

Recommended procedures for retracting articles: Inadequate and patchily applied? Analysis of a recent article in *PLoS One* examining the fates of retracted articles

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Abstract

Retraction of research articles ruins careers, dents confidence in the scientific literature, and can have a profound impact on meta-analyses. Retraction rates have seen a big recent rise, as journals act increasingly quickly to remove articles that are found to have broken ethics rules. In several notorious cases, many such articles have been linked to a single researcher. A 2014 study published in *PLoS One* sought to determine whether 88 articles by one of the worst known offenders were retracted as recommended and, if so, whether their retraction conformed to Committee on Publication Ethics guidelines and other recommended practices.

Keywords: Retraction, Retraction notice, Ethics, Watermark, Fraud

In one of a number of famous recent cases of mass retraction,¹ 88 research articles by German anaesthetist Joachim Boldt were recommended for retraction in 2011 due to ethics violations.² Writing in *PLoS One*,³ Elia *et al.* describe the fates of Boldt's articles, focussing on points 1–3 and 5–7 in the Committee on Publication Ethics (COPE) guidelines (Box 1),⁴ and a couple of others: free availability of the retracted article and preservation of the original content. This Anglo-Swiss alliance of researchers present what, on the face of it, is a surprising and disappointing result: only five retractions (all from the same journal) fulfilled all of their predefined criteria.

Box 1: Committee on Publication Ethics (COPE) guidelines relating to retraction⁴

'Notices of retraction should:

1. Be linked to the retracted article wherever possible (i.e. in all electronic versions)
2. Clearly identify the retracted article (e.g. by including the title and authors in the retraction heading)
3. Be clearly identified as a retraction (i.e. distinct from other types of correction or comment)
4. Be published promptly to minimise harmful effects from misleading publications
5. Be freely available to all readers (i.e. not behind access barriers or available only to subscribers)
6. State who is retracting the article
7. State the reason(s) for retraction (to distinguish misconduct from honest error)
8. Avoid statements that are potentially defamatory or libellous'.¹

Look a little more closely, however, and things are not so clear-cut. No fewer than 25 articles were deemed to have been inadequately retracted for the reason 'PDF not adequately marked'.³ In 14 cases, inadequate marking was defined as the retracted article having an opaque 'RETRACTED ARTICLE' watermark, rather than a transparent one. Conversely, 10 articles whose retraction watermarks were almost invisible were deemed to be adequately marked. COPE's advice that articles'

[Physostigmine for the prevention of postanaesthetic shivering following general anaesthesia - a placebo-controlled comparison with nefopam.](#)
Röhm KD, Riechmann J, **Boldt J**, Schuler S, Suttner SW, Piper SN.
Anaesthesia. 2005 May;60(5):433-8. Retraction in: [Anaesthesia, 2011 Jul;66\(7\):646](#).
PMID: 15819761 [PubMed - indexed for MEDLINE]
[Related citations](#)

[A comparison of nefopam and clonidine for the prevention of postanaesthetic shivering: a comparative, double-blind and placebo-controlled dose-ranging study.](#)

Piper SN, Röhm KD, Suttner SW, Maleck WH, Kranke P, **Boldt J**.
Anaesthesia. 2004 Jun;59(6):559-64. Retraction in: [Anaesthesia, 2011 Jul;66\(7\):646](#).
PMID: 15144295 [PubMed - indexed for MEDLINE]
[Related citations](#)

[Prevention of propofol-induced injection pain by remifentanyl: a placebo-controlled comparison with lidocaine.](#)

Roehm KD, Piper SN, Maleck WH, **Boldt J**.
Anaesthesia. 2003 Feb;58(2):165-70. Retraction in: [Anaesthesia, 2011 Jul;66\(7\):646](#).
PMID: 12625310 [PubMed - indexed for MEDLINE]
[Related citations](#)

Figure 1: Selected results from a PubMed search for 'Boldt J[Author] AND Anaesthesia[journal]' (National Library of Medicine [NLM]).

retracted status 'should be indicated as clearly as possible'⁴ would seem to be better fulfilled by an opaque watermark than by a faint one.

Making retraction obvious

PubMed uses no watermarks, bold, or pallid, to draw users' attention to the fact that an article has been retracted. A PubMed search for Boldt's publications in the journal *Anaesthesia* returns an unremarkable looking list of results, part of which is shown in Figure 1. It is quite possible to miss the links to the citations for the retraction notices if you are not looking for them.

What happens when you select one of these articles for further inspection? Click on the link to the middle paper in Figure 1 and you will be given a link to the citation for the retraction notice, just above the abstract (see Figure 2).⁵

Okay, you probably wouldn't miss it, but a brighter, more eye-catching alternative would

probably be better. Something as simple as highlighting the retraction information in red might work.

The publisher of the article in Figure 2, Wiley, does a better job, prefacing the article's title on its website with 'THIS ARTICLE HAS BEEN RETRACTED'.⁶ There is no missing that! Moreover, clicking on the 'Get PDF' link takes you to a copy of the article bearing a transparent watermark of the kind that Elia *et al.* like (Box 2).⁷

Box 2

Unfortunately, I cannot show a screenshot of the first page of the retracted article, as I intended, because Wiley denied permission, citing concerns that it might 'incorrectly imply that the retraction applies to a particular Wiley journal, or indeed to Wiley in particular'. I do not feel that a journal or publisher that retracts an article should fear being stigmatised, assuming they are not culpable in some way. In the present case, there is a prominent reference to 'approval of the local ethics committee and written informed consent' in the *Materials and methods* section. That there seemingly was no ethics approval (see below) reflects author fraud, not an oversight by the journal or publisher. I argued as much in an email to Wiley, but they merely confirmed their original position.

Non-retraction

Nine of Boldt's articles were not retracted at all within the two years following publication of the original retraction recommendation. But, then, look at the wording of that recommendation: the 88

NCBI Resources How To

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed [Search Box] [Advanced]

Display Settings: Abstract [Send to:]

Anaesthesia. 2004 Jun;59(6):559-64.

A comparison of nefopam and clonidine for the prevention of postanaesthetic shivering: a comparative, double-blind and placebo-controlled dose-ranging study.

Piper SN, Röhm KD, Suttner SW, Maleck WH, Kranke P, **Boldt J**.

Author information

Retraction in
[Anaesthesia, 2011 Jul;66\(7\):646](#).

Abstract
Postanaesthetic shivering is a frequent complication following general anaesthesia. The aim of this study was to compare the effectiveness of three doses of nefopam with clonidine and placebo in the prevention of postanaesthetic shivering. We studied 371 patients undergoing abdominal or orthopaedic surgery. Patients were allocated to one of five

Figure 2: One of Boldt's retracted articles in PubMed, with a link to the appropriate retraction notice citation (NLM).

articles are ones for which ‘LÄK-RLP [Landesärztekammer Rheinland-Pfalz, the State Medical Association of Rheinland-Pfalz] was unable to verify IRB approval’.² What does ‘unable to verify IRB approval’ mean? And why the uncertainty? COPE recommends that journal editors should consider retraction if a publication ‘reports unethical research’. Is it certain that Boldt’s articles do so?

Elia *et al.* received a partial explanation for failures to retract when they contacted the publishers of Boldt’s articles: six articles were not retracted because of ‘legal threats from Boldt’s co-authors’.³ While the authors do not elaborate on the nature of these threats, it should be noted that smaller journals often lack the resources to engage in costly legal battles. Certainly, any situation where journal editors feel unable to retract condemned articles is a cause for concern.

Retracted articles: To delete or preserve?

Elia *et al.* further contacted the editors-in-chief who had not retracted Boldt’s articles to their satisfaction. The editor of one journal that had deleted the content of the retracted articles disagreed that retracted articles should be preserved because he felt their data were ‘false and therefore valueless’.³ I’m not sure I agree. Are data obtained in an unethical way automatically false and valueless? The Boldt case is not one of data fabrication. One could argue that the data should perhaps be deleted because they are not false and valueless. Because people could choose to ignore the apparent ethics breach and use the data anyway.

Room for improvement?

In summing up, the authors highlight what they consider to be the problems with current retraction procedures:³

- Uncertainty as to which forms of misconduct warrant retraction
- Lack of clarity concerning who is responsible for retraction
- No oversight when it comes to checking that articles have been retracted, and in the correct way

They sign off by proposing solutions that clearly apportion responsibility for executing and monitoring retraction, and that protect editors from litigation. Sensible ideas, but they beg a vexing question, one that applies to so many worthy efforts to improve publication and post-publication processes: How should one implement them?

Suggestions, anyone?

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After a PhD in Cell Biology at the University of Manchester, Stephen Gilliver worked as a postdoc, an associate lecturer (at Manchester Metropolitan University), and a freelance copy editor. Now based in Malmö, Sweden, he is currently a full-time science editor, the Co-Editor of *Medical Writing*, and an AuthorAID mentor.