied for diskettes and microfiche, and also postal charges (Amiran & Unsworth 1991:Internet.)

Harnad suggested that consortia comprising libraries and scholars should be formed to pay the far lower costs of electronic publication in advance, resulting in a product that could then be free to all, thus avoiding the pressures exerted by commercial publishers (Harnad 2004:Internet).

Willis (2003:Internet) summarised the situation in tabular form, clearly reflecting the nature of the value being added at each stage for a variety of models. This one (Table 5 in his work) indicated the possibilities when using the Web.

Willis (2003:Internet) indicated that while the first three aspects of scholarly aspects remain unchanged, and easily performed by faculty members as regular work, the significant issues of publishing, marketing and distribution were easily accomplished over the Internet via a website, and is far cheaper than the typical commercial model. Further, the overheads of running this at a university would be minimal, as being a variable expense in running a computer centre to benefit the whole institution. Hence the university could support e-journals without any additional equipment needed.

Table One new model of scholarly publishing based on the World Wide Web

Function	Done by	Paid for by	Value added
conduct research	faculty	grant/faculty	new knowledge
generate paper	faculty	university	knowledge
peer review	faculty	university	quality
publish	Web group	university	structure
market	Web group	university	awareness
distribute	Web	n/a	convenience
archive	Web/library	university	accessibility

Source: Willis 2003:Internet

Or, if necessary, a 'Web Group' could be a professional society, university press, or whoever is able to provide the editing and design infrastructure required by the scholarly journal – again, possibly in-faculty.

CONCLUSION

Finally, the answer to the primary question of 'is publishing of scholarly information at the crossroads?' is 'yes and no'. There is a change coming, but it is unlikely to be an abrupt swing to a new direction, as implied by a 'crossroads' metaphor. The influence and profound effects of the Internet must in turn affect all forms of communication, some more than others.

The usefulness and purposes of scholarly journals remain, independently of how they are presented, published or circulated. As discussed above, their primary aims are to support research and academics in specific ways, and thus encourage the dissemination of audited and worthwhile information to add to the body of existing knowledge.

The more explicit and substantive changes will occur in the costing models, and thus also affect the distribution. Part of this is related to each particular discipline. As discussed by Valauskas (1997:Internet) there are very different styles of communication between scientists (say) and in the humanities, for instance lawyers. Differences are found not only in content obviously but also the approach in terms of verification, debate and consensus. However, the need for interaction remains a constant for all, as does the essential role of access to archives of previous works.

Results from the Delphi survey of expectations (Keller 2001:Internet) agree broadly with these conclusions. Journals are likely to vary considerably, as will the payment structures, and the role of various players such as libraries. However the expectations on the pricing models differ quite substantially and no real consensus was obtained at that stage.

But other forces have been at work, and gained momentum in the few years since Keller's research. Already there has been the surge towards 'self-archiving' suggested by Harnad. As recently as July this year, the UK authorities officially recommended that "all researchers should self-archive their papers within a month of publication, and that universities should be funded to provide the facilities to allow them to do this" - part of the Open Access (OA) movement (Lewis 2004:Internet).

Further the worldwide coordinated movement to make full-text online access to all peer-reviewed research free for all is now well established. Canada and Scotland join the UK, US, Australia, India and Norway in edging toward mandated self-archiving as one of the possible OA methods. Declarations to proceed in this direction have been made already by these countries, while France, Germany, and possibly the Netherlands and others are clearly on the same path (Lewis 2004:Internet).

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