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# Identifying Unethical Practices in Journal Publishing

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## ABSTRACT

UNETHICAL JOURNAL PRACTICES have received extensive analysis in opinion pieces. However, research studies are few in number and limited in design. This article identifies unethical practices of authors, editors, and reviewers, with attention given to current concerns and proposals for eliminating misconduct.

## INTRODUCTION

In 1988, the National Association of Social Workers had to decide whether to take disciplinary action against William Epstein, an independent consultant in social policy, who had submitted a fictitious article to 146 journals in social work and related disciplines. Epstein has said that he fabricated the article to investigate the confirmatory bias of editors and peer reviewers—in this case, their possible tendency to accept articles that confirm the value of social work intervention and to reject others that do not (Coughlin, 1989b, p. A5).

Confirmatory bias is related to publication bias, which is defined as “the tendency on the parts of investigators, reviewers, and editors to submit or accept manuscripts for publication based on the direction or strength of the study findings” (Dickersin, 1990, p. 1385).

In half of the articles he submitted, Epstein pretended that the intervention of a social worker had had a positive effect on the condition of an asthmatic child. In the other half, the intervention was judged ineffective. He found that reviewers of the positive version

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were more likely to accept the article for publication than were reviewers of the negative version. Though experimental work similar to Epstein's is rare, his findings support those in previous research. In one of the first controlled experimental studies of the journal review process, Mahoney (1977) showed that otherwise identical manuscripts submitted to seventy-five reviewers of a psychology journal received different publication decisions depending on the direction of the data. Positive results—those that supported popular theoretical perspectives—were evaluated significantly higher than were the negative results manuscripts.

Epstein was charged with two kinds of unethical behavior: deceiving the journal editors who reviewed the manuscripts and failing to get their informed consent to be in the study. The "Code of Ethics" of the National Association of Social Workers (Gorlin, 1990) states: "The social worker should not participate in, condone, or be associated with dishonesty, fraud, deceit, or misrepresentation" (p. 270). Also, according to the code:

The social worker engaged in research should ascertain that the consent of participants in the research is voluntary and informed, without any implied deprivation or penalty for refusal to participate, and with due regard for participants' privacy and dignity. (p. 271)

When Mahoney was asked to comment on the charges against Epstein, he revealed that after he did his similar study in 1977, three editors tried unsuccessfully to have him fired or denied tenure (Goleman, 1988). Mahoney added: "The whole machinery of science revolves around the journal editor.... Along with the spread of ideas, journal publication determines career success and promotions. If your findings are not in print, they don't exist" (p. 25). Other commentators observed that the Epstein case had "less to do with ethical concerns than the outrage of editors he duped" (p. 25). They pointed out that Epstein's research could not have been conducted without deception; informed consent would have changed the conditions Epstein was studying. In their view, informed consent is intended to protect people more vulnerable than journal editors and reviewers.

In December 1988, the social work board reviewing Epstein's case found that he had violated two sections of the association's ethical code related to deception and failure to get informed consent. Epstein appealed the decision. Subsequently, the executive committee of the association's board of directors decided that the case was a "disagreement about proper research methodology" rather than a breach of ethics (Goleman, 1989, p. C8). Epstein was exonerated.

### QUESTIONS RAISED BY THE EPSTEIN CASE

Epstein's case was reported in the national press as well as

professional journals. The attention paid to it then and now is indicative of both an ongoing concern with unethical practices and a general recognition that journal publication is indispensable in spreading ideas and establishing the credibility of a scholar's work.

The case provokes a number of questions. How do we define unethical behavior? Although the social work board found that Epstein had acted unethically in conducting his research, the association's executive committee saw no breach of ethics. Fabrication of data is generally considered a serious transgression. Is fabricating data warranted under particular circumstances? Also, Epstein's case strongly suggests the existence of confirmatory bias among editors and reviewers. Are other types of bias equally evident among these gatekeepers? How extensive is research about unethical journal practices? Though studies employing experimental designs are rare, are studies using other methodologies more common? Also, the case included a response from the national association of which Epstein was a member, and the code of ethics of that association was applied to journal publishing. Can the codes of ethics of other associations be applied similarly? How interested are professional associations in the ethics of journal publishing?

In part, this article examines several questions raised by the Epstein case. Also, additional questions concerning practices of authors, editors, and peer reviewers are identified and discussed. Lastly, suggestions for dealing with unethical journal practices are specified.

### UNETHICAL PRACTICES BY AUTHORS

In addition to the questions raised by the Epstein case, equally compelling ethical questions occur in related contexts. For example, if one considers it unethical for an author to fail to get informed consent from editors and reviewers, is it also unethical for an author to submit a manuscript to two or more journals simultaneously without informing each editor of the multiple submissions? Is the answer to this question dependent on whether the two manuscripts are identical, largely identical, or similar in content but different in form? Is it unethical for an author to fail to correct errors in a manuscript? Perhaps the author had no intention of making errors. Is "intention" a factor in defining ethical behavior? Is it unethical to skip mentioning the source that funded the research reported in a manuscript? Imagine that the research concerns comparison of databases and the study was sponsored by a database producer or vendor.

*Coauthorship, Data Sharing, and Underreporting*

How is credit for authorship determined? Nowadays, many, if not most, articles in scholarly journals are coauthored. Is it unethical to include as an author someone, perhaps a senior person, who did not contribute significantly to the paper? How is *significantly* defined? If the paper is published and later considered fraudulent, are the coauthors equally responsible? What happens if some coauthors consider themselves not personally responsible for the fraud? Can they threaten to sue for libel?

In another context, gratuitous coauthorship is often examined as a publication practice that is partly responsible for paper inflation. Broad (1988) has commented that at least 40,000 journals currently roll off presses around the world and scientific literature doubles every ten to fifteen years (p. 15). Probably "the increases stem not from a sharp rise in productivity but rather from changes in the way people publish" (Broad, 1981, p. 1137). Broad specified the increased frequency of interdisciplinary papers; extensive multiple publication of the same data, including premature publication of studies still in progress; and decreasing length of papers. The fragmentation of data has concerned both educators and students: "Students confronted with a half-dozen short papers have a hard time seeing the forest for the trees" (p. 1138).

Also, ethical questions may come to the fore when authors are asked to share their data with others. Do "the rigorous demands of open scientific inquiry [require] an ethic of sharing" (Cordes, 1986, p. 35)? Stanley (in Cordes, 1986) has maintained that "the advantages of sharing...accrue mostly to the recipients of the data, or to science or society in general," while "the disadvantages...mainly fall on the backs of those who do the sharing" (p. 35). A second researcher could find an error that invalidates the original researcher's findings, or the information could be released before the original researcher has examined it thoroughly thus allowing the second researcher an unearned scoop.

Unethical practices attributed to authors also include underreporting of data. Chalmers (1990) has noted that though scientific misconduct is usually associated with deliberate data falsification, "sins of omission may be even more important" (p. 1405). In the medical literature, about one in two trials initially reported in summary form is "never reported in sufficient detail to permit an informed judgment about the validity of its results" (p. 1405). Also, research is not submitted or published because of the direction and statistical significance of the findings. This selective underreporting is more likely to have adverse consequences for patients rather than

the publication of false data, since replication of published data can identify false inferences (p. 1405).

Although Chalmers (1990) thinks that the ultimate responsibility for ensuring that full reports of clinical trials are published rests with heads of the departments with which principal investigators are affiliated and that research-funding organizations and research ethics committees should require full reports, still he believes that authors and editors as well have responsibilities (p. 1407). Editors should accept or reject papers based on whether they are well conceptualized and well executed, not on the basis of direction or statistical significance of study results. Also, editors should exploit the potential of electronic publishing rather than use "shortage of space in printed journals" as an excuse for underreporting (p. 1407).

In discussing what they term prepublication bias, Chalmers et al. (1990) mentioned factors that may influence the undertaking and performance of research and thus its eventual publication (p. 1392). These factors included an author's ignorance of previously related studies, sloppy reporting of research, and a preoccupation with personal career advancement rather than with ethical reporting. This preoccupation with personal advancement was often related to the pressures of tenure and promotion decisions and the "fight to be first" to make a scientific discovery (Merton, 1984, p. 1265).

#### *A Study of Actions of Authors*

Serebnick and Harter (1990) investigated ethical practices of library and information science journals, focusing on actions of authors from the perspective of editors. Their purpose was to identify generally accepted ethical norms in journal practices. A questionnaire describing twenty-two action scenarios was completed by thirty-five editors. All the actions stemmed from concerns that had been identified by writers as possibly involving ethical issues. The editors were asked to rate each action as either ethical, unethical, possibly unethical, or not an ethical issue.

Analysis of the answers showed that 60 percent or more of the editors responded in common to two-thirds of the actions, indicating substantial agreement on the majority of actions. However, divided or uncertain opinions were found for some actions that are of increasing concern to ethics analysts.

The actions examined in this research focused on a number of practices identified earlier. Every responding editor considered it unethical if a manuscript contained instances of plagiarism or deliberate falsification or fabrication of data. Using the 60 percent decision rule, Serebnick and Harter (1990) found that editors thought that dual submissions of manuscripts and multiple publication of

identical or largely identical manuscripts without informing editors were unethical actions. On the other hand, actions in which authors informed editors of submission of identical or largely identical manuscripts were considered ethical actions. However, two actions related to manuscript submission received divided or uncertain opinions from editors. In one, a manuscript different in form but not in content was submitted to two journals without informing the editors, and in the other, a similar manuscript was published in conference or symposium proceedings without informing the editor.

Of the editors surveyed, 73 percent judged one action by authors as not an ethical issue, namely the action of having submitted a manuscript that contained instances of error resulting from sloth, negligence, or carelessness. Many editors considered this "poor work, but not unethical" (p. 112).

Serebnick and Harter found that four of the actions that received divided or uncertain opinions from editors concerned watering down research (the fragmentation of data), undeserved coauthorship, authors who refused to acknowledge the source of financial assistance, and authors who refused to share relevant raw data with interested readers. Though some editors were seriously concerned about these actions, relatively small numbers of editors considered the actions as clearly unethical. The dimensions of possibly unethical and not an ethical issue were checked frequently.

A number of findings from the Serebnick and Harter study were expected. Certainly multiple submission of identical manuscripts without informing editors is generally considered unethical. Other findings, for example those concerning error resulting from negligence, reflect ambivalent opinions shared with analysts in other disciplines. In the widely reported "Baltimore case" that concerned error in an immunology research paper, two opponents, Baltimore and Stewart, agreed that "error is the stuff of science" and "the only way to avoid error in science is to avoid work" (Culliton, 1988a, p. 18). However, Baltimore and his supporters took a passive stance toward the incidence of error and asserted that science is self-correcting—that eventually error will be found and corrected. On the other hand, Stewart with Feder and others took an activist position and recommended that scientists should root out error, admit mistakes rather than conceal them, and honor rather than punish whistleblowers.

Also, several of the majority opinions of the editors seem out of step with current thinking about ethical actions. Only 18 percent of the editors considered it unethical for an author to fail to acknowledge the source of funding assistance. Some editors

commented that authors—and editorial boards—may not realize that funding sources should be reported. However, Leary (1989) has stated that “scientists, administrators and lawmakers are increasingly worried that the lure of money threatens to compromise the quality and conduct of scientific and medical research” (p. 1). Alarm over a few publicized cases and the threat of government intervention in the research process have led institutions, including universities, to issue or revise rules intended to prevent conflicts of interest. Kelman (1986) asserted that information about sponsorship and funding must be shared not only with individuals and organizations asked to cooperate with the research, but also “must be revealed at the time of publication, particularly when the sponsoring agency maintains the right of prepublication review” (p. 27). He added:

Readers have a right to be informed of any factor that might introduce a systematic bias. Even the most meticulous scholars may be influenced by their sources of support—at least in the questions they raise, their definition of the problem and their interpretation of the findings. (p. 27)

For thirty-four of the journals in their study, Serebnick and Harter examined guidelines given to authors. Of the journals studied, 36 percent had no guidelines that included information on ethical issues. Though a majority of the guidelines specified that manuscripts should be “original,” originality was not defined similarly and often it was not defined at all. Only 39 percent of the journals informed authors that manuscripts should not have been published elsewhere and should not be under consideration by another publication.

The American Library Association (ALA) (1983) *Guidelines for Authors, Editors, and Publishers of Literature in the Library and Information Field* includes ethical requirements and recommendations related to originality, dual submission, timely response by editors and reviewers, accurate checking of citations and quotations by authors, and compensation to authors. Yet most of the specifications are not a part of the guidelines of most of the journals in the Serebnick and Harter study. Also, the majority of potentially unethical practices described in this article are not discussed in the ALA guidelines. Nor are they part of the ALA *Statement on Professional Ethics* (ALA, 1981). For example, neither the guidelines nor the statement mention misconduct related to plagiarism, fabrication of data, or many other examples of fraud and deception sometimes practiced by authors, editors, and reviewers.

## ETHICAL RESPONSIBILITIES OF EDITORS

The ethical responsibilities of journal editors have received less attention than have the ethical responsibilities of authors and peer reviewers. Woolf (1981) has cited those who believe that editors must

necessarily assume the objectivity, integrity, and honesty of authors (p. 10). Across disciplines, most journals do not have clear policies spelling out ethical guidelines. Though Thier (in Wheeler, 1987) has recognized some responsibilities, he has also stated that journals are "not regulators of research; they do not take responsibility for, and cannot take responsibility for, the data presented in their articles" (p. 13). For example, most editors do not require that researchers indicate in a published paper who is responsible for what parts of the paper. Nor is it usual practice to spot-check research by asking for original data.

However, in light of recent and continuing revelations of bias and fraud in scientific publishing, editors are seriously considering the shortcomings of current practices. At the 1989 First International Congress on Peer Review in Biomedical Publication, sponsored by the American Medical Association, two-thirds of the nearly 300 participants were editors of journals. Numerous papers at the congress addressed the ethical responsibilities of editors. As an example, researchers reported the responses of editors to notifications that their journals had published articles that included data subsequently found to be questionable or fraudulent. Friedman's (1990) study showed that "many journals lacked policies or procedures for responding to requests for retraction" (p. 1418). A large number of the thirty journals in his study were either late or uncooperative in publishing retractions. Also, the editors were inconsistent in how they labeled and placed retractions in their journals; only a minority of the retractions could be retrieved electronically. In another research report, Pfeiffer and Snodgrass (1990) found that "methods currently in place to remove invalid literature from use appear to be grossly inadequate" (p. 1423). Friedman was not alone in asserting that journals have a "duty to science and to their readers" to develop written policies and procedures for responding to allegations of fraudulent or questionable research (p. 1419).

Additional concerns related to ethical responsibilities of editors are discussed in the literature. Should editors explain to authors and reviewers the review process for each publication? Should editors provide authors with thorough explanations of decisions, particularly unfavorable ones, about their manuscripts? Should editors always publish manuscripts in a timely manner (Rodman, 1970)? In commenting on editorial practices, Banner (1988) has suggested that "editorial authority and independence should be scrupulously protected so that editors acting on their own considered reflection and judgment...have the freedom to override negative reviews of works that may fail to gain approval principally because of their novelty" (pp. 113-14). Peer review, he added, can inhibit innovation; editors

have a "delicate responsibility" to recognize distinctive, challenging, and controversial work. However, the specific role that editors should have in overriding decisions of reviewers has been contested; clear guidelines are difficult to find.

### THE ETHICS OF PEER REVIEW

In explaining the origins of the First International Congress on Peer Review in Biomedical Publication and the *Journal of the American Medical Association's* (*JAMA*) decision to publish 60 percent of the papers from the congress, Rennie (1990) stated:

We at *JAMA*, considering that publication lies at the heart of the scientific process and that at the heart of publication lies peer review, were impressed by the evident lack of research into a process that occupies our energies daily and on which we, as editors, are disposed to rely heavily. (p. 1317)

Rennie explained that the organizers of the congress sought investigative research reports on peer review with the intention of developing a database for future research. At the congress, approximately 70 percent of the thirty-five papers were the results of investigations, while the remaining papers were opinion pieces.

Though there is no standard definition of peer review, one assumes that in scientific publishing it means the use of a professional person's peers to evaluate his or her work. At the congress, in discussing the philosophical basis of peer review, Horrobin (1990) attempted to answer the question "What is peer review for?" One purpose generally accepted is that peer review is for quality control. Horrobin saw an additional purpose, namely "to facilitate the introduction into medicine of improvements in curing, relieving, and comforting" (p. 1438). He recognized that these dual purposes may sometimes conflict. For Horrobin, peer review must be judged by "how it handles those rare articles that genuinely offer the possibility of new approaches that might eventually lead to improvements in curing, caring, and comforting" (p. 1439). By this standard, he found peer review sadly lacking, and he documented examples of the rejection of innovation (pp. 1439-41). Since "peer review in the grant-giving process is so restrictive that most innovative scientists know they would never receive funding if they actually said what they were going to do," scientists have had to tell lies in their grant applications (p. 1440).

Despite the problems attached to the peer review process, approximately three-quarters of the major scientific journals use peer review for evaluating at least some articles they publish (Altman, 1986). In his analysis of forty-eight library and information science journals, Budd (1988) found that if one defines peer review loosely (to include editorial staffs and editorial boards), then the majority

of journals in his sample employ a peer review process (p. 128). He noted that the formal use of referees who are not staff or board members has risen in the last decade.

Bias on the part of reviewers was a recurrent concern in the papers of the congress. In addition to prepublication bias and publication bias, which are discussed earlier, Chalmers et al. (1990) mentioned postpublication bias, which was defined as the "possibility of bias in the reception and interpretation of published research data" (p. 1394). The authors maintained that this kind of bias has received scant attention in the literature. It occurs when review articles present previously published research findings inaccurately.

*Blind Submissions, Anonymous Reviews, Cronyism*

The study that captured the most interest at the congress (Sun, 1989, p. 910) was led by McNutt (McNutt et al., 1990) and investigated the effects of blinding reviewers—masking the names of authors and their institutions—on the quality of the evaluations written by the reviewers. Blinding reviewers is often associated with decreasing the potential for reviewer bias or dishonesty. Previous research investigated the ease or difficulty of blinding reviewers to the identification of authors. However, McNutt et al. reported that to their knowledge their study was the first on blinding's effect on review quality (p.1375). Their study design employed a randomized, controlled, double-blind trial using blocked randomization. They analyzed reactions to 123 manuscripts, each of which was reviewed by a blinded reviewer and a reviewer who knew the author and his or her institution. Both editors and authors were asked to rate the quality of the reviews; neither group knew if the reviews were written by blinded or nonblinded reviewers.

McNutt et al. found that blinding reviewers improved the quality of reviews from the editors' perspectives. The editors rated blinded reviewers higher than nonblinded reviewers on how they addressed importance of the question, key issues, and research methods. However, authors found no differences in the quality of blinded and unblinded reviews. Also, authors considered the reviewers similar with regard to courteousness, fairness, and knowledge (p. 1375). All the reviewers had the option of signing or not signing their reviews. McNutt et al. noted: "Signing was not randomly allotted, and conclusions must be interpreted with more caution" (p. 1375). Of those surveyed, 43 percent of reviewers chose to sign their names. No association was found between signing and quality of reviews.

In general, editors and other ethics analysts have been divided on how they relate reviewers' signing of reviews to subjectivity and possible bias:

Some editors believe that signing will introduce more subjectivity into what should be an objective endeavor and that reviewers who sign may not be as critical. Others believe that signing is valuable and that it will ensure that the reviewer's opinions will be better documented. (p. 1375)

Unsigned reviews are much more widely used by journals in all fields than are blinded submissions (Coughlin, 1989a). However, the concerns of women and junior scholars have led to an increase in blinded submissions. That change at *PMLA*, for example, has resulted in "a significant increase in articles by women, by junior members of the profession, and by colleagues from lesser institutions" (p. A7). Critics of blinding have maintained that to judge scholarly arguments in the literature adequately, one must know the identity of the scholars.

Cronyism is an ethical issue for some analysts. If a crony—a personal friend, colleague, or collaborator—of an author is asked by a journal editor to review a manuscript or review a book authored by the friend, should the crony disqualify him or herself? In the Serebnick and Harter study, cronyism received divided or uncertain reactions from the editors: 27 percent of the editors considered cronyism (not disqualifying oneself) clearly unethical, 53 percent said cronyism was possibly unethical, 7 percent considered cronyism an ethical practice, and 13 percent said cronyism was not an ethical issue.

Although blinded submissions, signed reviews, and cronyism have elicited divided opinions from ethics analysts, no strong differences of opinion seem to exist regarding the ethics of borrowing ideas from, or disclosing the contents of, a manuscript that one is reviewing. Of the editors surveyed in the Serebnick and Harter study, 91 percent said it was unethical for reviewers to borrow ideas from manuscripts being refereed. Ethics analysts have consistently maintained that reviewers are not supposed to make use of the contents of reviewed manuscripts for their own work before the manuscript is published (Altman, 1986).

Another ethical concern in the peer review process is the perception that it is generally unreliable in judging the objective merit of a work. The research of Peters and Ceci (1982) not only showed the inconsistency of reviewers' judgments, but also raised questions about possible bias against authors who lacked high status and a prestigious institutional affiliation. Authors' status and institutional affiliation have been investigated in widely known older studies of reviewer bias (for example, Crane [1967]). However, studies have also indicated that "the great bulk of reviewer disagreement observed is probably a result of real and legitimate differences of opinion among experts about what good science is or should be" (Cole et al., 1981, p. 885). In addition, the level of disagreement among

reviewers may reflect "overall levels of scholarly consensus and that consensus varies across disciplines" (Hargens, 1990, p. 1352).

### ELIMINATING OR LIMITING UNETHICAL PRACTICES

Analyses of unethical practices in journal publishing have a long history and many suggestions have been made for eliminating or limiting fraud and deception. Some proposals are mentioned earlier. Currently, the suggestions are coming from a broad range of concerned analysts. Though a number of changes have been implemented, most are not without their detractors.

At the peer review congress discussed earlier, several proposals were made to make authors, editors, and reviewers more accountable for their actions (Sun, 1989). Rennie suggested random audits of raw data from studies accepted for publication. The audits would be conducted by senior people with research experience, and they would be financed by the journals, foundations, and the government. Presumably, the audits would help determine the extent of research malpractice and let the government know that scientists are "getting scientific about science" (Hamilton, 1990, p. 30). Some observers considered such audits costly and difficult and warned that they will create suspicion and "poison the scientific process" (Altman, 1989, p. C3).

Rennie and Relman have suggested that journals mandate that each coauthor sign a statement that he or she has read and approved the paper and is "responsible" for the work described (Sun, 1989, p. 911; Coughlin, 1989a). However, some scientists maintained that requiring such a statement will be impractical, particularly if the research project was interdisciplinary and if some coauthors were responsible for only minor portions of the research. Perhaps coauthors could accept responsibility for only those parts of the work in which they were involved, and journals could clarify the specific responsibilities. Others have suggested that categories of authorship be established: primary authorship for those who contribute to the conception, generation of data, or analysis and interpretation of data; and a second tier of authorship for those who fit the categories of "with the assistance of" or "in collaboration with" by contributing, for example, "a moderate bit of advice" (Culliton, 1988b, p. 525).

Many analysts have suggested that journals develop more explicit guidelines for authors, editors, and reviewers. These guidelines should clarify the rights and responsibilities of each group, informing them about the potential for misconduct and the necessity for acting to prevent misconduct. For example, Chubin (1985) has recommended that editors inform reviewers of the desirability of pursuing suspicions of data manipulation (p. 200).

Research institutions have also responded to the current interest in unethical journal practices. Recognizing that the pressures of tenure and promotion may lead to an emphasis on quantity, not quality, of publication and a potential for fraud and error, Harvard University Medical School published revised guidelines for promotion and tenure decisions (Culliton, 1988b). The guidelines "dare to suggest that someone up for promotion to full professor should be judged on no more than ten papers. Those up for associate professor could make the grade on the basis of a mere seven papers, presuming they were pretty good ones" (p. 525). The Harvard guidelines also specify that researchers should keep original data and that as authors they should be held responsible for papers that carry their names. Nobel (1990) found that only two medical schools among the 133 that responded to his survey have guidelines addressing most of the important ethical issues related to misconduct in biomedical research (p. 1435).

Suggestions have also been made that educational institutions should take more responsibility for educating and training about research ethics (LaFollette, 1989). LaFollette decried the "shocking lack of adequate...formal, required instruction on research ethics in the curriculum" of her university and many other universities (p. 72). She also thought scientists should be taught about the publishing system. Sweetland (1989) urged the improvement of training of researchers in library and information science. He focused on training in the theory and methods of citations, noting the responsibilities of librarians, authors, publishers, and referees to provide accurate citations and thus to correct a worsening situation of high error rate in citations.

Additional suggestions for eradicating unethical journal practices include: funding duplication of research to resolve allegations of misconduct (Hamilton, 1990); registration of all trials, perhaps all research studies, undertaken (Dickersin, 1990); regular publication by more journals of "an accounting of the length of time it takes peers to review a paper, authors to make the suggested revisions, and editors to decide whether to publish" (Altman, 1989, p. C3); instructing reviewers to refuse to accept repetitive papers and requiring authors to sign documents guaranteeing that the information in their articles has not been accepted or published elsewhere (McDonald, 1985); and encouraging the scientific community to agree on "the level of inaccuracy required to mandate a retraction vs an erratum" (Pfeifer & Snodgrass, 1990, p. 1423).

## CONCLUSION

Admittedly, this article raises more questions than it answers. Unfortunately, the answers are not at hand. Most of the literature

on unethical journal practices consists of opinion pieces, and opinions are inconsistent—perhaps for good reason, since the variables related to the practices are complex and difficult to analyze. Systematic investigations are rare; experimental designs are invariably controversial. Many scientists seem unwilling to encourage or participate in examinations of possibly unethical research and publishing practices; whistle-blowers can face intimidation and unemployment. However, some investigations, including the Epstein and Baltimore cases, receive extensive media attention and heighten concern with unethical practices. Also, events such as the First International Congress on Peer Review demonstrate that rigorous investigations are needed and that a few are actually completed.

In library and information science, the literature on unethical journal practices is minimal. Although editors are concerned about misconduct, many fail to recognize ethical implications in practices that are coming under increasing scrutiny. The ALA publishing guidelines and *Statement on Professional Ethics* do not address most of the unethical practices identified by ethics analysts.

Journal publication is indispensable in spreading ideas and recognizing scholarly research. Unethical practices may promote misleading or harmful information and deny a forum to innovators. Such practices need more attention than they have received.

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