

## Why are retractions so difficult?

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### Introduction

Retractions of published work from journals have moved from being a rather arcane topic of debate for those obsessed with publication ethics to having their own blog (<http://retraction-watch.com/>) and increasing media attention. However, as Retraction Watch clearly shows, journals' policies and practices are far from uniform and there is evidence that not all seriously flawed work is retracted. The Committee on Publication Ethics (COPE) developed retraction guidelines in 2009 [1], and guidance is also available from other organizations such as the Council of Science Editors [2], yet, despite these guidelines, retractions continue to be regarded as problematic by editors and publishers. This essay addresses some of the difficulties associated with retractions.

### Why are Retractions Important?

Journal editors and publishers should take responsibility for everything published in their journal. Therefore, if anything misleading, incorrect, or fraudulent is published, it is important that the record is corrected so that readers are not misled. For small errors, such as a misplaced figure legend or an omitted reference, a correction is usually sufficient. Some publishers separate errors made by authors from those made by the journal and may use the terms 'erratum' (plural, errata) or 'corrigendum' (plural, corrigenda) to distinguish these, but for practical purposes, and for most readers, they mean the same thing. However, when large sections or even entire articles are affected, either by misconduct or by honest errors, then a retraction is usually required.

The COPE retraction guidelines state that the purpose of retractions is to correct the literature rather than to punish the authors. Nevertheless, most authors take a negative view of retractions and may fear that they will harm their reputation. It is therefore important that journals have policies to ensure that retraction is used fairly and consistently and also to ensure that the reason for any retraction is always clearly stated. Researchers should be encouraged to notify the journal if they discover a problem with their work and, if this was due to an honest error, should not fear that readers might infer that the resulting retraction was a sign of misconduct. Similarly, authors should not be stigmatized for administrative errors caused by the journal (e.g., if the same article is accidentally published twice). Journals therefore have a duty to ensure that retractions due to misconduct and those due to honest errors are clearly distinguished.

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## Why do Journals Need Retraction Guidelines?

Journals do not always handle retractions consistently or appropriately. Two studies have examined medical journals' performance in proven cases of misconduct. The first study considered journals' responses to cases of data fabrication committed by Dr. Eric Poehlman [3]. His case had been investigated by the University of Vermont, Burlington, USA, which contacted the journals that had published affected articles in September 2003. The misconduct was also confirmed by the US Office for Research Integrity in March 2005 and Poehlman was jailed in 2006 for submitting falsified data in federal grant applications. Nevertheless, Sox and Rennie showed that by November 2005, five of the 10 journals that had published the discredited work had not issued a retraction. I rechecked the situation in 2013 and found that, of the 9 articles listed on Medline, only 6 have been retracted (one has an erratum, one has a comment, and one has no indication of any problem) (unpublished observation).

The second study considered journals' responses to the discovery that the German anesthetist, Dr. Joachim Boldt had not received ethical approval for a large number of studies that he had published in several journals [4]. This case was less clear-cut than that of Poehlman, because the initial investigation by the German authorities considered only the lack of ethical approval and did not consider evidence of other problems such as fabrication or falsification. (However, since the initial investigation, further problems have been confirmed [5]). We showed that 9 articles remained unretracted at least two years after the investigation. We also examined the retraction notices in detail and found that only 5 of the 79 published notices fully complied with the COPE recommendations. These two studies clearly show that, even when faced with conclusive findings from well-conducted investigations, some journals fail to retract fraudulent publications.

Another reason why clear retraction guidelines are helpful is that authors (and readers) need to understand publication conventions, and having a clear policy will help editors explain why, in a particular circumstance, a retraction is, or is not, required. Authors (and readers) occasionally demand retractions for inappropriate reasons (e.g., authorship disputes or controversial articles with which they disagree) or object strongly to a proposed retraction of their work. These situations are easier to handle if the journal has a clear, written policy to which the editor can refer. However, a recent study suggests that only about 65% of the 200 biomedical journals with the highest impact factors have a written retraction policy [6].

## Problems with Retractions

Given the evidence that journal retraction policies and practices are inconsistent, one qualitative study has tried to discover editors' views about retractions and the reasons why they may be problematic [7]. We asked editors who had recently retracted articles to describe the process. One editor stated that each retraction was "painfully peculiar." Several editors mentioned that having clear guidelines would be helpful.

It is hard to understand why, when faced with clear evidence of misconduct from a well-conducted institutional investigation, an editor would not retract any affected work. However, difficulties may arise if the authors' institution either refuses to investigate well-founded concerns, or editors fear that an investigation was not fair or thorough. Problems can also arise if institutions refuse to share the findings of their investigations with editors, or insist that they must remain confidential and cannot be published.

Journals are not set up, either legally or practically, to investigate misconduct allegations and, in most cases do not have access to the necessary evidence, for example to determine whether data fabrication or falsification has occurred. Even if the journal does have evidence strongly suggesting misconduct, for example as a result of using text-matching software which can indicate plagiarism, or image screening techniques which can highlight inappropriate image manipulation, publishers may be concerned about legal liability if a journal retracts an article without reference to an institutional investigation. For example, if a journal simply reports that an investigation by University X has determined that misconduct (e.g., data fabrication) relating to a publication has occurred, this factual statement would not be considered defamatory or libelous. However, if no investigation has occurred, it may be necessary for the journal to accuse the author(s) of misconduct and, in theory, publication of such a statement could make the journal liable for legal action by the author(s). When the COPE retraction guidelines were developed, we took advice from senior legal staff at major publishers who informed us that they did not know of any cases in which a journal had been sued in such circumstances. However, even the threat of legal action may be enough to deter some publishers (and may incur costs, such as legal advice, even if such action is unlikely to succeed) [4].

Another problem faced by editors are lengthy, on-going investigations. In cases of suspected serious misconduct, editors may want to alert readers to possible problems with an article but may not feel it is appropriate to retract the publication until the investigation has concluded. In such cases, the publication of an 'Expression of Concern' may be helpful and is recommended by COPE.

Editors need to be alert if authors request a retraction, claim-

ing that it is due to honest error, when, in fact, their case is under investigation and thus hoping to avoid a retraction statement which identifies their misconduct. COPE therefore recommends that editors should check with the authors' institution that the case is not under investigation and that there is no evidence that the honest error claimed by the authors was, in fact, deliberate misconduct.

Studies showing that journals do not always retract articles correctly have also revealed practical and technical difficulties with retractions. It is important that readers are alerted to the retracted status of an article, however it has been accessed. This means that databases should be informed as well as making sure that journal tables of contents and the article itself are clearly marked. Publishers can regulate only those websites that they control, and obviously cannot be responsible for versions of the article that may appear on independent sites such as institutional repositories. It is therefore possible that preprints or personal archive versions of retracted articles may exist that do not indicate that the article has been retracted. One very helpful solution to this problem is the use of Crossmark (<http://www.crossref.org/crossmark/>). This system allows publishers to indicate the most up-to-date, 'publisher curated' version of the article. By clicking on the Crossmark logo, readers who have downloaded a PDF can check whether updates (including retractions and corrections) are available. It is hoped that, as use of Crossmark becomes established, the well-documented phenomenon of articles continuing to be cited after they have been retracted will be reduced [8].

## Conclusion

Journal editors and publishers have a duty to retract unreliable publications. However, it is also important that journals have policies to ensure that retraction is used appropriately and consistently. Difficulties can arise if authors' institutions are uncooperative and further work is needed to develop relationships and foster trust between journals and institutions [9]. Applied and executed appropriately, retractions are a sign that a journal takes its responsibilities to publication integrity seriously and should never be considered a sign of failure. Peer review cannot be expected to detect all cases of fraud (especially if it is well concealed) or honest errors (which are not even initially visible to authors). Therefore retractions do not necessarily imply failures in the peer review process, although it is always good to learn from experience and consider how such problems might be detected in the future.

However, retractions may raise some practical difficulties and often require considerable amounts of editorial time. The COPE guidelines were developed to offer practical guidance and I encourage editors to use them to develop policies appropriate for their particular journal.

## Conflict of Interest

I am the first author of the COPE retraction guidelines and was Chair of COPE from 2009 to 2012. I work as a freelance publications consultant providing training to authors and editors on publication ethics and have advised several publishers on their policies.

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