

Article

Advancing Scientific Knowledge: Ethical Issues in the Journal Publication Process

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Abstract: The goal of this paper is to assess the journal publication process from value and ethical perspectives. The specific objectives are: (1) To define fundamental values relevant to scientific journal publication; (2) To identify stakeholders involved in professional journals and their value rights and responsibilities; (3) To discuss the steps of the journal publication process where ethical dilemmas arise and the potential influences of such dilemmas on the advancement of knowledge; and (4) To summarize actions that can minimize unethical practices throughout the steps of the publication process. Values such as honesty, efficiency, accountability, and fairness will be discussed. Issues related to the various stakeholders such as self-citation, plagiarism, dual publication, a lack of timeliness, and issues related to authorship will be a primary focus.

Keywords: rationalization; codes of conduct; values; journal review; responsibility; publishing

1. Introduction

Technical journals are the primary mechanism for transferring scientific knowledge. Professional recognition from publishing articles in scientific journals has greatly increased in the last decade. It is often a primary promotion criterion in academic and professional environments. The publish-or-perish mantra has been a primary factor in tenure decisions for almost two generations, and during that period of time the role of publishing as an advancement criterion in both government and private-industry environments has greatly increased. Because of the status of research, unethical actions have become more common with the growth of the research community [1]. As an extreme example, a significant black-market production of papers to which buyers can insert their names as the primary authors has been reported [2]. Hvistendahl [3] reported that brokers were paid as much as \$5500 to ghost write a paper. Ghost writing is just one example of the potential for unethical behavior in research.

The issuing of scientific journals is a costly enterprise, with the publisher being the primary stakeholder. However, the reputations for many stakeholders are influenced by journal production, and so it is to the benefit of all stakeholders involved in the publication process to ensure high standards. In addition to the publisher, stakeholders include the editor and associate editors, individuals who review papers prior to publication to assess the quality of the work, the authors of the papers who can gain positive recognition from their publications, and the readers of the journals, as they want access to the latest knowledge as they attempt to advance professionally. Even the society beyond the scientific community is a stakeholder in that they need advancements in knowledge to improve their competitive advantage. Research based on work that involved unethical practices can damage all stakeholders.

All stakeholders depend on published journals that are based on high ethical standards. However, the recent increases in cases of unethical action suggest that journal publishers and editors need to be more diligent in preventing such acts. One reported case told of an author who submitted several aliases to a manuscript submission system in order to serve as a reviewer of papers that he or his

friends would later submit to the journal. Another case was reported where a reviewer recommended a paper to be rejected so that the reviewer could submit a similar paper and thus be the first to report such a finding [4]. In another case, two papers had to be retracted because results could not be replicated even though evidence of unethical behavior was lacking [5]. These cases reflect the breadth of problems that publishers and editors must confront and resolve.

Given the rise in acts of unethical research, the journal publication process needs to be assessed from value and ethical perspectives. The specific objectives are: (1) To define fundamental values relevant to scientific journal publication; (2) To identify stakeholders involved in professional journal publication and their value rights and responsibilities; (3) To discuss the steps of the journal publication process where ethical dilemmas arise and the potential influences of such dilemmas on the advancement of knowledge; and (4) To summarize actions that can minimize unethical practices throughout the steps of the publication process. Being aware of value issues related to unethical research is a first step in reducing incidents of such negative conduct.

2. Values Relevant to Journal Publishing

The publishing of journals is not a value-free activity. The following are just a few of the values that are relevant to the publication of scientific journals:

- Honesty: to act truthfully in all publishing related activities; be consistent with rules.
- Promptness: to be punctual in meeting all responsibilities.
- Competence: to accept roles only when capable by education and/or experience.
- Dependability: to be trustworthy to fulfill obligations of the stakeholder position.
- Fairness: to be free of bias in decision making,
- Accountability: answerable for all responsibilities.
- Integrity: adherence to all relevant practices common to journal publishing.

Other values such as excellence and efficiency could be added to the list, but this brief list is sufficient. The definitions are aimed at the publication process rather than from a general moral perspective.

Instances of plagiarism and the falsification and/or fabrication of data have been discussed [6]. These acts are obvious violations of fundamental human values such as honesty and fairness. Authors and publishers place high value on timeliness, as the publisher wants to publish the most up-to-date knowledge in a timely manner. Authors want their papers to be published to show that they are working on the forefront of knowledge and have been instrumental in moving forward the state of the art.

3. Stakeholder Responsibilities in Journal Publication

The publisher is the primary stakeholder in the publication process. The publisher has the responsibility to maintain the reputation of the journal. Since publishing a journal is a costly activity, the publisher must ensure that the papers published in each issue of a journal are accurate and have been completed without any ethical impropriety. This requires diligence by other stakeholders, most noticeably the editor and associate editors.

Impact factors and citation counts can instigate questionable conduct. Coercive citing refers to the practice of recommending that the author include a paper written by the reviewer and not currently cited in the paper under review be cited in the revised manuscript. A coercive citing can be recommended by either reviewers of papers or the editor; in both cases, the practice can represent a conflict of interest [7]. Values relevant to coercive citation include humility and integrity. While coercive citing is not always unethical, it is often unethical because the reviewer is taking unfair advantage of his/her position as an anonymous reviewer. Similarly, the editor of a journal may identify papers from recent issues of the journal that the author should consider when revising the paper.

While neither the reviewer nor the editor may overtly state that their recommendation is a requirement, authors often feel that all review comments must be addressed. In a sense, such recommendations can be read as veiled threats. At the minimum, they can be construed as conflicts of interest, which most codes of ethics identify as conduct to be avoided.

Reviewers of submitted papers have an important responsibility, as their decisions can greatly influence the editor's decision whether or not to accept a paper for publication. Promptness, competence, and fairness are values relevant to a reviewer's responsibilities. If a reviewer fails to do a thorough analysis of a paper, then the paper may be accepted for publication in spite of significant deficiencies. In most cases of review, unethical actions such as data fabrication or falsification would not be detected by a reviewer. Generally, detection of erroneous reporting of work only surface when other researchers try to duplicate the reported results and cannot get the same general result. Then the original work undergoes thorough scrutiny, at which time the reason may be determined. The Stapel case of falsified data is an example of post-publication assessment that led to discovery of unethical work [8].

4. Effects of Unethical/Unprofessional Conduct

A journal paper that is based on unethical work can be responsible for negative consequences and not just to the author. Such an article could cause readers of the article to pursue research pathways that are unproductive, with a waste of time and resources as a consequence. Specifically, researchers are a primary consumer of the knowledge in scientific journal papers. If readers read a journal article that was based on an unethical practice, but the paper suggests an unusually novel pathway for research in a specific field, then readers may alter the direction of their research to the point where time and funds are wasted. From a value standpoint, one person's lack of honesty and accountability can be responsible for another person's inefficiency and a loss of excellence. A report by Vogel [9] indicated that the loss of life can be the result of research misconduct. Kupferschmidt and Vogel [10] reported on the case of plagiarism that caused the German minister of science to have to resign her position.

The reputation of a specific journal could be damaged if the journal contains even one instance of a paper being published that later is shown to have been based on unethical conduct. Other readers of a journal who learn of the incident may look elsewhere for papers, even to the point of not renewing their subscription to the journal. The publisher's product may lose credibility because of an instance of publishing a paper based on falsified data.

When a paper is reported to be based on an unethical practice, considerable effort must be expended to investigate the report. The time and expense of the publishing staff and the editor must be considered when evaluating the consequences of an unethical practice by an author. This is especially true when the author is reluctant to accept responsibility. An author may have a different opinion as to actions that constitute unethical behavior. Feelings of extreme stress can also be a consequence in a protracted case where a charge of unethical practice has been levied. In extreme cases, lawsuits and associated costs may follow.

5. Timeliness: An Across-the-Board Value

Time is a critical element in all phases of the journal publishing process. It is a factor relevant to each stakeholder. Therefore, timeliness is a value closely associated with other important values such as efficiency, quality, and pleasure. Briefly, timeliness is important to each stakeholder in the following ways:

- Publisher: Desires to publish trend-setting papers in a timely manner.
- Editor/AEs: Timely reviews reduce stress and extra effort associated with late reviews.
- Authors: Timely reviews will improve efficiency and can influence promotion decisions.
- Reviewers: Timely reviews are an important service to the profession.
- Journal readers: Timely publication allows them to keep abreast of the state of the art.
- Society: Society benefits from rapid advancements in knowledge.

Publication time is most important to the author, especially where a publication may influence an employment decision. To a young faculty member who is approaching the proverbial witching hour of the tenure clock, he or she may believe that a positive decision on one more paper may make a difference in the decision. Since timeliness is a value, it introduces ethics into the publication process. A reviewer of a submitted paper may have other personal demands that prevent him or her from completing a review in a timely manner. Similarly, an associate editor may not act on a decision because of conflicting responsibilities. Associate editors are usually not compensated for their time and so it is easy for them to rationalize about attending to their own professional demands and delaying the completion of a review and decision on a paper.

6. Rationalization and Unethical Action

Rationalization, which is the development of excuses to justify unethical conduct, is a common element of every case of unethical action [11]. An individual rationalizes as a means of self-justification for the unethical conduct; this also enables the person to avoid changing his or her value system. Probably the most nefarious result of rationalization is that it provides the perpetrator with mental justification for repeating the act in the future without causing a feeling of guilt. The repetition of committing unethical acts in research is supported by the frequency of cases where journals need to retract multiple papers by the same author [12]. Overall, the number of retracted papers increased 13-fold from 2000 to 2011 [13]; however, all of this increase may not have been due to unethical practices.

Rationalization is a value-based problem because truth and honesty are lacking. This is truth in the published work and honesty with the publisher. Additionally, those who rationalize are not being truthful to themselves. Obviously, rationalization also violates the value of accountability. To avoid rationalization a person must acknowledge that developing false excuses violates the fundamental values of professional conduct. If a publisher were to write an editorial on ethical conduct in publishing, the topic of rationalization should be a primary issue discussed.

7. A Code of Publishing Conduct

In one sense, codes of ethics are advertisements in that they attempt to inform society that members of the profession adhere to a set of rules that ensure practices that are sensitive to values relevant to society. Professional societies and other groups have codes of conduct and these codes should apply to members' publishing activities. Unfortunately, some members may fail to make the connection between the values expressed in the relevant professional code and the application of those values to their publishing efforts. For this reason, it may be wise to have a code that specifically identifies values and beliefs important in scientific publishing.

A code of conduct specifically directed at publishing in professional and scientific journals may be needed as the number of instances of ethical misconduct increases. Such a code should not be a list of do's and don'ts, as it would be impossible to identify every type of unethical behavior, especially with the rapid changes in technology. Instead, the code would be a statement of values that could be applied to the resolution of a broad array of ethical issues relevant to journal publishing. For example, instead of an entry such as "Authors will not plagiarize", the code would state something like, "Authors will be honest and truthful in all statements in their writings". Note that the latter statement is value based and positive in tone as well as specific to publishing; yet, the statement could be used in resolving cases from plagiarism to an array of other ethical dilemmas.

If a code of publishing conduct were developed, it should be based on the values important in journal publishing. A code should be applicable to all stakeholders. Just as a code of ethics for engineers stresses the values of public safety, health, and welfare, a code for publishing conduct should stress truth, honesty, accountability, and timeliness. Just as a code of ethics for engineers specifies stakeholders such as clients and society, the code for publishers would need to address the responsibilities of all stakeholders relevant to publishing scientific material such as reviewers and associate editors. An addendum to the publisher's code could be more specific as to the types of

cases to which the code applies, specifically mentioning actions such as plagiarism and not reviewing material in a thorough and timely manner.

Codes of conduct need to be outwardly promoted. An occasional editorial in the journal would alert both authors and readers that the publisher has serious and legitimate value-based concerns. The editorial could focus on specific issues, but they should generally be positive in tone. Actual cases that are relevant to publishing scientific work could be summarized but only after they are thoroughly investigated.

Differences in actions that constitute unethical conduct vary considerably across the globe; therefore, standards that are used to assess responsible research need to be agreed upon [14]. A universal code would help bring these disparate standards into a more agreeable form and help eliminate the when-in-Rome culture that allows research fraud to be tolerated.

8. Actions for Preventing Ethical Dilemmas

Journal editors and publishers can take a number of actions to minimize the likelihood of unethical activity. Specific actions that editors should consider include:

1. Since the reviewers are responsible for reading the assigned papers in detail, clear guidelines should be developed for reviewers; the importance of quality and timeliness should be emphasized in the guidelines.
2. Since AEs are the second line of defense against unethical actions, AEs who do not meet the values of the publisher, such as timeliness and accountability, should be replaced.
3. Evaluate all reviews before they are sent to the author; ensure that they are free of bias and do not suggest a conflict of interest due to the reviewer's self-citation.
4. Develop a consistent system of evaluating reviewers; reviewers who tend to provide poor quality reviews should not be used in the future.
5. Ensure that the number of reviews per paper is sufficient to accurately assess the novelty and accuracy of the work.
6. Given the importance of the AEs, adopt a trial period for new AEs; during the probationary period, the editor should critically evaluate the AE's summary reports on reviewed papers and provide positive feedback as to how the AE's reports can be improved.

Specific actions that the publisher should take include:

1. Develop guidelines for associate editors and periodically distribute them.
2. Provide editorials that stress high standards both of authors and reviewers.
3. Develop a code of conduct for journal publishing.
4. Act thoroughly and timely to any charge of unethical conduct.
5. Provide authors with variable time periods for revising manuscripts based on the depths of the reviews.

9. Conclusions

Publishing is a critical element of the advancement of scientific knowledge. The process should begin with the identification of a problem and critical thinking activity and end with useful knowledge. The publication process is part of the link between creative idea development and advancements of the state of the art. Unethical activities by an author or within the publication process can severely constrain the advancement of knowledge; in a sense, unethical conduct represents an inefficiency in the production of knowledge.

It is from a value perspective that publishers and the associated stakeholders attempt to provide both rules and guidelines that minimize the likelihood of the inefficiencies associated with unethical conduct, even value questionable conduct. If all stakeholders reflect on the decisions that are part of

their responsibilities and that could contribute to inefficient progress, then journal publishing will continue to serve as a positive player in the link between problem identification and the dissemination of knowledge.

Instances of data fabrication or data falsification are the most notorious acts of unethical behavior; however, other value questionable conduct often contributes more to publishing inefficiency. Plagiarism, especially self-plagiarism, is also an issue of concern that has its roots in values. Timeliness was shown to be a value most associated with inefficiency. Stakeholder actions must recognize these major sources of inefficiency. Each stakeholder in the publication process must be aware of the consequences of being a contributor to inefficiency, especially when it involves unethical conduct.

Unethical practices are not limited to actions by authors. Reviewers of papers can be guilty of unethical action, especially actions such as coercive citation and failure to submit reviews in a timely manner. Even relatively minor violations can have adverse consequences to a journal's reputation. Establishing and communicating policies and expectations in advance can minimize the occurrence of unethical practices. Since journal publication is a critical link in the dissemination of scientific knowledge, it is important for all stakeholders to ensure high ethical standards.

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