SAFEGUARDING THE INTEGRITY OF THE SCIENTIFIC RECORD:
WHAT EDITORS AND PUBLISHERS (CAN) DO

Charlotte Haug, MD, PhD, MSc
Editor-in-Chief, Tidsskrift for den norske legeforening
Vice-chair of COPE (Committee of Publication Ethics)
Member of ICMJE (International Committee of Medical Journal Editors)
PUBLICATION ETHICS

• What is it, and why does it matter?
• What can scientists and editors do to promote honest reporting of science?
• COPE, the Committee on Publication Ethics
• The challenges ahead
“IF I HAVE SEEN FURTHER IT IS ONLY BY STANDING ON THE SHOULDERS OF GIANTS”

Sir Isaac Newton in letter to Robert Hooke (February 15, 1676)

Researchers are individuals, but science is a collective effort
ADVANCES IN SCIENCE

• seldom made by single researcher or scientific paper
• made by many scientists reviewing and discussing the scientific findings and the scientific literature
Introduction to Philosophical Transactions of the Royal Society (UK), first published in 1665:

“There is nothing more necessary for promoting the improvement of science than the communication to those who apply their studies so that things are discovered or put into practice by others. It is proper to employ this Journal to gratify those whose engagement in such studies entitles them to the knowledge of science”
“SCIENCE DOES NOT EXIST UNTIL IT IS PUBLISHED”

Drummond Rennie, Deputy Editor, JAMA Journal of the American medical Association

“The present state of Medical journals”. Lancet • 1998
THE PRINCIPLES OF SCIENTIFIC COMMUNICATION

• To communicate observations to others
• To conduct further research based on those observations
• To create a scientific record
QUALITY AND INTEGRITY OF THE SCIENTIFIC LITERATURE

• ... is dependent on high-quality research and of honest, high-quality reporting of the results

Fraud and misconduct in research and publication of research will seriously affect the scientific record
SO WHY IS THERE MISCONDUCT IN RESEARCH AND PUBLICATION?

HAS IT ALWAYS BEEN LIKE THIS?
FIRST OPERATION UNDER ETHER, 1846,

Painting by Robert Cutler Hinckley, courtesy of the Boston Medical Library in the Francis A. Countway Library of Medicine.
THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

Vol. XXXV. WEDNESDAY, NOVEMBER 18, 1846. No. 16.

INSENSIBILITY DURING SURGICAL OPERATIONS PRODUCED BY INHALATION.

Read before the Boston Society of Medical Improvement, Nov. 9th, 1846, an abstract having been previously read before the American Academy of Arts and Sciences, Nov. 30, 1846.

By Henry Jacob Bigelow, M.D., one of the Surgeons of the Massachusetts General Hospital.

[Communicated for the Boston Medical and Surgical Journal.]

It has long been an important problem in medical science to devise some method of mitigating the pain of surgical operations. An efficient agent for this purpose has at length been discovered. A patient has been rendered completely insensible during an amputation of the thigh, regaining consciousness after a short interval. Other severe operations have been performed without the knowledge of the patients. So remarkable an occurrence will, it is believed, render the following details relating to the history and character of the process, not uninteresting.

On the 16th of Oct., 1846, an operation was performed at the hospital, upon a patient who had inhaled a preparation administered by Dr. Morton, a dentist of this city, with the alleged intention of producing insensitivity to pain. Dr. Morton was understood to have extracted teeth under similar circumstances, without the knowledge of the patient. The present operation was performed by Dr. Warren, and though comparatively slight, involved an incision near the lower jaw of some inches in extent.
LOOKING BACK

- No peer-review
- No research protocols
- No ethics committees
- No detailed instructions for authors
- “Fast-track” publication
DEVELOPMENT OF PUBLICATION ETHICS

- Closely linked to development of research ethics (Declaration of Helsinki) - 1964
- Research more complex and specialized – peer-review
- Need for common guidelines and standards – so easier for authors
- ICMJE (International Committee of Medical Journal Editors/Vancouver-group) - 1978
- COPE (Committee of Publication Ethics) – 1997
RESPONSIBILITIES OF JOURNAL EDITORS

• Authors and scientists
  • fair treatment
  • transparent guidelines

• Reputation of journal
  • New, true, interesting, relevant

• Scientific record
  • Honest and representative
GUIDELINES DEVELOPED AT THE 2ND WORLD CONFERENCE ON RESEARCH INTEGRITY IN SINGAPORE, JULY 2010:

• "Editors are accountable and should take responsibility for everything they publish"

• "Editors should guard the integrity of the published record by issuing corrections and retractions when needed and pursuing suspected or alleged research and publication misconduct"

• "Editors should pursue reviewer and editorial misconduct"

• "Editors should have appropriate policies in place for handling editorial misconduct"
ICMJE

- Guidelines for manuscripts (1978 - )
  - authors
- Publication ethics (1990 - )
  - journal and scientific record
COPE

- Discussion among editors on how to solve problems (1997 - )
- Guidelines and codes of conduct
TYPES OF PUBLICATION MISCONDUCT

• Fabrication
• Falsification
• Plagiarism
• Publishing unethical research
• Authorship issues (ghost, guest and gift)
• Undeclared conflicts of interest
• Selective, duplicate or redundant publication
• Reviewer and editor misconduct
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COPE COMMITTEE ON PUBLICATION ETHICS
Promoting integrity in research publication
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HIGH-PROFILE CASES HAVE CAUSED A LOT OF HARM

- To the researchers themselves
- To their institutions
- To journals

- But most importantly to patients and to the scientific literature as a whole
HWANG WOO-SUK PUBLISHED TWO GROUNDBREAKING ARTICLES ON STEM CELL RESEARCH IN THE JOURNAL SCIENCE IN 2004.

THE ARTICLES WERE RETRACTED IN 2006 BECAUSE THE RESULTS HAD BEEN FABRICATED.

But Hwang's articles were cited by more than 200 other articles. And half of these articles had been cited further – to from 1 to 20 other articles!
HWANGS CASE TYPICAL:

• Very serious fraud will most likely be found out – sooner or later
• Scientific articles will be “retracted”
• But other researchers continue to cite these articles

The information from these articles are already embedded in the scientific literature!
CAN THE "LESS SERIOUS" MISCONDUCT BE JUST AS HARMFUL?

- Authorship issues (ghost, guest and gift)
- Undeclared conflicts of interest
- Selective, duplicate or redundant publication
- Reviewer and editor misconduct

All this may contribute to biased and selective reporting. Does it matter?
COPE began in 1997 as an informal forum for discussing ethical issues relating to research and publication in biomedical journal publishing.

Membership of COPE was aimed primarily, but not exclusively, at editors of scholarly (learned) journals.
IN 2007 – 2008...

• COPE was more formally established as a limited company and as a UK-registered charity

• COPE's stated aim is "The promotion for the public benefit of ethical standards of conduct in scientific research and the publication of science journals"

• In 2007/08, membership increased substantially: from around 350 editors to around 3500
IN 2013...

- COPE currently has over 8500 members
- COPE is governed by a Council of 14 members + 4 officers from almost all parts of the world
- COPE is now international in scope and fully inclusive in subject matter
- All academic disciplines and fields are now covered, for example:
  - Biomedicine
  - Pure and applied sciences
  - Engineering and technology
  - Arts, humanities and social sciences
PURPOSE: TO GIVE ADVICE AND GUIDANCE TO EDITORS AND PUBLISHERS

- Through website
- Via email
- Via quarterly Forum meetings (virtual or in London)
- Seminars
  - European (annual)
  - North American (annual)
  - Asia-Pacific (annual)
  - Iran (2011)
  - Brazil (2012)
  - India (2013)
"Few journals have the internal resources to deal with all the complex ethical and procedural issues that arise from misbehavior by a small minority of authors.

Fortunately, COPE provides a supportive community of experienced editorial staff ready to offer useful advice and share lessons learned from dealing with similar problems.

Decisions can be made with much greater confidence knowing that they are supported by one's peers."
Promoting integrity in research publication

COPE is a forum for editors and publishers of peer reviewed journals to discuss all aspects of publication ethics. It also advises editors on how to handle cases of research and publication misconduct. Read more about COPE.

FEATURED
COPE Ethical Guidelines for Peer Reviewers

COPE has launched new guidelines, Ethical Guidelines for Peer Reviewers (download PDF 445 kb), which set out the basic principles and standards to which all peer reviewers should adhere during the peer-review process in research publication. Peer review in all its forms plays an important role in ensuring the integrity of the scholarly record. The process depends to a large extent on trust, and requires that everyone involved behaves responsibly and ethically. Peer reviewers play a central and critical part in the peer-review process, but too often come to the role without any guidance and unaware of their ethical obligations. The aim of the COPE guidelines has been to make them generic so that they can be applied across disciplines. A press release on the launch is also available (download PDF 90 kb).

Learn more

NEWS & OPINION view all ▶

News / New COPE council members

27/3/2013 5:54pm

COPE is very pleased to announce the appointment of four new COPE council members, following our recent elections: Mohammad Abdollahi, Deborah Poff, Michael Wise and Adrian Ziderman. Mohammad Abdollahi is editor in chief of DARU Journal of Pharmaceutical Sciences, published by Tehran University of Medical Sciences. Mohammad is based in Tehran, Iran. Deborah Poff is editor in chief of the Journal of Academic Ethics. Deborah is based in Brandon, Canada.

News / Presentations from COPE 2013 European Seminar now online

26/3/2013 12:46pm

The presentations and posters from the 2013 COPE European seminar are now available online. The theme of the seminar was “Publication ethics from student to professional” and includes presentations from Professor Pietro Drent, Professor Emeritus at VU University of Amsterdam; Dr Irene Hames, COPE council member and former managing editor of The Plant Journal; and Gill Rowell, Academic Advisor at Turnitin.
WEBSITE

- [www.publicationethics.org](http://www.publicationethics.org)
  - A series of flowcharts (also available translated into select languages – more being added)
  - A Code of Conduct for Publishers (Mar 2011)
  - An eLearning course aimed at new editors (members only)
  - Sample letters for handling common problems
  - Retraction guidelines
  - Guidelines for peer-reviewers
  - Presentations
  - Other guidance (eg for interaction with institutions, for editorial boards)
FLOWCHARTS

• The flowcharts are designed to help editors follow COPE’s Code of Conduct and implement its advice when faced with cases of suspected misconduct.

• They can be downloaded individually or as a complete set.

• If you want to use the flowcharts on your website or in a publication
  • The flowcharts are the copyright of COPE but we allow their reuse with appropriate accreditation for no charge.
THE FLOWCHARTS COVER

- Redundant (duplicate) publication
- Plagiarism
- Fabricated data
- Changes in authorship
- Ghost, guest or gift authorship
- Conflicts of interest
- General suspected ethical concerns
- Reviewer misconduct
What to do if you suspect plagiarism
(a) Suspected plagiarism in a submitted manuscript

Reviewer informs editor about suspected plagiarism

Thank reviewer and say you plan to investigate
Get full documentary evidence if not already provided

Check degree of copying

Clear plagiarism (unattributed use of large portions of text and/or data, presented as if they were by the plagiarist)

Minor copying of short phrases only (e.g., in discussion of research paper from non-native language speaker)
No misattribution of data

Redundancy (i.e., copying from author’s own work)—see flowcharts on redundancy

Contact corresponding author in writing, ideally enclosing signed authorship statement (or cover letter) stating that submitted work is original/the author’s own and documentary evidence of plagiarism

Contact author in neutral terms/expressing disappointment/explaining journal’s position
Ask author to rephrase copied phrases or include as direct quotations with references
Proceed with review

No problem

Discuss with reviewer
THE FLOWCHARTS ARE SO FAR TRANSLATED INTO:

Chinese
Italian
Spanish
French
Persian

And soon: Croatian, Japanese, Korean, Turkish, Arabic, Brazilian Portuguese
CASES ARE DISCUSSED

- All cases are entered into our database
- All cases and subsequent COPE recommendations are available at: www.publicationethics.org
- Cases are searchable by keyword
COPE CASES OVER TIME:

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THE CHALLENGE
PUBLICATION FRAUD AND MISCONDUCT

• Major fraud (approx. 2% of the cases) is very serious for the individual researcher/institution: Fabrication, falsification, theft of data, plagiarism

• “Minor fraud” is reported in 5-15% of the cases: Shortcuts, duplicate or selective reporting, conflicts of interest etc. etc. , is most serious for the integrity of the scientific record.

• The problem seems to be increasing.
HONEST AND ETHICAL REPORTING FROM RESEARCH

• Important for science and scientist

• But most important for those benefitting – or being harmed – when the results are being applied on individuals or societies.

• Scientists know this, so why does fraud and misconduct happen?
WHY DO RESEARCH?

• To find "the truth"
• To advance knowledge
• ...but also to promote careers and attract funding!
The Paradox

- the more successful research is, the more prone it is to fraud and misconduct!
- Research in medicine is a case in point
THE CHALLENGE

• As long as the number of scientific publications are used as "academic currency" – to promote careers and attract funding

• It will be tempting (for scientists) to make shortcuts

• It will be tempting (for institutions) to look the other way
THANK YOU!