Scholar as e-publisher: the future role of [anonymous] peer review within online publishing

Thomas H. P. Gould

How to cite this manuscript

If you make reference to this version of the manuscript, use the following information:


Published Version Information


Digital Object Identifier (DOI): doi:10.3138/jsp.41.4.428

Publisher's Link: http://utpjournals.metapress.com/content/022j474x7176wh8m/
Scholar as E-Publisher: The Future Role of [Anonymous] Peer Review Within Online Publishing

The advent of online journals has opened a vast opportunity for small journals published by a variety of institutions, non-government organizations, and universities. It also has provided scholars many more options, from more general to far more niche journals addressing very narrowly defined subjects. This shift toward online journal publishing has been constant and irresistible. Starting in the mid 1990s, publishers of print journals began putting all or some limited amount of content online, available usually through subscriptions paid by university libraries. Being precise about the start of strictly online journals is more difficult; that is, finding exactly which journal was the first is not an easy task. What can be said with some accuracy is that at the turn of the century, a few, small online-only journals appeared, usually sponsored by a university or foundation. Soon to follow were dozens, then hundreds of specialized online-only journals.

A comprehensive examination of all academic journals by the Association of Research Libraries (ARL) tracked the upsurge in publication of scholarly research online. The January 1991 edition of the ARL Directory of Electronic Journals reported 110 journals online, likely accessed via File Transfer Protocol (FTP), since the web was a few years away. By 1998, that number had jumped to more than 6,000 (Mogge 1999). By 2007, the ARL reported that 60% of 20,000 peer review journals were available online in some form (Johnson and Luther 2007). A major publisher of journals, EBSCO, noted in February 2008 that almost 18,000 of its academic journals and newsletters were available online, either through library subscriptions or open access (EBSCO 2008).
The shift online of print journals and the appearance of online-only journals has been warmly embraced by younger faculty members. “Scholarship, particularly in science, is becoming increasingly born-digital and networked digitally” and younger users of library and other research sources overwhelmingly prefer electronic access to journal research compared to print (Ware 2005). Ware noted a conversation with a librarian at a large research library: “The librarian concluded [from a study he had conducted] that on present trends, there would be little demand for print journals within five years.”

Concurrently, at least one major grant provider—the National Institutes of Health—are requiring funded research be publicly available. NIH’s requirement specifies that this research be posted online after one year at an academic journal, whether that journal is for-profit or open access (The National Institutes of Health Public Access Policy, 2008). Thus, after some period of time appearing within a “traditional” environment at a journal, the research would be spun out to the public, typically within a university “d-Space” server specifically designed to hold such works. It would be hard to imagine that this new requirement of publishing would not spread to other areas of research funded by public funds, and beyond that, to other research funded by private foundations.

So, over time more research will be published using the same functional structure, except that no physical printed copy would be generated by a publisher. Given this digital “publication” format, what prevents the research from stepping around the journal phase and going directly to the university server? That is, will research at some point avoid the journal and go directly to some open environment? And, if so, how will academia estimate the value of such work (that is, peer review)? The purpose of this research is to discuss the rise of online
journals, the historical role of peer review and anonymous peer review, and then push further and propose a future, more narrowly defined/refined publishing/evaluation model.

**Online Journal Publishing: a Recent History**

The role of an academic journal has been defined by numerous researchers. However, few, if any, have noted that an academic journal provides a shortcut for researchers looking for prior discussion and data in their area of interest. That is, before search engines and library databases, researchers in mass communication could count on *Journalism History* to be a place where they would find, well, articles dealing with the history of journalism. This seems rather simplistic. However, it might be seen as the first role of academic journals to be supplanted by searchable, electronic databases.

Thus enter the next phase of traditional academic journals: online publications that eliminate the need to actually create a printed form of the research. And, while only appearing a few years ago, online research publishing is no longer an adolescent in the academic world. We are past the point of wondering whether research of the future will be published online, as pointed out by Peters in more than a decade ago (Peters 1995). We are not yet fully to the phase of “scholarly skywriting” suggested by Harnad at the time, wherein researchers—through university libraries—would post their as-yet-unfinished articles online seeking comment and improvement (though this “commons” approach is fast upon us) (Harnad 1995). And, while over-estimating the role of existing publishers in the online movement, Newby predicted in 1996 an author-as-publisher model that would eliminate the journal-as-publisher model entirely (Newby 1996).

This up tick in online journal publication has been related to three factors: economic, software development, and researcher preference.
Economic factors

Some of the economic issues outlined at a Stanford University Libraries colloquium in 2006 addressing the online journal movement included:

- The rise in cost of academic journals of 215 percent between 1986 and 2003, compared with a 68 percent rise in the consumer price index over the same period;
- For profit journals charged three times the per-page cost as non-for-profit journals;
- In four leading economics journals, 73 percent of all articles and 100 percent of the articles could be found for free online. (Palmer 2006)

Notably, two years before the Stanford colloquium, that university’s faculty senate had passed a resolution encouraging faculty to factor in the price of a journal when considering where to publish research. The colloquium itself was described as a response to the “crisis in journal pricing” (Palmer 2006). Indeed, many university libraries were developing strategies to deal with the “current cancellation crisis such as electronic document delivery, resource sharing and electronic journals” (Sweeney 1997).

Varian cites research suggesting the costs of a quarterly, special-purpose, non-technical academic journal print publication as roughly $120,000 per issue, with an estimated per subscriber non-profit fee of $200 and for-profit fee of $600 (Tenopir and King 1997). Add to that, he notes, Lesk estimated annual increase in cost for this journal of between 48% and 93% projected over a ten-year period (Lesk 1997; Varian 1998) together with an estimated per reader cost for some journal articles of $200, and the result is an economic model that is difficult to maintain.

Varian concludes that to reduce the cost of academic communication, the manuscript-handling process would require re-engineering. Using electronic distribution could cut costs within the editorial system by 50%. Add to this the reduction of shelf space in libraries, the costs
to monitor holdings, the ease of online searches, and the ability to store accompanying support
documents, such as images, data sets, and, though not mentioned by Varian, audio/video files,
and cost savings could be significant. “When everything is electronic,” Varian notes,
“publications will have much more general forms, new filtering and refereeing mechanisms will
be used, [but] archiving and standardization will remain a problem” (Varian 1998).

Clarke and Kingsley suggest that this movement toward an open access model would not
come without a “spirited” defense from the “For-profit corporations that have grown rich
through exploitation of their multiple- and mini-monopolies” within the academic publishing
world (Clarke and Kingsley 2007). The death-like grip of publishers over access to the research
expected at top-ranked university library was almost complete by the end of the millennium
(Loughner 1999), with annual prices increasing at alarming rates. University libraries at the turn
of this century consistently faced increased journal costs to just hold on to what they have, with
little or no room to add new volumes. Indeed, sit in on any faculty committee dealing with
university library holdings and the conversation almost always includes some discussion over
what journals will be kept, added, and deleted to fit the coming year’s budget. It is not a small
matter for some: the number of holdings in a library is part of the rankings of academic libraries
and universities (Stubbs 1986, 79-85), though the value of this measure may be fading

All this talk of creating new online journals has not go forward without some response
from traditional publishers. As noted by several researchers and news organizations(Howard
2007; Chillingworth 2007; Biello 2007; Giles 2007, 347; Pennel 2007), the publishing giants in
early 2007 hired lobbyists whose sole intent would be to discredit the open access movement,
while extolling existing publishing houses as the protectors of the peer-review system. As noted,
the response could be understood within the context of a perceived monetary threat most
publishers would see in online open access, as well, as a genuine fear of the unstable (perhaps
“unsettled” would be better descriptor) nature of electronic archives.

Software Development

Dozens of new software packages, many of them made available at little or no costs,
have made the labor of maintaining an online journal easier. This new software makes it
possible for any university, any academic department, in fact, any faculty member to establish
an online journal. All of the economics that reserved publishing to only the wealthy have been
reversed. In fact, the costs are so low that the single remaining barrier is often the presence of a
desire to create a particular journal, often a very narrowly defined one, one that could not have
been remotely reasonable less than two decades past.

Researcher Preference

A study by researchers at Drexel University showed a significant preference among
graduate students, but less adoption among faculty, for electronic materials over print journals
(Dillon and Hahn 2002). Two other researchers, tracking acceptance among faculty, found a
much higher rate, due in large part because of the 24/7 availability of research materials.

Our in-depth interviews with faculty indicate a high degree of comfort with
electronic access to journal literature. The scholars we spoke with clearly
recognized the convenience of 24/7 access from home or office. Like many
librarians, most faculty would prefer to retain print just in case, but when
confronted with forced choices, the overwhelming majority either supported
more electronic access at the cost of print retention or felt unequipped to make
this choice. (Palmer and Sandler 2003)
Two earlier significant pieces of research dug deeper than most. Varian’s “The Future of Electronic Journals,” presented at a conference at Emory University in Atlanta in April 1997, addressed the future evolution of online journals. Varian proposed a supply and demand model for publishing scholarly work, concluding that, for most universities, “The ability…to attract top-flight researchers depends on the size of the collection of the library. Threats to cancel journal subscriptions are met with cries of outrage by faculty.”

Given the economics, the software available, and the preferences of researchers (especially those younger), let us accept that, at some point in the near future, all academic research will be on a university server available to any researcher, without the need for registration or subscription fees. How would such research be vetted to ensure its quality? How would academic research articles published on a university’s d-Space be peer reviewed to assure only the best is actually publicly available? This is an interesting dilemma: what research, evaluated by what reviewers, within what matrix of control, actually makes it into the light of day? And, given that the research would still require editing and—presumably—review of some sort, what role might now “unemployed” academic journal editors and reviewers play in this new world?

**The Historical Role of Peer Review**

As Harnad suggested in 1998, the Faustian relationship between authors and publishers is a well-tooled model not likely to give way without a fight from some academic authors who mistrust electronic archives, or almost all “traditional” publishers who are deeply entrenched in the “Scroll Era” (Harnad 1998). This trust in the author-university-publisher-research model has its merits. The large publisher has a monetary investment in ensuring a journal is held to high
standards. Authors are assured full academic credit for appearing in the “right” journals. Universities can tout their researchers as “cutting edge.” Perceived failure to maintain such standards might lead to an exodus of authors, and, with that, a decline in author submissions and—possibly, though rare—library subscriptions.

Of course, to suggest that peer review has an august tradition, unspotted by controversy is a bit short-sighted. Roughly a quarter of a century ago, two professors tested the peer review process in place at 12 highly regarded academic journals in psychology. Twelve articles that had been published recently (18 months to two years) in each of these journals were resubmitted under fictitious names and institutions. The researchers reported that three had been caught as resubmissions, one was accepted and eight were rejected. The rationale for the rejections was, in many cases, that the articles contained “serious methodological flaws.” As the researchers noted at the time, “a major portion of the criticism of the journal review system has concerned the reliability of peer review.” The research suggested the high rejection rates of previously published articles might be related to author standing, institutional standing, peer bias, and poor reviewer performance (Peters and Ceci 1982).

Research published in 2001 suggested that women face a much harder time getting their articles published because of gender bias and nepotism on the part of reviewers and editors. These researchers suggested that to avoid the loss of a “large pool of promising talent,” the peer review process needed re-tooling to create “built in resistances to the weaknesses of human nature” (Wennerás and Wold 2001). Other researchers have found similar weaknesses within the peer system, a system that is intended to ensure that only the best research is published (Peters 1995; Dalton 2001; Mahone 1977; Neff and Olden 2006; Shulenburger 2001; Jefferson 2005).
Despite its frailties, peer review is still valued as a method used to sift out research appropriate for publication and blocking what might be considered inappropriate. This is model that academia has relied upon in one form or another for more than 400 years (Anonymous 2004a). As noted by the Select Committee on Science and Technology of Parliament in 2004, the concept of peer review within scientific research was started by Henry Oldenburg in 1655 to provide researchers a “publication run by an independent third-party that would faithfully record the name of a discoverer, the date the paper was submitted and a description of the discovery…” This publication, *Philosophical Transactions*, was owned by Oldenburg, but relied upon the Royal Society of London to provide peer review. Authors of scientific discoveries would flock to Oldenburg’s journal, secure in the knowledge their work would be shared, and “safe in the knowledge that their ‘rights’ as ‘first discoverers’ were protected” ("The Origin of the Scientific Journal and the Process of Peer Review." 2004).

Oldenburg's journal provided registration, dissemination, peer review and an archival record. These functions are seen today as the primary roles for any academic journal. What has changed in the last century is the manner in which peer review is conducted.

*The rise of anonymous peer review*

The exact beginnings of anonymous peer review is a bit more vague compared to peer review itself. Madden in 2000 attempted to put a date on the beginning of anonymous peer review. His research led to Jack Meadows, Professor of Information and Library Studies at Loughborough University. Meadows suggested to Madden that the anonymity in peer review was not in place until roughly the period immediately following the Second World War, a time in which many new journals were launched (Madden 2000). That this practice spans roughly 50
years does not suggest the model of anonymous peer review that is deeply engrained in the academic mindset. Yet, the battle between those who believe the anonymity of peer review assures only the best is published and those to suggest the model is rift with bias and error has raged for decades.

The presumed need for peer review and for anonymity of that review are separate arguments. The use of the opinions of learned researchers in a particular field as a benchmark for research publishing is not without its critics, as previously discussed. But this is a tradition reaching back centuries. The more recently adopted practice of anonymity of these reviews has generated even more controversy. Some have suggested that requiring reviewers to sign their opinions would lead to a lessening of standards, without any advantage. As argued by Rooyen, et. al., in their research in 1998, the “Blinding and unmasking made no editorially significant difference to review quality, reviewers’ recommendations, or time taken to review.” The researchers suggested “other considerations should guide decisions as to the form of peer review adopted by a journal, and improvements in the quality of peer review should be sought elsewhere” (von Rooyen et al. 1998).

An editorial in Nature in 2001 argued that, in spite of its failings, the system of peer review is sound and reliable.

As is the case with any process, peer review is not an infallible system and to a large extent depends on the integrity and competence of the people involved and the degree of editorial oversight and quality assurance of the peer review process itself. Nonetheless we are satisfied that publishers are taking reasonable measures to main high standards of peer review.(Anonymous 2004b)

However, others argue the anonymity allows for the equivalent of academic bullying and introduces a degree of “clubbiness” that has or should not have any part of academic research publishing. The tales are many of renowned scholars being snubbed in their early research—
research that, in later years, would be hailed, such as research by Mendel, Fourier, Krebs, and Waterson (Gordon 1977).

A scholarly journal can be likened to a club where non-members will not be told the house rules, but are expected to know them, and will not be admitted if they transgress.(Peters 1995)

Peer review also has been criticized as too slow, too harsh, preemptory, and unhelpful to the researcher (Neff and Olden 2006; Clark, Singleton-Jackson, and Newsom 2000; Guernsey and Kiernan 1999; Benos et al. 2007). Again, few researchers with any experience in submitting their work for review can say they have not received one sentence rebuffs. Peters likens it to a employer-employee relationship.

It is perfectly possible to make hard criticism in a way which others can consume. Granted, it takes more work. But how, for example, do you tell an employee you like and who is generally doing well and who has a great future that he or she has messed up? With care and empathy I think - because you want them to understand what they have done "wrong", and improve it, without getting disillusioned or hostile. As reviewers, we don't always take time and care to do that. (Peters 1995)

It is doubtful that Peters would suggest that the employer leave unsigned criticisms (anonymous peer reviews) on an employee’s desk. The ability to share suggestions in a “commons” area may lead not only to better work by a researcher, but, by extension, better research. “If replaced by a system of open commentary and ongoing revision, in which responsibility for quality control is shared by many rather than depending on the necessarily subjective judgments of a chosen few, … should not spell disaster…” (Godlee 2002). If the intent is to provide the best research results, why not provide the best critiques within the best environment, Godlee argues.
Newcombe suggested in 2002 that the first of five suggested “commandments” for peer-reviewed journals should require the judgment of “scientific articles only the validity of their logic and the strength of their evidence” (Newcombe 2002). She goes on to ask that academic journals adhere to the judgment and rules of their peer review systems (“despite all [the] problems … no one has invented a better alternative”).

Jefferson, the on the other hand feels its high time that peer review, as currently structured, be discarded. Quoting Richard Smith, former editor of the British Medical Journal, Jefferson criticizes peer review in the pharmaceutical industry as “a process that research has anyway shown to be an ineffective lottery prone to bias and abuse” (Jefferson 2005).

**A Suggested New Model: Online Publication and Revision**

The options for a future publishing model are numerous, if only because the economics make it so. This is probably best exemplified by Anderson’s Long Tail Theory (Anderson 2004), used most commonly to describe the impact of the Web on business models. The Long Tail also can aptly suggest a future for academic journals. With the cost of publishing a new journal dropping so low as to rely more on desire than funding, new journals of the mode exquisite nature will begin to appear. These journals may generate only handfuls of readers. They might reflect the desires of an institution, a university, a college, a department, or even a few faculty members. And, by itself, this new model of publishing might survive for some time, if it were not for the much more simplified model just on the horizon: direct publication by authors. However, both of these models will still require editorial staff and some minor technical support. From where will these funds derive? Perhaps in library subscriptions.
The desire for research to be available to a public that funds its creation will, no doubt, drive more and more articles to university d-Spaces, and, thus, be immediately accessible. The cost savings in new journal subscriptions to the university libraries eventually could run into the billions of dollars. This cost may be sufficient to provide the editorial support necessary to assure the material published is grammatically and in other ways accurate. In addition, these editors might add the infolinks that are used in many online journals to provide greater depth to the information presented (Gould, In Press).

But what of peer review? Let us consider three new models for the peer review of academic research within the assumption that the research in question has been published on a university’s d-Space server, either as a university-sponsored journal or by an author. In all cases, the journal or author will have notified appropriate peers of the publishing, though, in some cases, this may not be necessary.

**Peer Review by Rankings**

One method to provide researchers guidance in what research has met an appropriate level of competence is to provide a ranking, in many ways similar to that provided to movies. A group of researchers, who might be identified by what was once a publishing journal, say *Journalism and Mass Communication Quarterly* (JMCQ). These researchers would examine new research as published on university servers worldwide, and rank that research within levels of acceptability, or simply “pass/fail.” Appropriate links to the articles would be provided. The actual publishing of the journal (as well as the editing that would have preceded that publishing today) would occur elsewhere. In addition, the ranking could be accompanied by some
suggestions for improvement or areas of future research. This communal behavior could foster improvements in the research and in researchers.

This method would also result in quicker reviews, one of the most common complaints about the peer review system. The publishing of the work would allow for other groups to coalesce with the purpose to commenting on one work or a group. The collaborative nature of the reviews could be subject-driven in numerous ways. Why not a group that “meets” within a review structure to discuss the latest mass communication articles dealing with agenda setting? Or new survey methods? Again, this reflects the nature of the Long Tail Theory: the costs to gathering in small common areas of interest are minimal compared to the return in investment for those involved.

Peer Review within a Commons Area

While beyond the scope of this work, few universities in the world are not already supporting or contemplating the support of an academic commons. These areas are online communities supported by a university to foster collaboration among faculty. And, as might be expected, the come in all shapes and sizes.

The use of a university commons in regard to academic publishing might occur on two levels: pre-publication in-university review and post-publication comment. In the former case, colleagues within a university or department might be engaged in offering suggestions to researchers near publication. The article in question could be shared within an online “commons” that provides the ability for readers to offer comments and suggestions for improving the work.
In the latter model, the work could attract comments from academics outside the college or university. Of course, some control over the process would be required, most likely within a user group, much like the “manager” role in early Internet USENET groups.

**Peer Review within WebBlogs**

Finally, the manner in which the work is published within the d-Server space could incorporate weblogs, comments areas presented with the work itself. This has its precedents. One journal cited earlier in this work, *The Behavioral and Brain Sciences*, included the responses of more than 50 academics to Peters and Ceci’s research on prior submitted, resubmitted articles (Peters and Ceci 1982). The research was intended to reveal the flaws in peer review by noting that eight of nine of the articles that had been accepted roughly two earlier by these journals were rejected when resubmitted. Many of the responses to the articles were quite extensive, and, overall offered a lively discussion among researchers about the flaws in peer review (and the flaws in the research itself).

However, of all of those commenting on the articles, for and against, none suggested, for instance, that the science itself had moved forward and rendered the research of less value. Given the highly structure, “locked up” nature of print material, there is not opportunity to directly comment on the research as in error for some reason. Instead, research is criticized more indirectly, typically in later published research. Within a static, in-print environment, the ability to update, revise, correct and improve research is not possible. What is printed is printed, and may be cited forever, despite whatever confounding information might arise. It is up to a researcher to find all possible confounding information, rather than simply seeing it along side the research in question. Additionally, the ability of a researcher to defend published research is
similarly tied up in new publishing that may, or may not, be found by those reading the initial criticism.

This new publish-and-review-by-all model may be the most controversial: it suggests that research once published can be modified, essentially corrected based on comments outside of the traditional group of select reviewers. Of course, it also might suggest that the progress in any field might depend upon the aggressive collaborative commentary offered in an open market.

What this model of allowing a more direct commentary and then modification of published research (in ways that would preserve the original work) would require a more nimble academic community, one willing to see the ultimate goal as progress. In many ways, the suggested model of publish-and-review-by all might feel and look very much like a webblog, where ideas in postings are immediately challenged, and, perhaps, corrected. This type of research environment would be vital, interactive, and far richer than the, by comparison, very static and, it must be admitted, slow publishing environment (even online) we have today.

Bibliography


Palmer, Barbara. *Ongoing Crisis in Academic-Journal Pricing is the Focus of Recent Colloquium: Attendees Agree High Costs of Subscriptions are Unsustainable and*


Ware, Mike. "E-Only Journals: Is it Time to Drop Print?" Learned Publishing 18, no. 3 (2005): 193-199.