Retracted Publications: The Hidden World of Biomedical Literature

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Retracted Publications: The Hidden World of Biomedical Literature

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University of Michigan Taubman Health Sciences Library
Reasons a publication may be retracted are varied

• Scientific misconduct

• Plagiarism or self-plagiarism

• Author or copyright issues

• Duplication of a publication, either by the author or the fault of the publisher

• Unintentional errors

• Conducting human subject research without IRB approval
Surge in retracted publications


Why the surge & the impact

• The pressure to publish in academia to further a career.

• The stigma of retraction can haunt the author or authors throughout a lengthy career, even if the reason for the retraction is not due to scientific misconduct—plagiarism, false claims or fake data—but is caused simply by embarrassing, unintentional errors.

• Lead to erosion in the public mind of the trustworthiness of the results presented.

• Influence the delivery of health care.
It was the kind of study that made doctors around the world sit up and take notice: Two popular high-blood-pressure drugs were found to be much better in combination than either alone. “There was a ‘wow’ reaction,” recalls Franz Messerli, a New York doctor who, like many others, changed his prescription habits after the 2003 report.

Unfortunately, it wasn’t true. Six and a half years later, the prestigious medical journal The Lancet retracted the paper, citing “serious concerns” about the findings.

The damage was done. Doctors by then had given the drug combination to well over 100,000 patients. Instead of protecting them from kidney problems, as the study said the drug combo could do, it left them more vulnerable to potentially life-threatening side effects, later studies showed.

Journal Retracts 1998 Paper Linking Autism to Vaccines

By GARDINER HARRIS
Published: February 2, 2010

"...The Lancet...retracted a 1998 research paper that set off a sharp decline in vaccinations in Britain after the paper's lead author suggested that vaccines could cause autism. The retraction by The Lancet is part of a reassessment that has lasted for years of the scientific methods and financial conflicts of Dr. Andrew Wakefield, who contended that his research showed that the combination measles, mumps and rubella vaccine might be unsafe. Despite a wealth of scientific studies that have failed to find any link between vaccines and autism, the parents fervently believe that their children's mental problems result from vaccinations. ...the overwhelming body of research by the world's leading scientists...concludes there is no link between M.M.R. vaccine and autism...."
ANIL POTTI, Joseph Nevins and their colleagues at Duke University in Durham, North Carolina, garnered widespread attention in 2006 when they announced that they could predict ... which chemotherapy drug would be most effective for an individual for the treatment of lung, breast or ovarian cancer using a colorful chart of genes called expression arrays. At the time, their work looked like a great step in advancing personalized medicine. However, when researchers at the MD Anderson Cancer Center in Houston tried to reproduce the results that Potti and Nevins reported in several papers, they were unable to do so, finding serious errors in the research. The MD Anderson researchers concluded that “...patients whose doctors relied on” the model reported by Potti and Nevins “would end up being given a drug they were less likely to benefit from instead of more likely”...They also concluded that following the procedures proposed by Potti et al. would have “the potential to be very damaging to patients.”
Retraction Watch
Feb 14, 2012

The Anil Potti retraction record so far
with 15 comments

A 60 Minutes segment Sunday on Anil Potti has drawn national attention to the case, so we thought this would be a good time to compile all of the retractions and corrections in one place.

Duke has said that about a third of Potti's 40-odd papers would be retracted, and another third would have "a portion retracted with other components remaining intact," so this list will continue to grow. We'll update it as we hear about new changes.

Retractions:
2. "Characterizing the Clinical Relevance of an Embryonic Stem Cell Phenotype in Lung Adenocarcinoma," in Clinical Cancer Research
3. "An Integrated Genomic-Based Approach to Individualized Treatment of Patients With Advanced-Stage Ovarian Cancer" in the Journal of Clinical Oncology (JCO)
4. "Pharmacogenomic Strategies Provide a Rational Approach to the Treatment of Cisplatin-Resistant Patients With Advanced Cancer" also in the JCO

Corrections:
2. "Gene Expression Profiles of Tumor Biology Provide a Novel Approach to Prognosis and May Guide the Selection of Therapeutic Targets in Multiple Myeloma," in the JCO
3. "Age-Specific Differences in Oncogenic Pathway Dysregulation and Anthracycline Sensitivity in Patients With Acute Myeloid Leukemia," in the JCO
4. "Young Age at Diagnosis Correlates With Worse Prognosis and Defines a Subset of Breast Cancers With Shared Patterns of Gene Expression," in the JCO
5. "Age-Specific Differences in Oncogenic Pathway Dysregulation Seen in Human Breast Tumors," in PLoS ONE

Partial retraction:
Our ongoing research focuses on:

1. Finding the number of retractions to publications that appear in PubMed, the primary database of biomedical journals created by the National Library of Medicine.

2. Tracking the time from when a retracted article is posted on line to the time that the retraction to said article is posted.

3. Determining the reason(s) that selected articles for our study are retracted.

4. Tracing via a cited-article database to determine whether the retracted article continues to be cited in the literature.
Methods: Locating Retractions & Collecting Data

PubMed:
• Publication Type: Retracted Publication
• Date range: 10 years (from 26 Nov 2011)

Data Points:
• First Author
• PMID
• Publication Date (month/year)
• Retraction Date (month/year)

http://www.ncbi.nlm.nih.gov/pubmed?term=retracted%20publication%5BPublication%20Type%5D
Methods: Coding

- Author Issues
- Data Error
- Data Manipulation
- Duplicate Publication
- IRB Approval
- No Reason Given
- Other
- Plagiarism
- Self-Plagiarism
- Unable to Replicate Results

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Results: Preliminary

- Author Issues=51
- Data Error=280
- Data Manipulation=133
- Duplicate Publication=112
- IRB Approval=54
- No Reason Given=79
- Other=108
- Plagiarism=262
- Self-Plagiarism=93
- Unable to Replicate Results=76
Methods: Challenges

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Monitoring Mechanisms

- **COPE** (Committee on Publication Ethics)
- **ICMJE** (International Committee of Medical Journal Editors)
- Retraction Watch
COPE (Committee on Publication Ethics)*

COPE aims to define best practice in the ethics of scholarly publishing and to assist editors, editorial board members, owners of journals and publishers to achieve this. One of the ways in which it fulfills this mission is by the publication of its Code of Conduct and Best Practice Guidelines for Journal Editors.”

*http://publicationethics.org/
“The retraction or expression of concern, so labeled, should appear on a numbered page in a prominent section of the print journal as well as in the online version, be listed in the Table of Contents page, and include in its heading the title of the original article. It should not simply be a letter to the editor. Ideally, the first author of the retraction should be the same as that of the article, although under certain circumstances the editor may accept retractions by other responsible persons. The text of the retraction should explain why the article is being retracted and include a complete citation reference to that article.”
Retraction Watch

• A blog that reports on retractions of scientific papers.

• An informal repository for retractions.

• Investigate how journals themselves deal with retractions.

*http://retractionwatch.wordpress.com/*
Anti-Plagiarism Software

- **eTBLast**
  
  [Image of eTBLast]

  http://etest.vbi.vt.edu/etblast3/

- **Déjà vu**

  [Image of Deja Vu]

  Deja Vu: a Database of Highly Similar Citations*

  Powered by eTBLAST
  Innovation Labs
  Virginia Bioinformatics Institute

  http://dejavu.vbi.vt.edu/dejavu/
• Developed by Virginia Bioinformatics Institute at Virginia Tech
• Can detect text similarities across several databases
• Can detect highly similar citations in Medline
• *Users can:

(1) browse Déjà vu entries with no specific search method. Each entry links to the scientific citation along with full text whenever freely available;

(2) search Déjà vu content by authors, title word, abstract word, year and comment word;

(3) view Déjà vu results in a particular category or identified by a particular ‘discovery method’ (eTBLAST or manual);

(4) provide comments in order to contest a record or submit a potential duplication that will be reviewed by authors of this manuscript.

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