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# Electronic Journals in the Humanities: A Survey and Critique

MICHAEL E. STOLLER

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## ABSTRACT

IN RECENT YEARS, as use of national computer networks has expanded, certain list server groups have begun to emerge as electronic journals. This article provides an overview of the electronic journal as a phenomenon in scholarly communication within the humanities—a description of the journals that are currently available, a broad examination of the issues they raise for libraries, and some possible responses to those issues.

## INTRODUCTION

In 1665, when the learned gentlemen of London's Royal Society began publication of the *Philosophical Transactions*, they assigned their new journal the extraordinary subtitle: "Giving some accompt of the present undertakings, studies, and labours of the ingenious in many considerable parts of the world." Few modern periodicals would lay claim to such scope, but the essential function of the scholarly journal has not otherwise wandered very far in these last 300 years. It is still about communication.

In recent years, as increasing numbers of scholars have found their way onto the principal academic computer networks, Bitnet and Internet, electronic communication has begun to take its place among the established methods by which scholars communicate. Inevitably, much of that communication has been one-to-one over electronic mail. But the list server capacities of academic mainframe computers, and sometimes just the patient hard work of a few scholar/hackers, have offered the additional ability to communicate in groups.

Michael E. Stoller, Columbia University Libraries, 228 Butler Library, 535 West 114th Street, New York, NY 10027

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Some such groups have remained relatively informal message-posting media like electronic bulletin boards or newsgroups. Others have formulated specific topical discussions as electronic seminars and conferences. Some have become electronic newsletters serving particular organizations or groups. But, within the past two years, a few of these list server operations have taken on a new formality, appearing at relatively predictable intervals, numbering and dating their issues, forming boards of editors, and refereeing the articles and reviews submitted by contributors. As such, a category of communication has emerged that can justifiably be termed the *electronic journal*.

This article is intended as an overview of the electronic journal as a phenomenon in scholarly communication within the humanities—a description of the journals that are currently available, a broad examination of the issues they raise for libraries, and some possible responses to those issues. Inevitably, in trying to do so much, the article will do too little. Doubtless some titles will be missed, and some issues that may occur to others will not have occurred to this author. But the fundamental purpose here is to provide a broad context for discussion of the electronic journal, and, with luck, the gaps left by this author will only serve as an incentive for others to continue the discussion.

### CURRENTLY AVAILABLE ELECTRONIC JOURNALS

At the outset, it is useful to say something about the online formats from which electronic journals emerged and from which they are still not always easily distinguished. This is no simple matter. As with the term *electronic journal*, the labels applied to the various forms of online communication are borrowed from other modes of interaction, and the match is largely subjective. Terms like *bulletin board*, *discussion group*, *conference*, and *seminar* are not meant to be hard and fast definitions but only to evoke a sense of how these various list server operations intend to function. Nonetheless, being mindful of these limitations, it is possible to apply some categorical parameters to these media by talking about several factors—editorial mediation, subject coherence, and formality of presentation. At the outer limits are bulletin boards—open-ended posting systems where almost any message can appear and no real control is exercised. As one moves into the realm of the discussion group, conference, or seminar, editors exercise greater control over subjects and presentation, pushing their contributors toward more topical specificity and insisting on contributions that look more like essays or articles than bulletin board notes. The final product, of course, is the electronic journal. But precisely where the line is crossed is a subjective decision.

This article looks for predictability of appearance, enumeration of issues, formal boards of editors, and editorial policies. But a flexible approach is critical, as the electronic journal is a moving target and one that cannot properly be bound to analogies with other formats without losing appreciation for the unique contributions this electronic medium has to offer.

For the humanities librarian, the best tool for keeping abreast of emerging electronic communications is a subscription to the most comprehensive of the relevant online discussion groups, HUMANIST, which is currently managed by Elaine Brennan and Allen Renear on the Brown University brownvm mainframe. There is a guide to online communications called the *Directory of Electronic Journals and Newsletters* compiled by Michael Strangelove at the University of Ottawa. It is available in paper format from the Association of Research Libraries in Washington, D.C. or in ASCII format from a Comserve filesaver. In the latter case, an electronic mail message can be sent over Bitnet to <comserve@rpiecs> or via the Internet to <comserve@vm.rpi.edu>. The message should state:

SEND EJOURNAL1 SOURCES  
SEND EJOURNAL2 SOURCES

But this area of electronic activity is developing so rapidly that no directory can really be current, even one like Strangelove's that is to be updated on a routine basis. This means, of course, that the only certain method for bibliographic awareness of online communications is through the medium itself, but this is really no surprise.

For the purposes of this article, twelve electronic journals have been identified: *Bryn Mawr Classical Review*, *Dargonzine*, *Ejournal*, *Erofile*, *Fineart Forum*, *Offline*, *Postmodern Culture*, *Public-Access Computer Systems Review*, *Psycology*, *Quanta*, *SHAKSPER*, and *Textual Studies in Canada*. Most of these titles are evolving, changing with each new issue. Any description will therefore reflect only a snapshot, the momentary characteristics each has exhibited within approximately the last six months. Recognizing this significant limitation, an attempt will be made here to describe briefly each journal's editorial practices, contents, mode of appearance, and method of subscription.

The *Bryn Mawr Classical Review (BMCR)*, which existed in paper format beginning in November 1990, is a review journal in Greek and Latin Classics. Its electronic format lies at the edge of this article's criteria for an electronic journal because it is not planned to appear in discrete, numbered issues. Instead, reviews will be sent out to subscribers as they are received by *BMCR*, with only minimal editorial

intervention. Moreover, the editors plan to print some or all of these reviews from time to time in the journal's print version. As such, *BMCR* is not exclusively electronic, and some might also say it is not quite a journal. It has some of the qualities of a heavily moderated list, slightly more formal than *HUMANIST*. But the editors are soliciting articles and have published essays, while the format is distinctly journal-like to date, so the final decision on these issues can be deferred. It exhibits many of the difficulties in text presentation over an electronic mail network that is still basically unfriendly to diacritics, foreign fonts, and the like. Even footnotes, which were separately enumerated for each page in the paper journal, have become disoriented by the loss of that formatting element in the electronic version. But the editors are mindful of the difficulties and seem genuinely anxious to receive comments and work to improve the end product. For subscriptions to *BMCR*, send electronic mail to <mailserv@brynmawr> over Bitnet or to <mailserv@brynmawr.edu> via Internet. The message should read: "sub bmcr-l your-name", with your name given in the manner in which your e-mail account is registered.

*Dargonzine*, the heir of a previous electronic journal, *FSFNet*, is a fiction magazine printing stories written for the Dargon Project, a shared-world anthology centering on a medieval-style duchy called Dargon in the Kingdom of Baranur on the planet Makdiar. Fairly rigorous controls govern contributions, an author having first to read the entire opus of the project, master the characters, and be fully informed about plot lines under current development. But the casual reader can subscribe as a passive participant by sending electronic mail to <dafydd@white@duvm> over Bitnet or <dafydd@white@duvm.edu> on Internet.

*Ejournal* describes itself as a peer-reviewed academic periodical interested in issues surrounding creation, transmission, storage, interpretation, alteration, and replication of electronic texts in the humanities. It treats these issues in the broadest possible context, looking at the social, economic, and psychological implications as well as the purely literary and didactic consequences of the electronic format. It is predominantly a review journal, but issues usually contain at least one article. Its discussion presents a truly phenomenal combination of literary criticism and technological analysis, the science being virtually inseparable from the art. Subscriptions are by electronic mail to <listserv@albnyvml> on Bitnet or <listserv@albnyvml.edu> on Internet with a message reading simply "sub ejrnl your -name". It is important to distinguish *Ejournal* from the electronic journals published under the same name

by the American Medical Network and Information Companies of America on a range of medical and dental topics.

*Erofile* publishes book reviews in the fields of French and Italian studies, including literary criticism, cultural studies, film studies, pedagogy, and software. Like many electronic journals, it encourages and publishes responses to reviews, creating ongoing discussions. The preponderance of the material is literary in scope, though it remains to be seen whether historical and other topics will be treated as well. Thus far, articles have been in English, but the journal is considering distribution of reviews in French, although the ASCII standards failure to allow diacritics presents a problem the editors have not yet resolved. Subscription is by electronic mail to <erofile@ucsbuxa> on Bitnet or <erofile@ucsbuxa.ucsb.edu> on Internet, with a free-text message requesting membership in the list.

*Fineart Forum* is published on the first of each month by "Leonardo" for the International Society for Art, Science and Technology with support from the Macmillan Foundation, Hochschule voor de Kunsten Utrecht, and the Visualization Laboratory at Texas A&M. Its purpose is dissemination of information regarding the use of computers in the fine arts, ranging from the role of computers in creating art to their use in its distribution and criticism. It has produced a spinoff, *Leonardo Electronic News*, which will appear on the fifteenth of each month and will contain items linked to the society, including book reviews and member news. It is unclear precisely what relationship these two publications will eventually develop, as their areas of concern overlap and both have the quality of a newsletter. But subscriptions to *Fineart Forum* are by electronic mail message to <fast@garnet.berkeley> on Bitnet or <fast@garnet.berkeley.edu> on Internet, with a message reading "sub fine-art your-email-address, first-name, last-name, postal-address".

*Offline* is the electronic, prepublication edition of Robert Kraft's Offline column, which has appeared since 1984 in the *Bulletin of the Council of Societies for the Study of Religion* and in *Religious Studies News*. This electronic edition does not have an independent existence and so might not properly be called an electronic journal in its own right, as it appears on the HUMANIST discussion list mentioned earlier and on the IOUDAIOS list, which is reached on Bitnet at <yorkvm1> and on Internet at <yorkvm1.edu.>. *Offline* was originally directed specifically at the interests of the Computer Assisted Research Group of the Society of Bible Literature, but Kraft, who has taken on an editorial team, has broadened its range to include the various uses of computers in the study of religion. The most recent issue of *Offline* can be obtained by sending electronic mail to <listserv@brownvm>, with the message "get offline 35 humanist".

Membership in either the HUMANIST or IOUDAIOS list will ensure routine delivery of *Offline*.

*Public-Access Computer Systems Review*, usually called just *PACS Review*, was established in January 1990 as an electronic journal appearing three times a year as a service from the PACS-L computer conference and is concerned with the full scope of computer use in libraries. Subscription is not distinct from membership in the PACS-L network. *PACS Review* articles are simply stored individually as files on the PACS-L list server at the University of Houston. Members of PACS-L receive an annotated table of contents for each issue. They are then able to call up articles of interest by sending a command to the list server. As with *Fineart Forum* and *Leonardo*, *PACS Review* is closely bound to a newsletter, *Public Access Computer Systems News*, issues of which appear as messages on the PACS-L network. Subscription to *PACS Review* entails joining PACS-L by sending an electronic mail message to <listserv@uhupvm1> stating: "subscribe pac-l first-name last-name". For those not wishing to join PACS-L, tables of contents for individual back issues of *PACS Review* can be obtained by sending an electronic mail message to the same list server, stating: "get contents prvlx", where "x" is the number of the desired issue.

*Postmodern Culture (PMC)* is an interdisciplinary journal of criticism in a wide range of topics falling under the general rubric of its title. With a distinguished board of editors, it is one of the most formal of the electronic journals currently available. In a manner similar to *PACS Review*, subscribers to *Postmodern Culture* do not automatically receive entire issues but only tables of contents and abstracts. Individual items or the entire issue can then be requested from the list server, though receipt of the entire issue requires a minimum of one-half megabyte of free disk space. Interestingly, *PMC* has begun encouraging subscriptions to an alternate disk or fiche version of the journal at a cost of \$15 for individuals and \$30 for institutions, apparently motivated by a desire to expand the title's audience beyond those with electronic mail capacity. Subscription to the electronic version, which is free, requires an electronic mail message to <listserv@ncsuvn.bitnet> or <listserv@ncsuvn.ncsu.edu>, stating: "sub pmc-list your-first-name your-last-name".

*Psychology* is sponsored by the Science Directorate of the American Psychological Association and edited by Stevan Harnad at Princeton University and Perry London and Cary Cherniss at Rutgers. Like *Postmodern Culture*, it has the formal qualifications of a scholarly journal in greater measure than most of the other titles considered here. It appears several times each month with

announcements, reviews, and formal articles in the field of psychology broadly defined. Subscription to *Psychology* is by an electronic mail message to <listserv@pucc.bitnet> or <listserv@pucc.edu>, with the message: "sub psych first-name last-name."

*Quanta* is the electronic equivalent of the "little mag," a small, relatively informal literary journal of science fiction and fantasy. Appearing bi-monthly, it publishes articles, reviews, and short stories by a variety of amateur authors. In spite of its amateur hacker origins—its editor is an undergraduate in Pittsburgh—it has the formal appearance of a paper magazine, with volume and issue enumeration as well as dating on a clearly presented title page. It appears in two formats for possible printing purposes, ASCII and postscript, which must be specified in the subscription request. To subscribe, an electronic mail message is sent to either <quanta+requests-postscript@andrew.cmu.edu> or <quanta+requests-postscript@andrew.cmu.bitnet> for postscript format, <quanta+requests-ascii@andrew.cmu.bitnet> or <quanta+requests-ascii@andrew.cmu.edu> for ASCII format.

It should be noted that *Quanta* is only one of several recently emerged electronic journals devoted to amateur fiction. *InterText* publishes amateur writing in all genres of fiction and appears bi-monthly, alternating with *Quanta*. Subscription requests can be sent to <jsnell@ucsd.edu>. *Core* is devoted to publication of prose and poetry, subscriptions going to <rita@eff.org>. *The Guildsman* is an electronic magazine centered on role-playing games, amateur fantasy, and science fiction. Inquiries can be sent to <jimv@ucrmath.ucr.edu>. The informality of the electronic medium seems particularly well-suited to these amateur publications.

*SHAKSPER* is included here, though it is both less and much more than an electronic journal. This is an electronic conference and, like the annual Shakespeare Association of America meeting, it presents announcements, bulletins, scholarly papers, and formal exchange of ideas. In most respects, it resembles HUMANIST as a moderated list. But the effort to build this list into a nearly comprehensive mode of communication among Shakespeare scholars suggests that excluding it from any treatment of electronic journals would be to put excessive stress on the formal definitions of such journals and to miss the potential of the medium. The elements of *SHAKSPER* do not appear as discreet issues. Conference papers, articles, and theses submitted by members can be retrieved individually. Moreover, members have access to the *SHAKSPER* Quarto/Folio Textbase, a 17-megabyte file of all fifty-five authoritative quarto and folio texts of the Shakespeare plays. There

is also an international directory of Shakespearean institutions, organizations, libraries, and journals; a continually updated Directory of Conferences and Calls for Papers; an index of works in progress; and a bibliography of poems, novels, plays, and films inspired by Shakespeare. Contributions are published with little editorial intervention but are grouped topically whenever possible. Prospective members are asked to submit a brief autobiography to the editor, not in an effort to restrict membership but to facilitate shared expertise among list recipients. To subscribe, an electronic mail message should be sent to <listserv@utoronto.bitnet>, stating: "sub shaksper first-name last-name".

*Textual Studies in Canada* focuses on the composition, reading, and definition of texts according to disciplinary and cultural assumptions within the Canadian context. This includes Canadian literature, popular culture, rhetoric, reading theory, translation, pedagogy, Canadian studies, feminism, and critical theory. It appears as an annual in the Fall and is the only electronic journal yet encountered that is not free. Annual subscriptions cost \$7 for individuals and \$10 for institutions. Subscription requests should be sent to W. F. Garrett-Petts by electronic mail at <petts@cariboo.bc.ca>.

## THE ISSUES

This extraordinary collection of electronic publications and the many more that will doubtless emerge in the near future present librarians and scholars with an array of issues. Some of these issues are by nature philosophical—concerns about the impact of electronic distribution on the development and presentation of scholarship, about the manner in which readers can and should gain access to that scholarship, and about the role of libraries in assuring such access. Other issues are entirely practical and library oriented—if libraries are to make themselves intermediaries in access to these electronic journals, then what are the best methods for receiving them, distributing them to readers, and archiving them on behalf of future generations? Each of these concerns must be addressed by anyone involved in creating, distributing, and providing access to this new phenomenon.

### *The Nature of the Medium*

Perhaps the most striking feature of the electronic journal, for those who are accustomed to its paper cousin, is the wide-ranging impact of the electronic medium upon the presentation of each journal's "message." Of course, the very definition used here to delineate electronic journals as a special category of electronic communication entails an anachronistic reference back to the paper

format: appearance at predictable intervals, numbering and dating of issues, and editorial control of contributed materials. In fact, each of these qualities is fundamental in some way to anything one would wish to call a scholarly journal. Any scholar publishing an article or review wants to know that it will appear in a predictably timely manner. Accuracy of citation requires that journals approach the enumeration and dating of issues with a defined methodology. Finally, the very essence of modern scholarship has come to entail peer review of which the editorial boards of journals are a central feature. And most electronic journals have made real efforts to conform. One, *Quanta*, has even gone so far to make itself look like a paper journal as to provide dotted lines marked "cut here" at the start and finish of each release, assuming that readers or libraries will print the journal, cut away its "electronic" header information, and bind it like any other periodical. But the electronic medium has nonetheless had a profound affect on the production, distribution, physical appearance, and even the contents of these journals.

The simple presentation of material in any of these journals is the first element to experience the impact of the electronic medium. Of course some journals, like *Quanta*, adhere rigorously to the forms long established for paper periodicals: a carefully defined title page, list of editors, table of contents, and topically organized displays of reviews, articles, and fiction. *Bryn Mawr Classical Review* has even retained the footnote enumeration that was specifically designed to sit at the bottom of the page in its paper edition, with numbering starting over again with each page—a meaningless phenomenon for which the editors apologize. But others, like *Psycoloquy*, come in peculiar bits and pieces—a queries segment, an abstracts segment, each in a new mailing. But even more notable, mailings come that are not part of the "journal proper"—a brief discussion of copyright problems by one of the editors, an announcement of an award, a warning that publication will be delayed by a holiday. Because each of these gobbets of information does not entail putting ink to paper and postage to envelope, the journal becomes a free-flowing mode of communication. It comes into the reader's life sometimes in traditional, large, and comprehensive units, but just as often it appears in a serendipitous occasional manner, like a quick note dashed off by a friend. This particular informality is directly bound to the electronic format and gives the scholarship in these journals an intimacy that is all but impossible in print.

There is, however, one simple element of the electronic format that limits the impact these journals might have in the world of scholarship. While word processing software has possessed the capacity to paginate documents almost since its inception, the online

systems that distribute electronic journals are largely insensitive to that need. However mundane the concern might sound, precise citation of scholarship is all but impossible without pagination. To the best of this author's knowledge, no convention has emerged to specify how one would go about citing from an article published online. Authors in these journals do cite one another, but the citations have an informality that would not be considered sufficient by the broader scholarly community in most humanities fields. The natural solution might be for electronic journal editors to break their texts into discretely identified, pagelike units. But other, more genuinely electronic, solutions might be equally useful. In any case, until some readily apparent method for citing electronic articles emerges, these journals can have only a marginal impact on the world of scholarship.

The curious manner in which *PACS Review* and *Postmodern Culture* are distributed is equally a phenomenon of the electronic medium. By sending the subscriber only a table of contents and abstracts from which to choose the articles to be retrieved, these titles make the journal a sort of reader-designed product. The interactive capacity of the networks and the list servers are fundamental to this approach. Like *Psycoloquy's* gobbets of text, it would be a prohibitively costly method of distribution for paper journals. Here, it requires only the right software. There is a potential danger in this mode of distribution. By allowing preselection of texts, these journals eliminate much of the idle browsing of a broad collection of materials, a process that often yields fortuitous surprises in the research process. Whether the tables of contents suffice to retain this serendipity, only time will tell. But there can be little doubt the experiment could only take place in electronic form.

But perhaps the most significant impact of the electronic medium upon the physical presentation of journal text has hardly begun to emerge. This is, after all, electronic text. This means it is searchable with all the freedom and speed that has made other electronic information such a bonanza for many scholars. The tables of contents that accompany many of these journals are, at some level, anachronistic remnants of their paper ancestors. The ability to find that particular piece of analysis, that particular reference for which one hunts, is immeasurably increased by this simple fact. Of course the journals must be downloaded to a local system for these purposes, as electronic mail software is usually fairly wooden in this area. But that is a small concession. Moreover, beyond searchability lies the power of hypertext. This, of course, is more a vision than a reality on the mainframe systems that generate and manage these electronic journals. But there is every reason to think such capacity is not far off.

There can also be little doubt the electronic medium has an impact on the contents of these journals—the writing they attract and its relation to the reader. On the one hand, the freedom of the bulletin board is still evident—the personal queries, the announcements, the abstracts. Each, in this context, has a scholarly purpose, but there is an almost oral quality to them, an intimacy that was often present in nineteenth-century journals but is largely impossible in the formal products of twentieth-century publishing. On the other hand, the electronic medium has a tendency to insert itself into the contents of these journals as an issue. Perhaps this is a consequence of their experimental nature, of the medium's centrality to what a journal like *Erofile*, *Fineart Forum*, or *Psycoloquy* is doing. But the medium as a concept tends to become a central topic, as authors writing in an electronic format ponder the impact of the computer on the presentation of their ideas. Certainly the knowledge that they are writing for a computer-literate audience on the network draws such discussions out of the electronic journal's contributors. But the tendency of the medium to foster innovative presentation of ideas invariably becomes interwoven with the ideas themselves. On the negative side, this phenomenon fosters a great deal of trendy, often rather self-indulgent, analysis. But genuine creativity seems at least an equally frequent result.

The nature of the electronic medium, however, has profound and sometimes baffling implications for these journals' relation to their audience. Fundamentally, as already noted, electronic journals emerge out of an array of online list server operations that have been oriented toward direct communication among scholars over the network. This means that subscriptions to the journals will, for the most part, come from persons already involved personally with online communication or interested in becoming personally involved. So the journals' audiences are limited to individuals with ready access to computer networks. It also means that subscriptions to the journals will come largely from individuals who want to receive them personally rather than from institutions like libraries, whose purpose is to provide access to a large group of readers.

This does not mean that electronic journals have not had an audience, that they are trees falling in empty forests. Editor's remarks and reader comments in virtually every journal indicate that reception has been enthusiastic. But the situation described earlier makes two significant assumptions about the audience of an electronic journal—it assumes that the journal only needs to be accessible to individuals with online capacity, and it assumes that the only persons wishing access to a journal are those sufficiently interested to warrant a personal subscription and routine examination of the entire contents.

But both assumptions run contrary to the role journals have conventionally played in scholarly communication. No journal, scholarly or otherwise, would wish to limit its audience to those possessing a particular technological capacity any more complex and expensive than the ownership of a mailbox or the ability to walk into a library. However ubiquitous computer networks will be to future generations of scholars, any journal whose audience is limited to those participating personally in the networks is limited to a small subset of the current scholarly community, particularly for the humanities. Furthermore, most scholars actually subscribe to and routinely examine just a handful of journals, making only occasional use of others when citations or a colleague's suggestion leads them to an individual article. Few scholars would want to subscribe to every electronic journal that might ever be of interest to them, however infrequently. So the individual subscription structure that has predominated on the networks to date simply will not allow electronic journals to take a central place in the world of scholarly communication.

The natural conclusion, then, is that electronic journals must somehow make their way into libraries or some equivalent thereof, an institutional setting in which they can be accessed easily by those who cannot or do not wish to subscribe personally. Only in that setting can these electronic journals be made accessible to the entire scholarly community. But any approach to library access should recognize the uniqueness of the electronic medium, as discussed earlier, and every effort should be made to retain that medium's positive attributes. As electronic journals find a workable place among other modes of scholarly communication, they may inevitably lose some of the informality that has characterized their network origins. But taking their place "on the library shelf" should not in itself require that electronic journals become clones of their paper cousins.

### *Issues of Library Access*

Any discussion of libraries providing access to electronic journals should be approached using the broadest possible meanings of the terms involved. In other words, *the library* should be understood here to mean some sort of institutional support that will almost inevitably involve significant participation by a university computer center or other *systems* specialists. The library should also be understood as potentially either that physical location at which access is joined or simply as the agent providing access to other remote locations. Moreover, *providing access* can mean collection—i.e. physically capturing the journal—a process that can be managed in various ways; it can also mean simply providing the technological

capacity for access—the equipment and the network connections. Computers offer wonderful and frustratingly complex ways of combining these two options, and the discussion here will try to consider as many of them as possible.

At the outset it will be assumed here that library access does involve an actual institutional subscription to an electronic journal and receipt of issues via the local mainframe computer. The alternative is for the library simply to offer information about these journals to its users and perhaps to provide the hardware and software necessary for individuals to establish and maintain their own subscriptions. But this does not fulfill all the requisites of access discussed earlier. Providing the machinery may address the need to reach an audience beyond those who are already active online. But it does not address the fact that many potential users of a journal have no desire to become active online, and many users will need only occasional access rather than a personal subscription.

So, functioning on the assumption that the library places an institutional subscription to an electronic journal, it must then decide what to do with the issues when they arrive and how to provide the patron with access to them. This article cannot address the technical support entailed in any of the available options but will only attempt to present the options themselves and the advantages and disadvantages they offer. In simple terms, those options are: first, to print the journal either directly from the online file or with the intermediate step of a download and manipulation by word processing software; second, to download the online file to an electronic medium, usually a diskette, manipulate the file with word processing software, and provide access through personal computers; third, to maintain the file on a mainframe computer and provide access through a local area network.

The first option, printing the journal, offers the library the comforting ability, once the printing is complete, of treating electronic journals just like any of their paper cousins—binding them, shelving them, and in every way possible turning them into something indistinguishable from the rest of the library's collection. This methodology unquestionably offers potential as an archiving methodology, but that facet of electronic journal management will be discussed separately later. Printing also offers the ability, if library policy allows, to circulate the journal like any other paper product. Since circulation has come to be regarded in American libraries as an essential feature of democratic access, this is certainly one way to enhance distribution of electronic journals. As a mode of presenting these journals to readers, however, the printing option has significant limitations.

From the standpoint of simple cost management, it means the library must absorb the cost of printing on top of the conventional expense of binding and other material processing. Admittedly, most electronic journal subscriptions are free. Only *Textual Studies in Canada* has thus far imposed a charge. But that seems likely to expand, so the cost of printing may not always be offset by gratis subscriptions. Moreover, if the journal is to be coherent in printed form, significant staff effort is necessary prior to conversion to paper. Printing an online file directly does not result in font and format that is presentable on paper. Consequently, the journal must either be downloaded to a mainframe file and manipulated with that system's editor or downloaded to a personal computer and word processed. Any library contemplating the paper approach must be prepared to absorb the cost of such staff involvement.

But there are other reasons to avoid the paper solution. As discussed earlier, the electronic medium has a significant impact on the nature of electronic journals. Their appearance, their structure, the very subjects they address are shaped in part by the online environment. Of course the full flavor of that environment cannot be conveyed to anyone who is not connected to a network like Bitnet or Internet, with the capacity to participate in the associated seminars and discussion groups. But, if removal of an electronic journal from the online environment alters its character, printing distorts it almost beyond recognition. The continuous flow of electronic text, the header information that identifies the journal's, and often the article's, provenance, even the hint of the electronic environment is lost. Admittedly, these are subtle, perhaps even superficial and aesthetic, concerns. But they have a significance that should be considered by anyone contemplating electronic journal access. These journals have been produced in the computer environment because it suited their purpose. Their removal from that environment in some sense can be seen as defeating that purpose.

The option of downloading an electronic journal to a diskette or other personal computer medium seems to offer most of the disadvantages of the paper option and few of the advantages. The most workable method might be to download to a hard disk, from which library users could read the journal and, if allowed, copy it to their own floppy disk. This eliminates the cost of printing and does maintain the file in an electronic format. But copying to floppy is no alternative for the user without a personal computer, so democracy of access is not assured, and the electronic format on a personal computer is largely an illusion—the file is still only a frozen copy of its online original, far removed from the network environment in which it originated. In addition, the library incurs the cost of

hardware maintenance in an area where such costs may not be necessary.

The third option is to capture the electronic journal on mainframe computer disk space and provide access through the local area network. This seems, on the whole, to provide the most advantageous approach, where the mainframe environment permits. As with the personal computer download, the user does have the capacity to copy the file to a diskette by dialing into the local network from a personal computer. If, like the library's OPAC, the journals are mounted in a mainframe file accessible without personal computer account, democratic access is guaranteed. Finally, mainframe storage means the journal is maintained in an electronic format in proximity to the online environment in which it originates. Admittedly, those who access the journals without a personal password cannot expand their experience of the online environment without securing such a password, though limited access to the broader environment might be developed employing a universal password. Though imperfect, mainframe storage thus offers the best opportunity for retaining and conveying the unique qualities of an electronic journal to the broadest possible audience.

The basic outlines of mainframe storage are relatively simple. The method described here has been in place for approximately three months at Columbia University and, though no statistical analysis has yet been done, seems on the whole to be working well. A notesfile is created on one of the university mainframes for each electronic journal. The subscription is placed with the list server, and issues received are stored in the notesfile. Users of the local area network can simply issue the command, "notes psycoloquy", for instance, and they receive an index of all available files received from that list server. This author, as chair of the humanities library serial committee, serves as caretaker of each electronic journal, a function which involves occasional purging of the file when the index becomes excessive. At present, only individuals with computer accounts can access the notesfiles, but accounts are available to all faculty, students, and librarians so the only real limitation is computer literacy. Access would be more effortless if the notesfiles were available at the top level of the local network, like the library's OPAC. But any institution deciding to approach electronic journal access at that top level needs to consider whether such high visibility is warranted by the needs and number of anticipated journal users.

No matter which option for electronic journal access is chosen—printing, personal computer download, or mainframe storage—a need exists for staff intervention in managing the resultant files. In some measure, this can be viewed as an alternative to the routine check-in

procedures necessary with paper journals, though for the printing and personal computer options the time involved is probably greater and in all cases the level of training needed exceeds that conventionally associated with serial check-in. For the printing option, a staff member must download the file, format it with word processing software, print out the results, and see to their binding. The personal computer option eliminates only the printing and binding phases. It should be noted that if the files are to be reformatted with a word processor, they will often need to be merged. An electronic journal issue is frequently too large for a single mailing and so is sent in several batches. If the issue is to be downloaded for printing or personal computer use, most libraries would want to merge these separate mailings, stripping off their electronic headers and putting them in the proper order. The volume of material to be managed is often considerable. An issue of *Psycoloquy*, for instance, may approach 100 KB or more.

Management of a mainframe-stored journal is less time-consuming for library staff, but the activities involved also require significant acquaintance with the materials being received and the technical procedures needed for their maintenance. It is the notesfile manager who must periodically delete older materials from the file lest it begin to require excessive disk storage space. In the case of journals, like *PACS Review* or *Postmodern Culture*, where automatic mailings include only tables of contents and abstracts, the notesfile manager is responsible for routinely submitting a request to the list server for delivery of the entire issue. Initially, as a library experiments with electronic journal management, the notesfile manager probably needs to be a professional librarian, but, with time, a lower-level staff member might be trained to perform the function. But, whether this person is managing a notesfile or handling printing or personal computer downloading, the tasks involved will not have the routine quality associated with conventional serial check-in.

However a library chooses to manage subscriptions to electronic journals, cataloging needs to be a part of the structure. Without bibliographic control, these journals can never be more than arcane tools available to those who are literate in the online list server experience or at least in the portions of that experience associated with their own field of interest. Even serendipity will not lead one to "stumble" across an electronic journal in all its online uniqueness if the library simply blends it into the paper journal collection or conceals it within personal computers or mainframe terminals. Several of the journals discussed earlier have already been cataloged by the Library of Congress: *Ejournal*, *Fineart Forum*, *PACS Review*, *Postmodern Culture*, *Psycoloquy*, and *Quanta*. The phrase,

"[Computer File]", is included in the 245 field, the publisher information is given with the listserv network address in the 265 MARC field, and the mode of access—e.g., "Electronic mail on Bitnet"—is specified in the 500 field.

Finally, on the access level, interlibrary loan must be considered as a potential method for ensuring reasonably universal availability of electronic journals. This seems, on its face, to be a preposterous notion. Electronic text, by its nature, does not seem "loanable." But bibliographic control will invariably result in requests by individuals who either do not realize the title they have discovered is a computer file or who harbor the hope that the host library will consider printing out that file's contents on their behalf. For libraries that approach local access by printing out the journals, of course, such requests would be easily met. For others, the level of service they are willing to provide over interlibrary loan will need to be determined, much as has been the case with CD-ROM products. In a world where online computer access is still not universally available to students and scholars, such determinations will have important implications for access to a scholarship in a format that is likely to become increasingly common.

### *Archival Responsibilities*

In the humanities, access to current journal issues, electronic or not, has perhaps less long-term significance to researchers than access to the backfile. Humanities scholars continue to use one another's work long after that work is published, and the odds of a scholar needing the current issue of a journal to follow up a citation are actually rather slim. Consequently, management of electronic journal backfiles has at least as much significance as management of current receipts.

An exchange of views on the Humanist Discussion Group during the summer of 1991 illustrates the complexities encountered when considering the archiving of electronic journals. In response to a note by Ann Okerson who wrote of librarians' fears that the journals themselves may someday die and leave their mainframe backfiles to the mercy of local computer center staff, and referred to NASA's costly triennial back-up process for satellite data, Stevan Harnad, editor of *Psycology*, wrote with an air of contempt, labeling the whole issue "trivial" (Humanist Discussion Group 5.0178, June 21, 1991). Richard Ristow wrote back in anger, outlining the nightmarish process of trying to do routine backups and suggesting that electronic journals, for want of a better medium, should be archived in paper, a material far better understood from a preservation standpoint than machine-readable files (Humanist Discussion Group 5.0207, July 1,

1991). John Unsworth suggested instead that microfiche be the logical archival medium, since computer files are easily dumped into fiche (Humanist Discussion Group 5.0210, July 4, 1991). Finally, Willard McCarty gave the inevitable response of an electronic text advocate, pointing out that the great glory of electronic communication is that it makes playful fleeting conversations affordable. He pointed out quite rightly that much of what appears online does not merit preservation, indeed that such preservation efforts fly in the face of the electronic communication's very nature (Humanist Discussion Group 5.0216, July 7, 1991).

Indeed, the issue of archiving electronic journals may be less pressing than our librarian instincts tell us. As McCarty points out, the new medium is NEW. It may very well prove true that some electronic journals will not produce lasting scholarship but will continue to share the fundamentally ephemeral qualities of online discussion groups, seminars, and other list server operations. As discussed earlier, that informal element of electronic communication is much of what makes electronic journals special, and a reasonable argument can be made that much of what moves over the networks can be comfortably consigned to oblivion. But there are two arguments that come to mind in opposition to this cavalier attitude—one concerning electronic communication in general and one addressed specifically to electronic journals.

In the first case, it may be noted that electronic communication, although it is new, is increasingly replacing older forms of communication among scholars, forms that were often preserved. There have always been ways for scholars to communicate informally. Above all, many of them communicated through the mails. Anyone who has sifted through the correspondence files of a great scholar who thrived during the last 100 years knows those files invariably contain reams of informal exchanges with colleagues. Rough drafts of articles and book chapters will be there too, often with the comments of colleagues scratched in the margins. These forms of communication were cumbersome in comparison with the online miracle, but they existed and, of no small importance, were often preserved. It is only a guess, but someone wishing to know how Henri Pirenne formulated his theory of the ancient world's demise or how Frederick Jackson Turner arrived at his view of the American frontier might find a wealth of information by examining the papers of these great scholars. Had they communicated online, however, current practices would almost certainly mean that such information would be long gone. So a note of caution is appropriate, even where the ephemera of the networks are concerned. A librarian who has ever stood behind a reference desk knows that researchers do not

always restrict their queries to formally published articles and books but often seek the ephemera just as eagerly.

With specific regard to electronic journals, however, a second argument is appropriate. However transient much online communication may be, the very notion of an electronic journal represents an effort to bring formal scholarship into the electronic medium. However much these new journals may share the informality of the networks in their format and even in their contents, their publication of reviews, articles, and new works of fiction represents a lasting contribution to scholarship. If they are not making such contributions, they have no business calling themselves journals and should instead retain the labels of the networks' less formal lists. But if they are indeed journals, then by definition their contents warrant preservation. In some measure, each library will have to approach the distinction of ephemera versus real journals on an ongoing basis, just as it must make occasional reviews of its paper journal collections to judge which titles may have drifted out of scope or failed to live up to their original promise. But preserve we must.

For those electronic journals that do warrant preservation, however, the archival efforts of the list servers themselves are not sufficient. As so many have noted, libraries have never been willing to rely on journals to archive themselves. When a periodical ceases, and most eventually do, its institutional support usually comes to an end with no dependable means of retaining backfiles. This is even more so with computer files, as their maintenance entails use of disk or tape space that is rarely in long supply at university and other computer centers. For the moment, backfiles of all the journals discussed earlier are available from their list servers. But no one would want to bet the same will be true in ten years or even in five. So libraries must ensure that archival efforts are undertaken, and they must probably confront the issue soon.

There is probably no perfect medium for archival preservation of electronic journal backfiles. Purely electronic retention, as already noted, is very expensive and would probably result in texts becoming unreadable, as hardware and software change. The alternatives are conversion to paper and production of microfiche. The latter is probably easier and cheaper to do on a large scale, and *Postmodern Culture* is already encouraging libraries to purchase the fiche backfiles it is generating. But librarians are generally less comfortable with microfiche as a preservation medium, as there are no universally accepted quality standards, whereas archival quality paper has a proven track record. The decision will not be an easy one.

Above all, one might hope the decision would not have to be made library by library. In this time of limited fiscal resources, it does seem appropriate that libraries undertake preservation of electronic journals on a cooperative basis. It may not be workable to integrate this effort with those aiming at preservation of electronic data and text files, since those materials do not lend themselves to format conversion as well as electronic journals. But it does seem useful that libraries make some effort to reduce their overall commitment to creating electronic journal backfiles, at least until the future significance of this new medium becomes clearer. Precisely when that day may come, of course, is a question for astrologers more than for librarians.

### CONCLUSION

The electronic journal is a hybrid. It springs from an effort to merge the informality, speed, and relative cheapness of network communication with the durable scholarship of the print world. In some degree, it is a hopeless endeavor, because the two components are so very different and indeed contradictory. How does one inject durability into an electronic medium that is by nature transient or bring speed and cheapness to a print format that has become incurably cumbersome and expensive? The more the electronic product begins to look like its print cousins, the more it will lose the charms of its electronic birthplace; boards of editors, peer review, and formal pagination will invariably make these journals more expensive, slower, and a good bit stuffier. But, if electronic journals fail to achieve some of the formality of their print cousins, they will also fail to make a lasting contribution to scholarship.

The experiment nonetheless seems worth a try and well worth the support of librarians. In contemplating these new products, it is a useful exercise to peruse the rather amateurish book notices of the seventeenth-century *Journal des Sçavans* and the very personal accounts by German scholars in the *Reiseberichte* of the nineteenth-century *Archiv*. Doing so, one cannot help but long for a time when scholars shared an intimate world, where most of the rules of evidence, text authentication, and ownership of ideas had yet to be formulated. That world, admittedly stripped of its more archaic qualities, is alive again on Bitnet and Internet. We may fret about how to provide our users with access to it or worry about how to preserve the things it creates. But the simple potential it offers—to keep a rather staid and cautious world of scholarship dynamic and vibrant—seems worth a sleepless night or two.