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Electronic Journals: A Place for Women to Publish?

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"Economics and technology now dictate a shift from print to cyberspace and make electronic publication inevitable."

Academic publishing in North America has existed in its current form for more than two centuries. For most disciplines, the journal article remains academe's stock-in-trade. Tradition as well as institutional policy play pivotal roles in "publish or perish," and decisions about hiring, promotion, and tenure often rest on the candidate's publication record. The format of the published work, the quality of the journal, the publication peer review process, copyediting, typesetting, and the finished look of an article in print all contribute to the authority of published research (Tomlins, 1998). The process of "getting into print" is arduous and can consume a year or more. Proponents of electronic journals say that this slow process creates a body of literature that is outdated at publication. In contrast, electronic peer review proceeds quickly, and anyone can self-publish on the World Wide Web. Many scholars object to the time the peer review process absorbs and predict the demise of print journals in libraries due to expense, shelf space, availability, turn-around time, and the costs of preservation. Although technology can place information at a researcher's fingertips almost instantly, scholars are concerned about other academic issues that involve the quality of the research and publication.

The Evolution of Scholarly Electronic Publication

Stevan Harnad referred to electronic publication as "scholarly skywriting" (Harnad, 1991). Harnad outlined the first three evolutionary stages in the development of human communication-speech, writing, and printing (the Gutenberg era). He called the current stage "the post-Gutenberg Galaxy" or "the fourth revolution." Both Ann Okerson and Stevan Harnad noted that scholars chafe at the time lag in writing, peer review, publication, and citation in the print journal process (Harnad, 1991; Okerson, 1991). In 1991, Okerson counted 30 electronic journals and 80 electronic newsletters. Most were in LISTSERV format. Four years later, McEldowney located 300 electronic journals and 400 electronic newsletters and predicted that by 1998 more than 3,500 journals and newsletters would publish electronically (McEldowney, 1995). Harter and Kim wrote in 1996 that many of the known LISTSERV journals had moved to the World Wide Web (Harter Kim, 1996).

In the same article, Harter and Kim reported the results of the most comprehensive research on the quality

of Web journals to that date. They combined the listings of two indexes for electronic journals on the Web and discovered that only 131 publications actually qualified as refereed academic journals. They then determined that 72 percent of those publications posted with sufficient regularity during the period of the study to qualify as electronic journals. Only 45 percent of the remaining 95 journals in the study could be accessed on the first attempt. The researchers uncovered numerous technical problems once in the directories of the journals that included missing or misspelled URL's and changes of address with no forwarding URL's. The articles also contained errors such as inoperative links, missing references, and unverifiable data. Of the 131 electronic journals in the original sample, only 56 percent met the following criteria: (a) scholarly and peer-reviewed, (b) accessible, and (c) published with references (Harter Kim, 1996).

Copyright and Intellectual Property

Based on an example from Burbules and Bruce, the following example demonstrates complex ethical and publication issues (Burbules Bruce, 1995). Suppose that a scholar posts an article to the Web. Other scholars e-mail her and she revises the article extensively, sometimes using cut and paste. She publishes an article in an electronic journal and based on commentary from the readers, writes a second article that is published in print. When was the first article actually published, when it was posted to the Web or when it appeared in the electronic journal? Who is the author? Did plagiarism occur? Who were the reviewers? Was the article refereed? To what extent should the authors of commentary receive credit for both articles? What are the copyright and intellectual property issues that involve these articles? While the scope of this paper does not provide answers, it is important to debate these questions when considering the professional ramifications of electronic publishing. Along with the quality of publication and access issues, some of these questions form the basis for the academy's hesitation to accept electronic publication as evidence of scholarly productivity for promotion and tenure review.

The Triangle Research Libraries Network (TRLN), a joint committee of faculty, librarians, and university press editors from Duke University, North Carolina State University, and the University of North Carolina at Chapel Hill, authored proposed policy changes in 1993 (TRLN Copyright Task Force, 1993). The committee advocated policies that allow authors to retain their copyrights while encouraging the institutions to electronically publish the results. Their policy stated, "Returning ownership and control of the research results to the institutions and individuals who generate them in the first place is a critical first step in moving toward a future where research results are peer reviewed and then disseminated electronically to the worldwide scholarly community at reasonable costs" (1993, p.15).

Harnad (1997) argued that authors are paid for their scholarly work in terms of tenure, promotion, travel benefits, and research grants, therefore objection to assignment of copyrights to publishers is without merit. Harnad also noted that the scholar's relationship with publishers is vastly different than the relationship that authors of other genres have with publishers, and believes that copyright will have little or no meaning if open access applies. He emphasized e-print, a method by which scholars post articles to a site, and other scholars contribute their comments. The original author can then revise the article and post it to an electronic publisher or a print publisher. Thus far, most print journals reject this procedure on the basis of questionable authorship and argue that the article was previously published on the Web (Guernsey Kiernan, 1997). Tenure and promotion committees also do not respond well to the electronic form of collaborative authorship. However, many scholars view e-print as a legitimate method of distributing papers to colleagues for comment prior to submitting the paper for publication.

Economics

Institutions of higher education inevitably pay for research twice--first, in the form of faculty salaries, and then for library journal subscriptions (Guernsey, 1998). To provide research facilities, academic libraries

must maintain adequate numbers of journals in each discipline, even if the publisher inflates the price. Libraries can now spend thousands of dollars for a year's subscription to a single journal. Three years ago that same journal might have cost only a few hundred dollars (Association of Research Libraries, 2000; Wilson, 1998). This situation is particularly true of journals in the hard sciences and medicine; in fact, an annual subscription to a medical journal can exceed \$15,000 (Wilson, 1998). In the classic sense, print journal publishers might be biting the hand that feeds them. Richard W. Meyer argued that as publishers increase the price of print journals to libraries they lose some sales, but more than offset those losses with gains due to inflated pricing (Meyer, 1997). Libraries now turn to electronic journals to reduce the overall cost of journal subscriptions.

Many academic libraries compile their own electronic journals, creating "virtual" or "digital" libraries. Johns Hopkins University received funding from the National Endowment for the Humanities and the Mellon Foundation to initiate Project Muse. Nearly 400 libraries currently subscribe to Project Muse, which provides access to 42 databases that feature electronic journals. Of those subscribers, approximately 80 percent enroll through library consortia. Project staff log 3 million users each quarter and process nearly 30,000 requests daily, as of January 1997 (Neal, 1997; Varian, 1997). The pressure to "publish or perish" places scholarly authors in a poor bargaining position.

Whether the costs are charged to the library, to an academic department, or are incurred through faculty salaries, institutions almost always bear the expense of research and publication, unless the researcher has grant funding.. In fact, the economics of publishing could change rapidly as electronic publishers charge authors, not subscribers, for publication fees.

Two Models

Two models for electronic journals have rapidly evolved. The first model mimics the print process with paid subscriptions, a lengthy peer review, and archival processing on paper rather than electronic format (disk, CD). The second view predicts a more fluid process: electronic writing will dominate publishing and publications will be freely available to everyone. Peer review, while still essential, could take a variety of formats, and utilize methods such as e-mail, LISTSERV, and e-print, a form of posting on the World Wide Web that invites commentary. Although Harnad (1991) advocated the second model, Okerson (1991) believed that both models would coexist for some time. These models are at the heart of a controversy among researchers who support electronic publication.

The Two Models and Senior Faculty

Although university policies concerning tenure and electronic publication remain open, senior faculty continue to resist the medium (Collins Berge, 1994; Kubly, 1996; Langston, 1996). Their reluctance to accept articles published in electronic journals directly affects faculty voting in personnel decisions. Genuine concern about the quality of electronic journals, even without analysis of research methodology and writing style, lead to skepticism about consideration of electronic publications for hiring, promotion, and tenure review. To attain the status of print journals, Kristin Hede Kubly argued that "online journals must maintain the rigorous standards that print journals have employed" (Kubly, 1997, p. 275).

However, scholars such as Bernard J. Hibbitts (1996) and Terrence A. Brooks (1999) advocate electronic journals that can and should exploit the Web's full capabilities. This technology includes interactive forms, animation, sound, and video programmed in languages like JAVA, JAVASCRIPT, and PERL. But most faculty are still testing the electronic waters and the ambivalent atmosphere inhibits progress. Meanwhile, junior faculty hesitate to publish electronically because they do not know if their committees will consider their work for tenure review. As David A. Rier noted, "Now it would be a fine thing indeed if articles were written for their own sake. But Web technology does not alter the fact that professors,

especially those not yet tenured, can ill afford to 'opt out' of a game that determines their professional fate" (Rier, 1996, p. 205).

Women particularly find themselves caught at cross-purposes. According to the Chronicle of Higher Education (August 27, 1999, p.38) in 1995, women made up 35 percent of all full-time faculty. The vast majority of women in academe are untenured and fill the lowest academic ranks. Sixty-four percent of all the women in the academy are lecturers, adjuncts, instructors, and not-yet-tenured assistant professors. Women make up more than half of the faculty in the instructor and lecturer ranks. Without the full support of their institutions, these professionals have difficulty in obtaining grants, conducting research, and having papers accepted for publication (Enos, 1991). The presence of women in the ranks of senior faculty is disproportionately low; only 18 percent of the full professors and 32 percent of the associate professors are women. These figures were released in 1995; the numbers are believed to have declined since that time.

A number of studies demonstrate that women publish fewer articles than men (Creamer, 1998), receive fewer citations (Sonnert Holton, 1996) and have more difficulty in breaking into print than do their male counterparts (Enos, 1991). According to Enos, a scholar in the field of Advanced Composition, women also tend to publish in less prestigious journals than men and tend to publish programmatic articles rather than theoretical articles (1991). Because electronic journals are a relatively democratic form of publication, it could be tempting for women to publish in this media. Many women authors with technical backgrounds would like to publish electronically, but are concerned that the time spent writing an electronic article would be better spent in pursuing print publication, which also has the payoff of acceptance in tenure review portfolios (Langston, 1996).

Changing Policies: Hiring, Promotion, and Tenure

Economics and technology now dictate a shift from print to cyberspace and make electronic publication inevitable. Given faculty preference for print publications, the demise of print journals will not occur as rapidly as some proponents of electronic journals predict. However, the climate of uncertainty creates a dilemma, especially for women faculty. Is it better to publish more research articles electronically to increase the total number of publications and hope that the tenure committee will consider electronic articles? Or should tenure-track women faculty submit their research to a print journal and allow the article to wind its way through the review and publication process?

Many junior faculty, women among them, are considering electronic publication. Electronic journals, particularly those hosted by academic digital libraries, attempt to obtain articles through the institution's faculty. But there is no guarantee that the candidate's tenure committee will accept the electronic article as evidence of scholarly excellence. If accepted as part of the portfolio, will the article be judged on the same merit as print articles? Consider the cases discussed below.

In 1998, the Pew Charitable Trusts, the Association of American Universities, and the Association of Research Libraries co-sponsored a series of national meetings attended by university provosts, librarians, and scholars. The meetings culminated in a proposed plan that involves peer review for certification of articles (Wilson, 1998). Each university would appoint peer review panels within every academic discipline to examine articles for certification. If certified, the articles could then be considered in promotion and tenure proceedings, even if the author does not pursue publication. Authors could electronically publish in their university's digital library. This controversial arrangement has met with mixed reaction among the universities represented at the meetings, although Caltech has taken action on a radical new policy of its own.

In September 1998, Caltech asked its faculty to retain their publication rights rather than assigning the

rights to publishers. If publishers decline to print the articles without the rights, Caltech's administrators hope that faculty will publish in the library's electronic system (Guernsey, 1998). Unlike other institutions of higher education, Caltech's position is unique because its niche is applied science. Traditionally these disciplines weave networks with industry, government, and private institutions. These relationships allow the applied sciences a measure of independence that other disciplines do not have.

Further, the electronic journal garners far more acceptance in the private sector than in public higher education. At companies like Boeing Aircraft and Battelle Laboratories, electronic journals form the standard and are often condensed in the corporation's digital library before being posted as electronic digests to subscribing engineers (Fidel Crandall, 1998). Obviously, the culture of applied science supports the electronic media and encourages academic faculty to publish electronically. Men traditionally dominate the applied sciences, and so a great deal of networking supports acceptance of electronic publication in engineering. But what about the liberal arts and education, academic areas where more women can be found? Academic fields in these disciplines lag far behind engineering and physics in acceptance of the electronic journal. Arts and education also constitute some of the academic areas that are most likely to resist acceptance of electronic publications for tenure review.

If institutions of higher education strongly support the development of electronic publishing, policy changes could convince senior faculty to alter their opinions about electronically published articles. When surveyed in1995, less than 3 percent of all faculty respondents stated that they had submitted articles to electronic publications. Of those surveyed, 62.4 percent indicated that they did not favor the use of electronic journals for promotion and tenure review (Budd Connaway, 1996). Much has changed over the last few years. Tenured faculty exercise influence; they can call for tighter standards in electronic publication-standards that lead to the consideration of articles published electronically for hiring, promotion, and tenure proceedings (Kubly, 1996).

While untenured women find themselves in a precarious position, tenured women enjoy more freedom in their choice of media. Senior faculty often evaluate the records of tenured candidates for promotion to full professor on benchmarks other than their publication records. In interviews conducted in 1998, three department heads stated that national reputations, research grants, and professional service were as important as the publication record to a tenured candidate seeking promotion to full professor (Tescione, 1998). Senior women faculty could play a strong role in electronic publication. They can publish electronically and encourage their colleagues on tenure committees to accept electronic publication in tenure review portfolios. Members of tenure committees should consider electronic journal articles to be on the same par as the print counterparts. Just as faculty evaluate each print article on the merit of its research content, electronic articles should be assessed by the same standards of quality.

Outside peer review of previously published research forms a cornerstone for promotion and tenure review (Bednash, 1991). The current system trusts senior scholars in other institutions to empirically analyze the work of junior faculty and to comment on its quality beyond the scope of writing style and format. Strong research that is well-written remains good research, whether it is published electronically or in print. The tenure and promotion system relies on the opinions and thoughts of senior scholars, regardless of the media used in publication. Although the media should be irrelevant, the quality and accessibility of the publication is crucial (Collins Berge, 1994). Economics and technology now dictate a shift from print to cyberspace and make electronic publication inevitable. Many top scholarly journals now appear in both electronic and print format (Kubly, 1996; Langston, 1996).. Institutions of higher education and their senior faculty should respond with open minds to urge viable standards of excellence for both media and to accept electronic articles on an equal footing with print articles in hiring, promotion, and tenure proceedings.

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