

Data Fabrication and Article Retraction

How Not to Get Lost in the Woods

ON February 12, we retracted, *via* electronic publication ahead of print, three articles after we were notified that the lead author, Scott Reuben, fabricated data in these reports.* As I write this, several more articles published in other journals are in the process of being retracted from this author for the same reason. The purpose of this editorial is not to discuss the ever-present problem of author misconduct and its investigation. Rather, it describes how ANESTHESIOLOGY will handle this body of literature, including a call for new research on topics covered by these retracted articles.

Ideally, retraction of articles should remove them from the literature and prevent their influence on ongoing research and clinical care. The traditional mechanics of article retraction only partially address these goals. These include publication of formal retraction notices in the journals themselves and linkages between the PubMed entries for the original articles and the notice of their subsequent retraction. A cursory analysis of citations to work by this author shows that the retracted articles have been considerably cited since 2002 (fig. 1). In terms of citations per article published by Reuben, the retracted articles have been cited more than twice as often as those not retracted.

PubMed retraction alone is unlikely to affect continued citation of these fabricated data. ANESTHESIOLOGY will supplement the actions by PubMed in two manners. First, we will compile a complete list of all retracted articles involving Dr. Reuben's work and will search all manuscripts as they approach acceptance through our peer-review system to assure that these articles are no longer cited by our authors. Second, we will share this list and policy with other journals that publish work in anesthesia and pain research.

If scientific progress is considered to be a walk through the woods toward a goal, we now are left with missing signposts, some of which directed us down specific paths in research and perhaps in clinical care. For example, in an editorial that accompa-

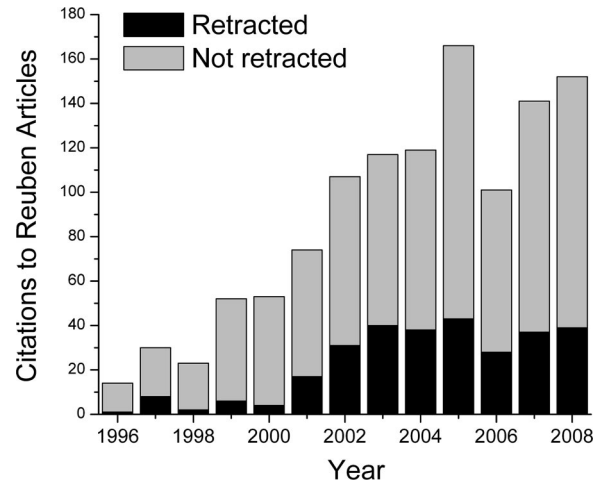


Fig. 1. Total citations per year from published articles by S. S. Reuben that are now retracted and those that have not been retracted. Source: ISI Web of Knowledge. Philadelphia, Thomson Reuters. Available at: <http://www.isiwebofknowledge.com/>. Accessed February 2, 2009.

nied one of the retracted articles in Regional Anesthesia and Pain Medicine, I called for a new line of research on reducing chronic pain based on findings from these fabricated data.¹ Although we may not be lost in the woods, these retractions clearly raise the possibility that we might be heading in wrong directions or toward blind ends in attempts to improve pain therapy.

Confirmatory research is essential to solidify the certainty of new findings and to determine whether new findings can be widely generalized. The mission of ANESTHESIOLOGY, however, is to promote seminal discovery, and most high-impact research journals share this mission, leading to bias against publishing confirmatory research. As such, an article aiming to confirm Dr. Reuben's research would be unlikely to be successful through our normal peer review.

By this editorial, I am calling for submission of studies reexamining the questions that seemed to be answered by Reuben in the retracted articles. I ask that authors clearly state in the introduction that their study is addressing a novel hypothesis that had been tested in a retracted article (for which the citation should appear as a footnote rather than a regular citation). Assuming other publications have not addressed the hypothesis, we will consider these submissions to be novel research and prioritize them accordingly.

Translational science aims to advance clinical care by improving our understanding of mechanisms of disease

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* Reuben SS, Vieira P, Faruqi S, Verghis A, Kilaru PA, Maciolek H: Local administration of morphine for analgesia after iliac bone graft harvest. ANESTHESIOLOGY 2001; 95:390-4; Reuben SS, Buvenandran A, Kroin JS, Steinberg RB: Postoperative modulation of central nervous system prostaglandin E₂ by cyclooxygenase inhibitors after vascular surgery. ANESTHESIOLOGY 2006; 104:411-6; Reuben SS, Buvenandran A, Kroin JS, Raghunathan K: Analgesic efficacy of celecoxib, pregabalin, and their combination for spinal fusion surgery (abstract). ANESTHESIOLOGY 2006; 105:A1194.

and of mechanisms and efficacy of therapy. We run the risk of being misled in these aims when author misconduct occurs. Hopefully, the steps outlined in this editorial will help to remove misleading directions spurred by the retracted articles in ANESTHESIOLOGY and other journals and will foster reexamination of specific hypotheses for improving analgesia for our patients.

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Reference

1. Eisenach JC: Preventing chronic pain after surgery: Who, how, and when? *Reg Anesth Pain Med* 2006; 31:1-3