

Research integrity and peer review

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Ethical issues in peer review

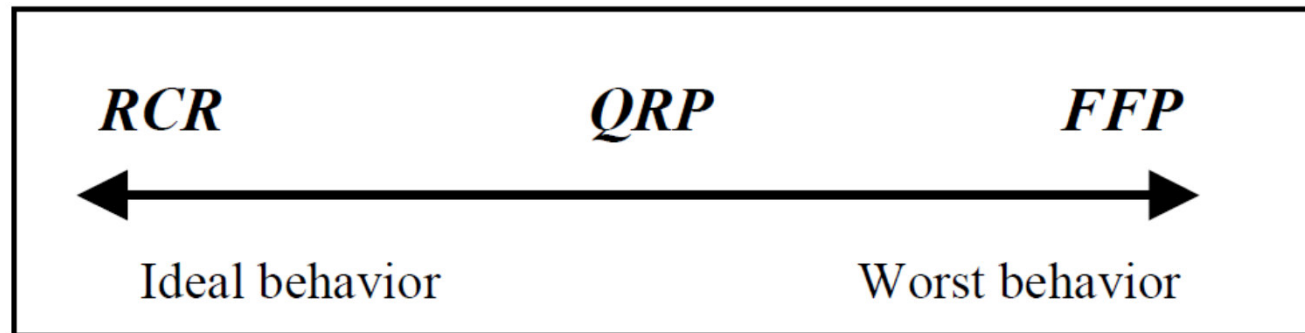
Peer review raises many ethical issues and problems, just as research itself.

These ethical issues can be complex and serious.

There is no clear right or wrong way or easy decisions.

What is responsible conduct of research?

Definitions (Steneck, Sci Eng Ethics 2006):

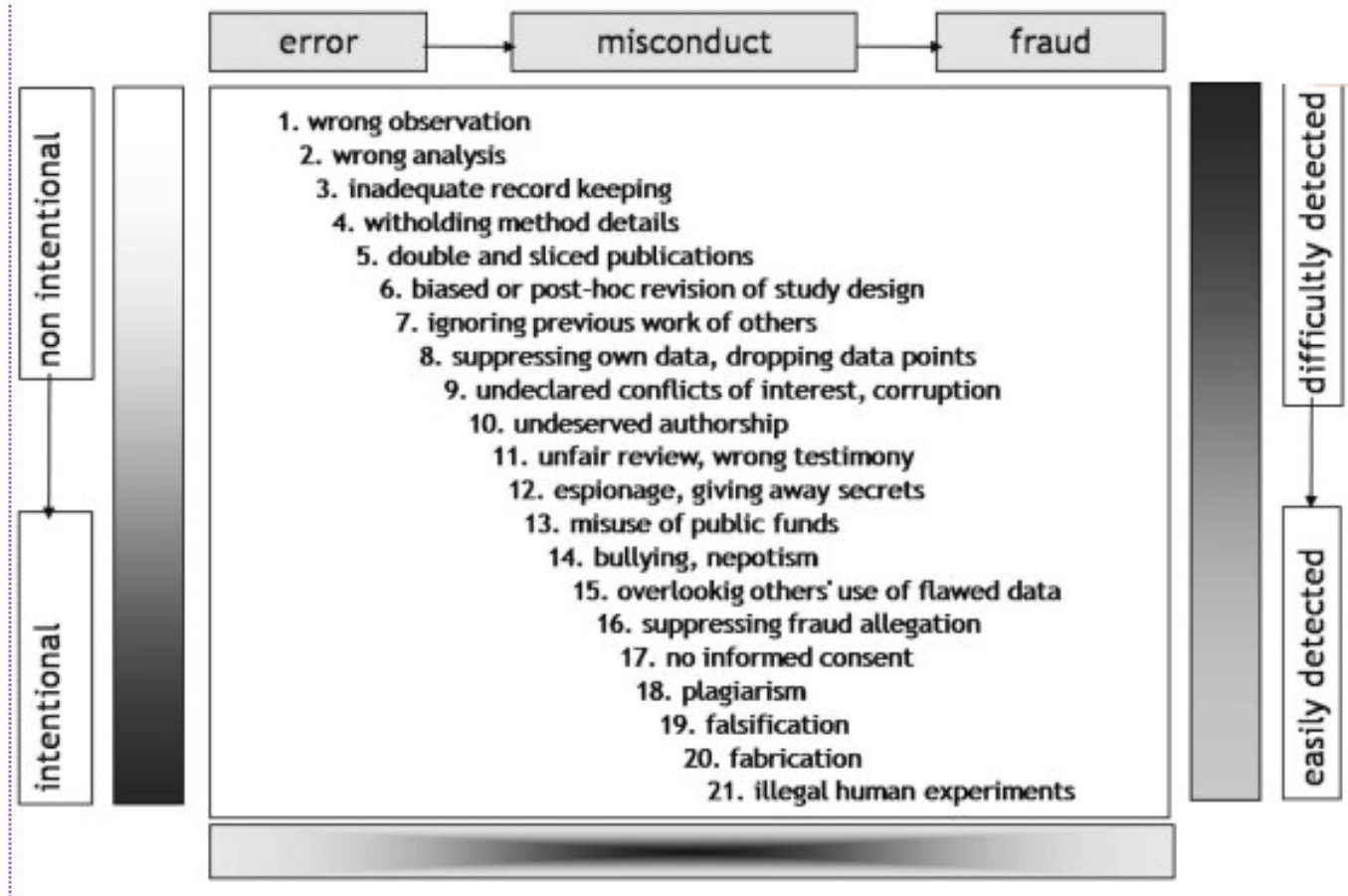


Responsible conduct of research

Questionable research practices

Research misconduct: FFP – falsification, fabrication,
plagiarism

What is responsible conduct of research?



[Croat Med J.](#) 2010 Feb;51(1):7-15.

Conflict of interest in science communication: more than a financial issue. Report from Esteve Foundation Discussion Group, April 2009.

[Marcovitch H](#), [Barbour V](#), [Borrell C](#), [Bosch F](#), [Fernández E](#), [Macdonald H](#), [Marusić A](#), [Nylenna M](#); [Esteve Foundation Discussion Group](#).

RCR definitions

Responsible conduct of research

Research ethics

Research integrity

Responsible conduct of research

Conducting research in ways that fulfill the professional responsibilities of researchers, as defined by their professional organizations, the institutions for which they work and, when relevant, the government and public.

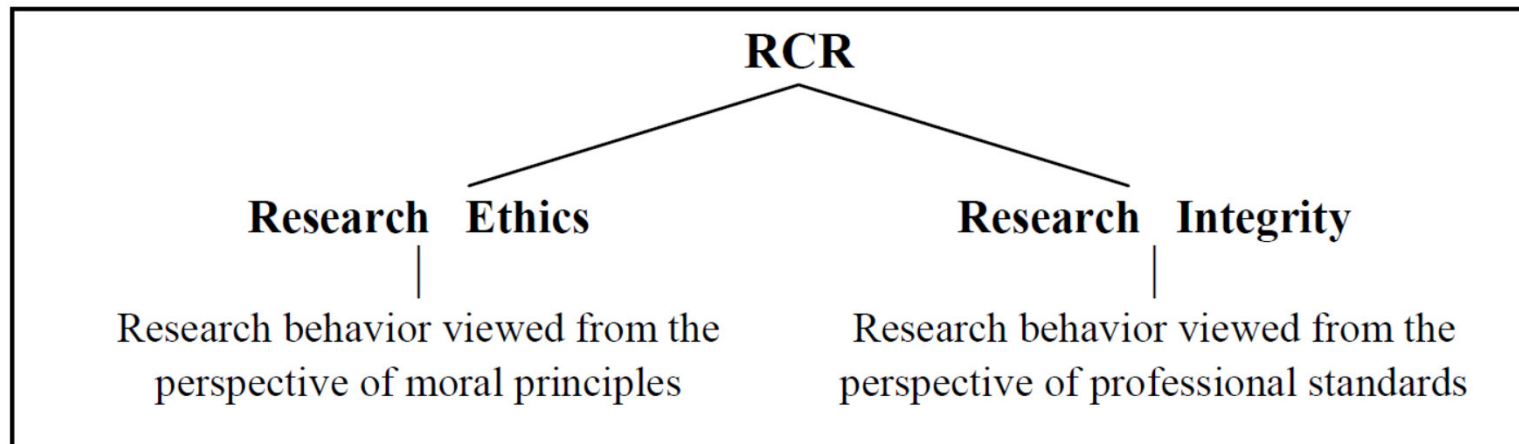
Research ethics

The critical study of the moral problems associated with or that arise in the course of pursuing research

Research integrity

The quality of possessing and steadfastly adhering to high moral principles and professional standards, as outlined by professional organizations, research institutions and, when relevant, the government and public

Research ethics vs integrity



Responsible conduct of research

- Planning research
 - Protection of human subjects
 - Welfare of laboratory animals
 - Conflicts of interest
- Conducting research
 - Data management practices
 - Mentor and trainee responsibilities
 - Collaborative research
- Reporting and reviewing research
 - Authorship and publication
 - Peer review

Example – sloppy peer review and/or editorial work?

Cell, Vol. 116, 527–540, February 20, 2004, Copyright ©2004 by Cell Press

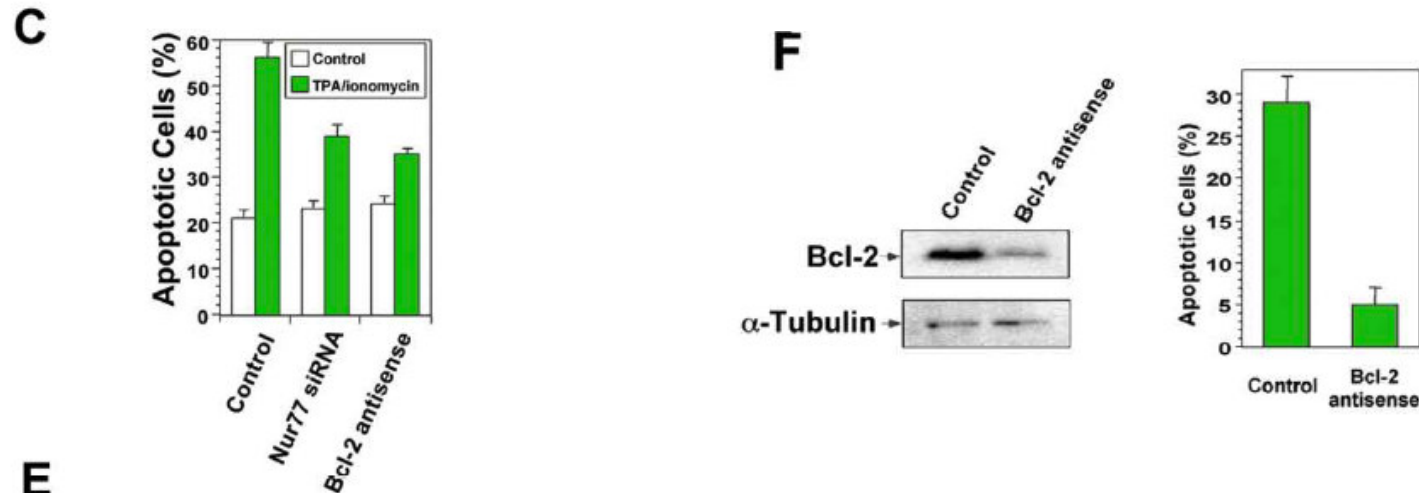


Figure 6. Nur77 Mitochondrial Targeting in Human PBLs and Apoptotic Effects of Nur77 and Bcl-2 Mutants

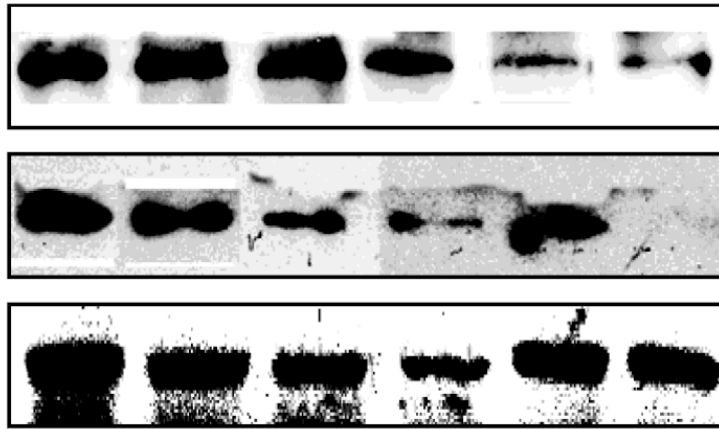
(A) Mitochondrial targeting of Nur77 in PBLs. GFP-Nur77 (1 μ g) and pDsRed2-Mito (1 μ g) were transfected into freshly isolated human PBLs. The cells were then treated with TPA (10 ng/ml) and ionomycin (0.5 μ M) for 30 min after 10 hr of transfection. GFP-Nur77 and mitochondria (pDsRed2-Mito) were visualized using confocal microscopy. Approximately 20% of the cells showed the pattern presented.

(B) Endogenous Nur77 accumulates in the PBL HM fraction. PBLs were treated with TPA and ionomycin as in (A) for the indicated times and HM fractions were isolated. Total cell lysates and HM fractions were subjected to immunoblotting as described in Figure 4B.

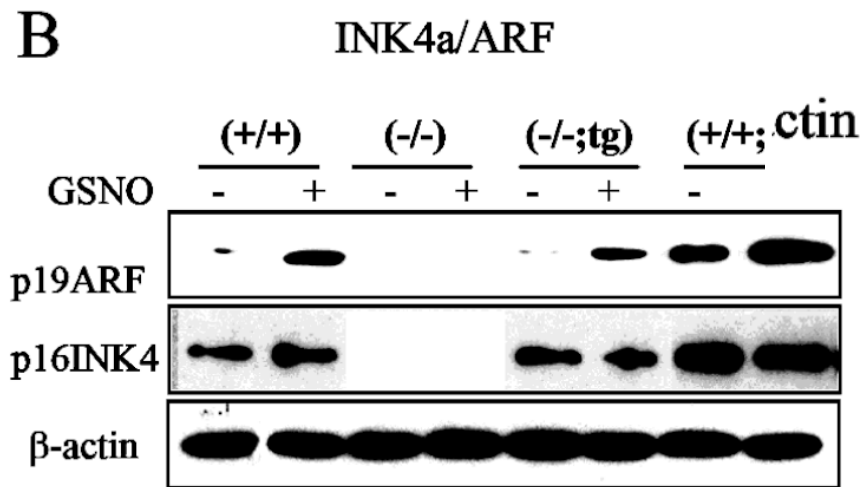
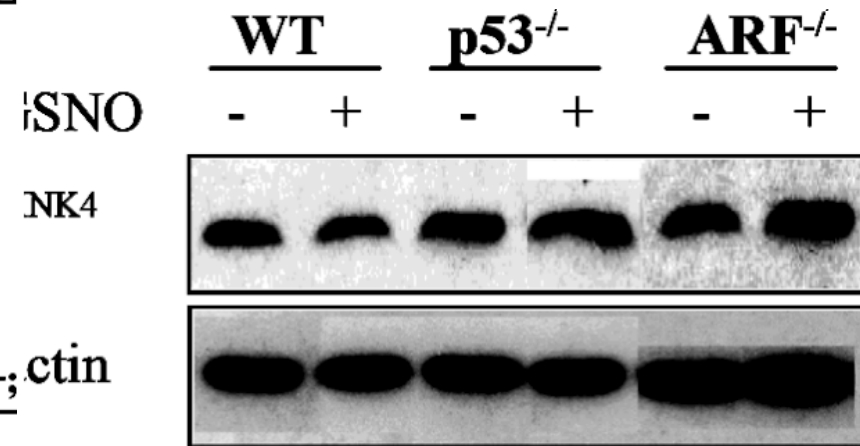
(C) Nur77 and Bcl-2 are required for apoptosis in PBLs. PBLs were transfected with control GFP siRNA, Nur77 siRNA, or Bcl-2 antisense oligonucleotides (2 μ g). After 40 hr, cells were treated with TPA and ionomycin for 7 hr and apoptotic cells (Annexin-V positive) were determined by flow cytometry. Bars represent average \pm means from two experiments.

(F) Bcl-2 is required for Nur77/ Δ DBD-induced apoptosis. GFP-Nur77/ Δ DBD (1 μ g) was cotransfected into PBLs with control oligonucleotides or Bcl-2 antisense oligonucleotides (2 μ g). After 48 hr, apoptotic cells were determined as described for (E). Bars represent average \pm means from two measurements.

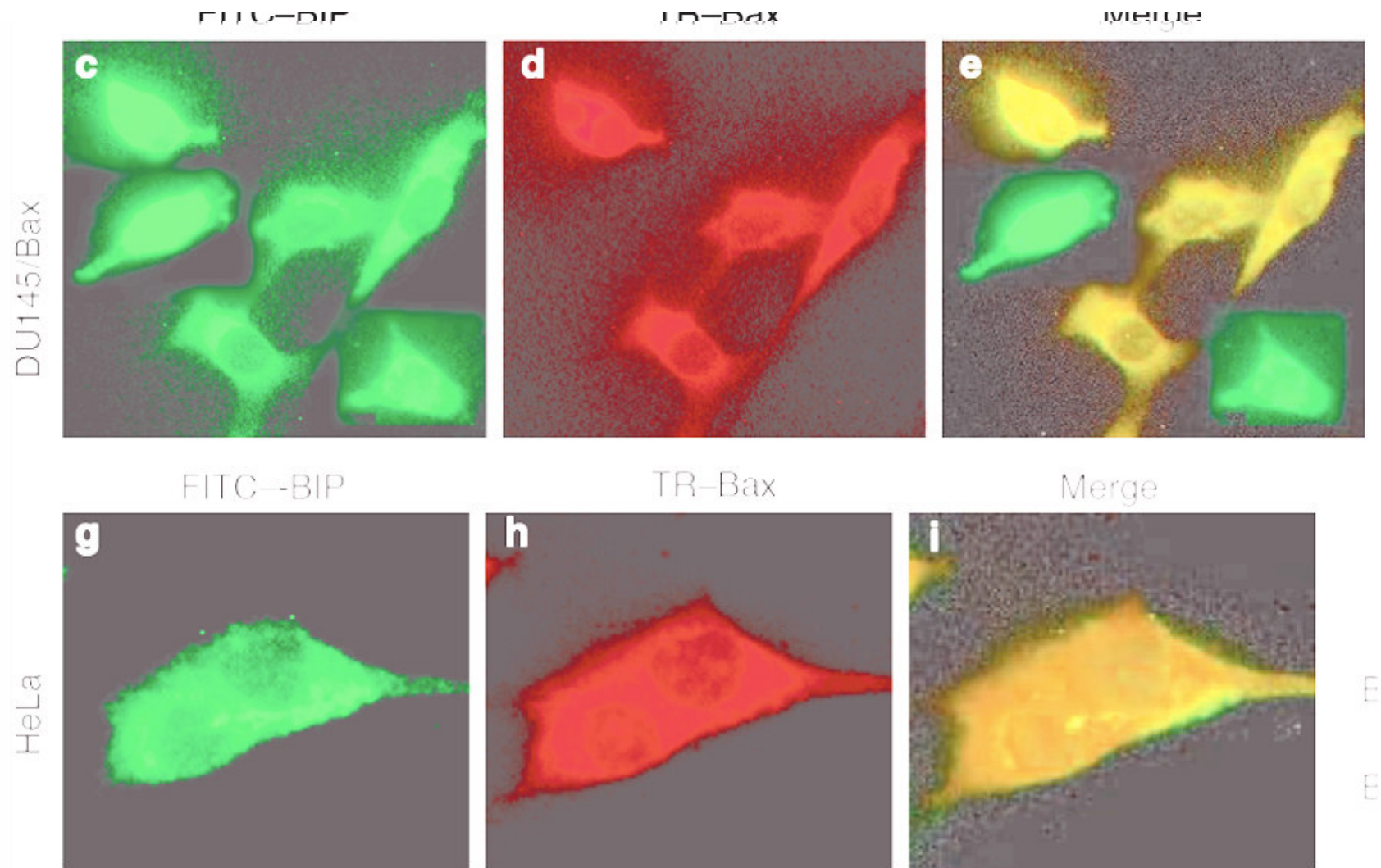
Thanks to David Vaux, International Council for Science



Thanks to
Mike Rossner
and David
Vaux



Responsible journals check their
images before publication



Nature Cell Biology - 5, 352 - 357 (2003)

Published online: 24 March 2003; | doi:10.1038/ncb955

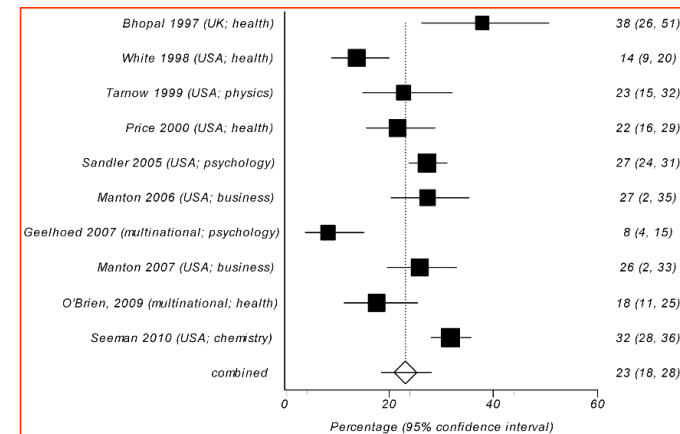
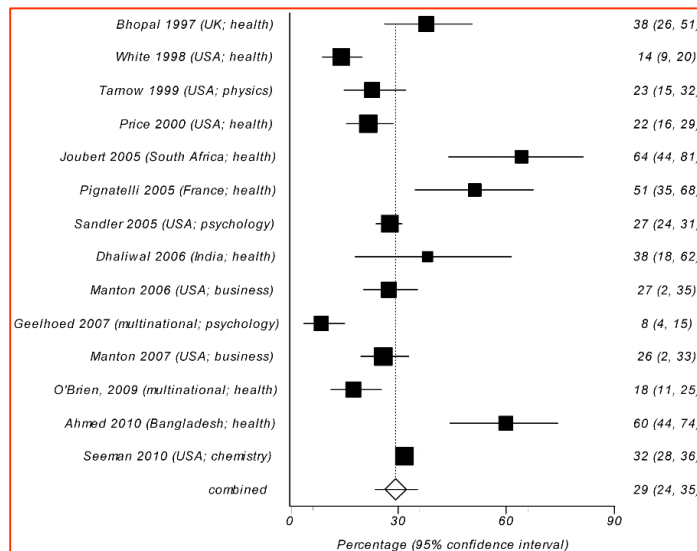
Thanks to
David Vaux

How common is misconduct?

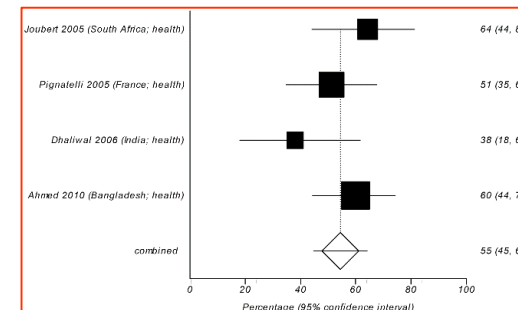
- Systematic review (screened 3207 papers) – Fanelli et al, PLoS ONE 2009
- Meta-analysis (18 studies – surveys of fabrication or falsification; plagiarism excluded)
- 2% admitted misconduct themselves (95% CI 0.9-4.5)
- 14% aware of misconduct by others (95% CI 9.9-19.7)

How common is misconduct?

- Systematic review on authorship problems – Marusic et al, PLoS One 2011
- Total pooled weighted estimate of **29%** (95% CI 24% to 35%)

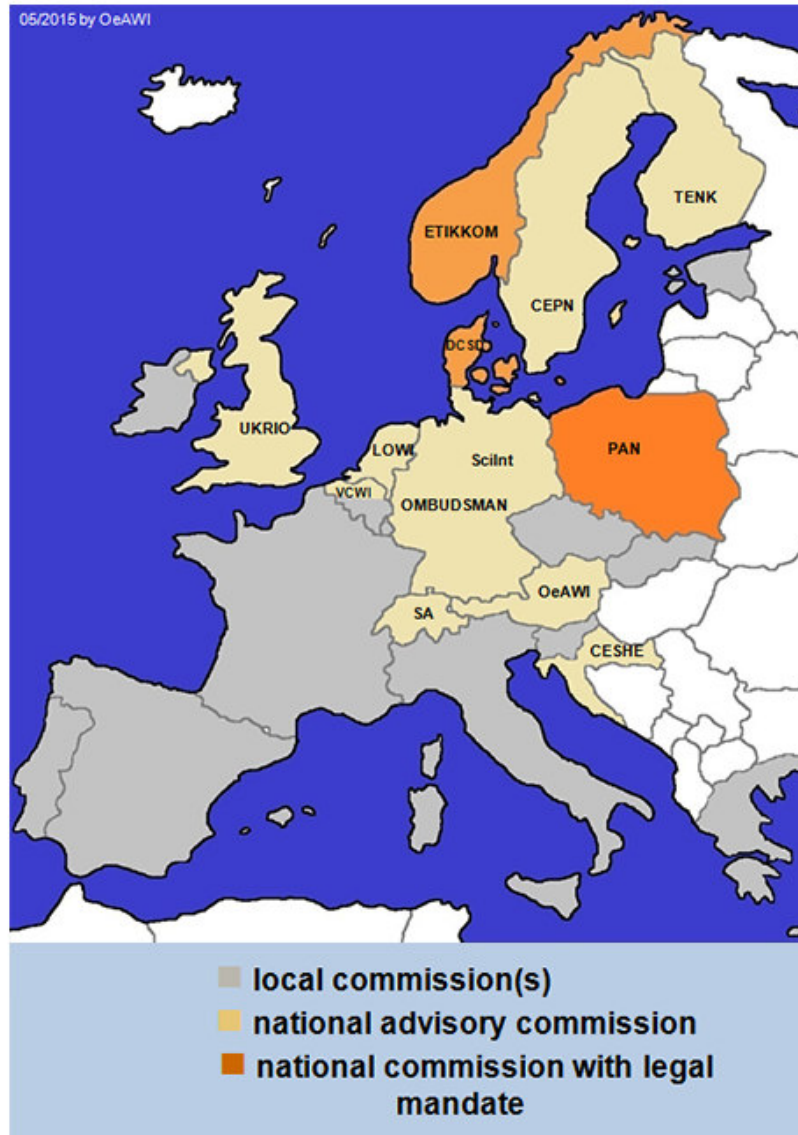


- Pooled weighted estimate UK/US:
23% (95% CI 18% to 28%)
- Pooled weighted estimate rest of world:
55% (95% CI 45% to 64%)



INVESTIGATION OF RESEARCH MISCONDUCT – LEVEL OF REGULATION

National codes on RI in Europe



National codes on RI in Europe

The screenshot shows the ENRIO (European Network of Research Integrity Offices) website. The header includes the ENRIO logo and navigation links: About ENRIO, Members, Activities, and Resources. The main content area displays search results for 'Manual of Conflicts of Interest by CSIC (2015)'. The results show 64 documents or links were found. The first result is a PDF document titled 'Manual of Conflicts of Interest by CSIC (2015)' with 50 pages. The table of contents lists: Prologue, Aims and scope of the institutional policy on conflicts of interest, Conflicts of interest. Actual, apparent and potential conflicts, Activities, scenarios and situations that may involve conflicts of interest within CSIC, Implementation of the institutional conflicts of interest policy. Procedures and actions. Body responsible for implementation and oversight, Regulatory

ENRIO

About ENRIO Members Activities Resources

Start / Resources

All Library Codes/Guidelines Training Annual reports/Cases Institutions

64 documents or links were found

Manual of Conflicts of Interest by CSIC (2015)
50 Pages

Table of contents: Prologue, Aims and scope of the institutional policy on conflicts of interest, Conflicts of interest. Actual, apparent and potential conflicts, Activities, scenarios and situations that may involve conflicts of interest within CSIC, Implementation of the institutional conflicts of interest policy. Procedures and actions. Body responsible for implementation and oversight, Regulatory

Example:

Financial, and other misconduct:

- Peer review abuse e.g., non-disclosure of conflict of interest, unfairly holding up a rival's publication



Research integrity in Europe

2.8 Reviewing, Evaluating and Editing

- Researchers take seriously their commitment to the research community by participating in refereeing, reviewing and evaluation.
- Researchers review and evaluate submissions for publication, funding, appointment, promotion or reward in a transparent and justifiable manner.
- Reviewers or editors with a conflict of interest withdraw from involvement in decisions on publication, funding, appointment, promotion or reward.
- Reviewers maintain confidentiality unless there is prior approval for disclosure.
- Reviewers and editors respect the rights of authors and applicants, and seek permission to make use of the ideas, data or interpretations presented.



Research integrity in Europe

3.1 Research Misconduct and other Unacceptable Practices

- Delaying or inappropriately hampering the work of other researchers.



Editorial standards

ICMJE, 1979

Uniform requirements for manuscripts submitted to biomedical journals

International Steering Committee of Medical Editors*

British Medical Journal, 1979, 1, 532-535

On 5 February 1979 the second meeting of the International Steering Committee of Medical Editors was held in Montreal. The committee approved the proposals for a uniform style for submitted manuscripts contained in the original Vancouver document¹ with some minor amendments. The revised version is published here, and many journals will begin to introduce the system later this year.

The editors of several journals (including the founder journals listed in Appendix 1) have agreed to receive manuscripts prepared and submitted in accordance with the requirements described here. Authors must also consult the instructions printed in the journal to which they plan to submit their manuscripts for information as to what clinical or scientific material is suitable for that particular journal and the types of papers that may be submitted—for example, original articles, review articles, case reports, and brief reports. In addition, the journal's own instructions contain important information concerning acceptable languages, length of articles, approved abbreviations besides those listed in this document, number of copies of manuscripts to be submitted, and requirements for transfer of copyright.

The material in this document will be revised at intervals. Inquiries and comments originating in North America should be sent to Edward J Huth, MD, *Annals of Internal Medicine*, 4200 Pine Street, Philadelphia, PA 19104; those originating in other regions should be sent to Stephen Lock, MA, MB, *British Medical Journal*, British Medical Association, Tavistock Square, London WC1H 9JR, United Kingdom.

*Members of the International Steering Committee are: John F Murray, MD (chairman); William R Barclay, MD; Susan Crawford, PhD; Edward J Huth, MD; Stephen Lock, MB; Robert W Mayo; Harriet R Meiss; Ian Munro, MD; Frances H Porter, MA; Arnold S Reiman, MD; David A E Shephard, MD; Therese Southgate, MD.

Reprints of these instructions will be available to editors of biomedical journals free of charge and to authors at a cost of 50p (including postage) from the Editor, *BMJ*. A full list of all participating journals will be published later this year.

Summary of requirements

Type manuscript double-spaced, including title page, abstract, text, acknowledgments, references, tables, and legends.

Each manuscript component should begin on a new page, in this sequence: title page; abstract and key words; text; acknowledgments; references; tables; each table, complete with title and footnotes, on a separate page; legends for illustrations.

Illustrations must be good quality, unmounted glossy prints usually 12.7 × 17.3 cm (5 × 7 in) but no larger than 20.3 × 25.4 cm (8 × 10 in).

Submit the required number of copies of manuscript and figures (see journal's instructions) in heavy-paper envelope. Submitted manuscript should be accompanied by covering letter, as described under "Submission of manuscripts," and permissions to reproduce previously published materials or to use illustrations that may identify subjects.

Follow journal's instructions for transfer of copyright. Authors should keep copies of everything submitted.

Preparation of manuscript

Type manuscript on white bond paper, 20.3 × 26.7 cm or 21.6 × 27.9 cm (8 × 10½ in or 8½ × 11 in) or ISO A4 (212 × 297 mm) with margins of at least 2.5 cm (1 in). Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Type the page number in the upper right-hand corner of each page.

Manuscripts will be reviewed for possible publication with the



ICMJE, 2018

About the Recommendations

Purpose of the Recommendations

Who Should Use the Recommendations?

History of the Recommendations

Roles & Responsibilities

Defining the Role of Authors and Contributors

Author Responsibilities—Conflicts of Interest

Responsibilities in the Submission and Peer-Review Process

Journal Owners and Editorial Freedom

Protection of Research Participants

Publishing & Editorial Issues

Corrections and Version Control

Scientific Misconduct, Expressions of Concern, and Retraction

Copyright

Overlapping Publications

Correspondence

Supplements, Theme Issues, and Special Series

Sponsorship or Partnership

Electronic Publishing

Advertising

Journals and the Media

Clinical Trial Registration

Manuscript Preparation

Preparing for Submission

Sending the Submission

Editorial standards

Responsibilities in the Submission and Peer-Review Process

3. Peer Reviewers

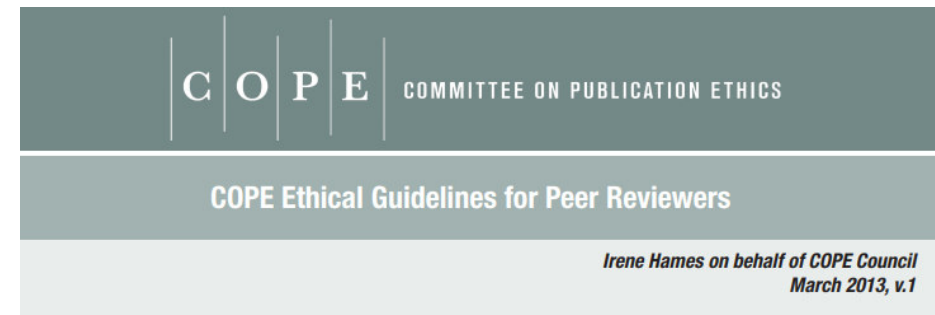
Manuscripts submitted to journals are privileged communications that are authors' private, confidential property, and authors may be harmed by premature disclosure of any or all of a manuscript's details.

Reviewers therefore should keep manuscripts and the information they contain strictly confidential. Reviewers must not publicly discuss authors' work and must not appropriate authors' ideas before the manuscript is published. Reviewers must not retain the manuscript for their personal use and should destroy copies of manuscripts after submitting their reviews.

Reviewers are expected to respond promptly to requests to review and to submit reviews within the time agreed. Reviewers' comments should be constructive, honest, and polite.

Reviewers should declare their conflicts of interest and recuse themselves from the peer-review process if a conflict exists.

Editorial standards

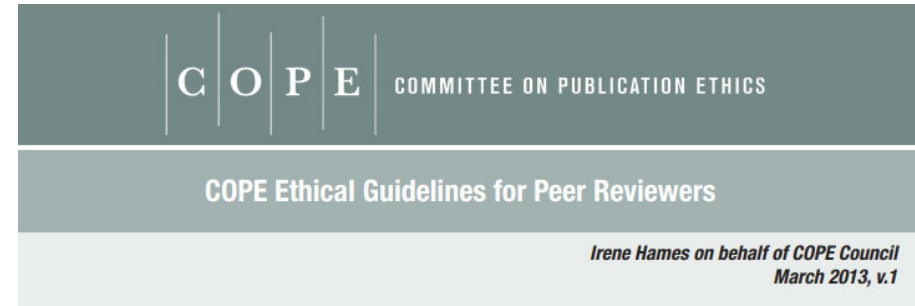


Basic principles to which peer reviewers should adhere

Peer reviewers should:

- only agree to review manuscripts for which they have the subject expertise required to carry out a proper assessment and which they can assess in a timely manner
- respect the confidentiality of peer review and not reveal any details of a manuscript or its review, during or after the peer-review process, beyond those that are released by the journal
- not use information obtained during the peer-review process for their own or any other person's or organization's advantage, or to disadvantage or discredit others
- declare all potential conflicting interests, seeking advice from the journal if they are unsure whether something constitutes a relevant interest
- not allow their reviews to be influenced by the origins of a manuscript, by the nationality, religious or political beliefs, gender or other characteristics of the authors, or by commercial considerations

Editorial standards



Basic principles to which peer reviewers should adhere

Peer reviewers should: ...

- be objective and constructive in their reviews, refraining from being hostile or inflammatory and from making libellous or derogatory personal comments
- acknowledge that peer review is largely a reciprocal endeavour and undertake to carry out their fair share of reviewing and in a timely manner
- provide journals with personal and professional information that is accurate and a true representation of their expertise
- recognize that impersonation of another individual during the review process is considered serious misconduct

<https://publicationethics.org/resources/guidelines-new/cope-ethical-guidelines-peer-reviewers>

Ideal reviewers?

- Work in the same field as the submitted manuscript
- But not in competition with the research groups submitting the manuscript
- Familiar with the methods used in research described in the submitted manuscript
- Able to assess the quality of data and methods
- Able to assess the validity of the conclusions
- Able to assess the significance of the work described in the manuscript
-

Deciding whether to review a manuscript

- Do I have appropriate expertise?
- Is the work too close to my own?
 - Conflict of interest precludes review
 - Appearance of misconduct, even if acted ethically
- Do I have any real or apparent conflict of interest?
 - Institutional
 - Collaborative
 - Other (family, friends, personal beliefs, „enemies“ ...)
- Do I have time to review the manuscript?

Deciding whether to review a manuscript

- When you agree to review a manuscript, you enter into a contract with the journal to become its consultant and to adhere to the journal's policies and guidelines for the review of manuscripts.
- If you have questions or doubts about your ability to review the manuscript, contact the editor and discuss the problem. It is better to prevent the problem than to solve it when it emerges later on.

Conflict of interest

Peer Reviewers

- Reviewers should be asked at the time they are asked to critique a manuscript if they have conflicts of interest that could complicate their review. Reviewers must disclose to editors any conflicts of interest that could bias their opinions of the manuscript, and should recuse themselves from reviewing specific manuscripts if the potential for bias exists. Reviewers must not use knowledge of the work they're reviewing before its publication to further their own interests.

Editors and Journal Staff


- Editors who make final decisions about manuscripts should recuse themselves from editorial decisions if they have conflicts of interest or relationships that pose potential conflicts related to articles under consideration. Other editorial staff members who participate in editorial decisions must provide editors with a current description of their financial interests or other conflicts (as they might relate to editorial judgments) and recuse themselves from any decisions in which a conflict of interest exists. Editorial staff must not use information gained through working with manuscripts for private gain. Editors should publish regular disclosure statements about potential conflicts of interests related to their own commitments and those of their journal staff. Guest editors should follow these same procedures.

Conflict of interest

- Direct resources
- Indirect resources
- Third-party
- Sources of revenue
- Research sponsor
- Relevant relationship
- Consultancy
- Board membership
- Expert testimony
- Stocks
- Royalties
- Speakers bureau



Conflicts of Interest

A screenshot of the ICMJE website showing the "Conflicts of Interest" section. It features a blue bookmark icon in the top right corner of the page header. The main heading is "ICMJE Form for Disclosure of Potential Conflicts of Interest". Below this, there is a text box with the instruction: "Use the ICMJE Form for Disclosure of Potential Conflicts of Interest to generate a disclosure statement for your manuscript." At the bottom, there are two buttons: "USING THE FORM" (with an information icon) and "DOWNLOAD" (with a download icon).

Conflict of interest



Conflict of interest (Col) policies of ICMJE journal members

Journal	Owner, country	Col policy for:		Editors' Col declaration	
		Authors	Reviewers	Policy	Individual declarations
Annals Internal Medicine	American College of Physicians, USA	Yes	Yes	No	No
BMJ	British Medical Association, UK	Yes	Yes	Yes	Yes
Bulletin of the WHO	World Health Organization, Switzerland	Yes	No	No	No
Deutsches Ärzteblatt	German Medical Association, Germany	Yes	No	No	No
Ethiopian Journal of Health Sciences	Jimma University, Ethiopia	No	No	No	No
Iranian Journal of Medical Sciences	Shiraz University of Medical Sciences, Iran	Yes	Yes	Yes	No
JAMA	American Medical Association, USA	Yes	No	Yes	No
Journal of Korean Medical Science	Korean Academy of Medical Sciences, Korean Medical Association, South Korea	Yes	No	No	No
Lancet	Elsevier, UK	Yes	No	No	No
New England Journal of Medicine	Massachusetts Medical Society, USA	Yes	Yes	Yes	No
New Zealand Medical Journal	New Zealand Medical Association, New Zealand	Yes	No	No	No
PLOS Medicine	Public Library of Science, USA	Yes	Yes	Yes	Yes
Revista Médica de Chile	Sociedad Médica de Santiago, Chile	Yes	No	No	No
Ugeskrift for Læger	Danish Medical Association, Denmark	Yes	No	No	No

Conflict of interest

Disclosures of editorial conflicts of interests (Col) in biomedical journals

Study (author, year)	Journals included	Finding
Cooper et al., 2006 (5)	91 high-impact general and specialty biomedical journals	40% of the journals stated that they had Col policies for editors
Bhargava et al., 2007 (6)	12 gastroenterology and hepatology journals	17% of the journals publicly disclosed editorial Col
Andraku et al., 2009 (7)	42 ophthalmology journals	5% of the journals publicly disclosed editorial Col
Alfonso et al., 2012 (8)	45 European Society of Cardiology National Cardiovascular Journals	18% of the journals had a specific policy on editors' Col
Qureshi et al., 2012 (9)	15 gastroenterology and hepatology journals	33% of the journals publicly disclosed Col policies for editors
Smith et al., 2012 (10)	10 high-impact medical journals	40% of the journals have easily accessible Col policies for editors
Bosch et al., 2013 (11)	399 high-impact biomedical journals	39% of the journals required editors' Col disclosures
Broga et al., 2014 (12)	68 biomedical journals from Southeast and Eastern Europe	3% of the journals had Col policies for editors
Liu et al., 2017 (13)	52 influential US medical journals from 25 specialties	33% of the journals had readily available editors' Col policies
Yang et al., 2017 (14)	30 Chinese-language and 37 English-language journals in China	No Chinese-language journals had Col policies for editors, 50% of editorials in English-language journals had Col disclosure

Conflict of interest

Disclosures of payment to editors in biomedical journals

Study (author, year)	Journals included	Finding
Liu et al., 2017 (13)	713 editors from 52 influential US medical journals from 25 specialties	51% of the editors received general and 19.5% research payments in 2014
Mehlman et al., 2017 (15)	15 orthopaedic surgery journals	4-73% of editorial board members received >US\$10,000 in 2014
Verma, 2017 (16)	85 editorial board members from 3 US radiation oncology journals	76% of the editorial board members received payment in 2013-2015
Wong et al., 2017 (17)	333 editorial board members from 35 highly cited medical journals from 7 specialities	64% editorial board members received any industry-associated payments in 2013-2016

Conflict of interest

Disclosures of Col of editors in biomedical journals

Journal reference	Statement if available as abstract in PubMed
[No authors listed]. Financial disclosure for associate editors of the Cleveland Clinic Journal of Medicine. Cleve Clin J Med. 2010;77: 347.	–
[No authors listed]. Headache associate editors declaration of conflicts of interest. Headache. 2014;54:4-6.	–
Lubowitz JH. Editorial commentary: Editor's conflict of interest. Arthroscopy. 2015;31:1740.	The Editor-in-chief has recused himself from industry consulting, which he performed before assuming the position, and returned related royalties and divested related stock options, in order to mitigate against conflict-of-interest. The Editor discloses affiliation with an institution that receives support from diverse industry partners in support of research and education.
[No authors listed]. Conflict of Interest Declarations by Contributing Editors of the Special Issue on Early-Career Systems Microbiology Scientists, Sponsored by Janssen Human Microbiome Institute (JHMI). mSystems. 2018 Mar 6;3(2). pii: e00010-18.	–
Rey C, on behalf of Anales de Pediatría editorial team. Conflicts of Interest of the editors. (article in Spanish). An Pediatr (Barc). 2018. pii: S1695-4033(18)30115-2.	–

When you receive the full manuscript

- Does seeing the full manuscript change your ability to review it?
 - Different from the abstract?
 - Conflict of interest?
- Confidential documents (contain unpublished data and ideas)
 - Manuscript and your review, too
- Cannot be shared with other people
 - Manuscript can be passed on for review, but with permission
- Kept in a secure place (paper or electronic)
- Cannot be used in own research or cited in own manuscripts before publication

When you receive the full manuscript

- You should not contact the author about the work in the manuscript under review
 - Ask the editor
- You cannot seek help with your review
- You are expected to advise the journal and not to help the author publish a paper
- It is unethical to allow a badly flawed manuscript to be published
 - Peer review is viewed as a scientific stamp of approval of the article and its contents
- You must be aware of biases in peer review

When you receive the full manuscript

- Biases in peer review
 - Bias towards positive results
 - Bias against new ideas (confirmatory bias)
 - Bias against novel methods
- Expertise or editing?
 - You should primarily review quality, importance and novelty of science in the manuscript, not typographical errors
- Expertise, but editing when
 - Sentences have wording that makes the science unclear
 - Errors in referencing
 - Manuscript needs major editorial assistance

When you receive the full manuscript

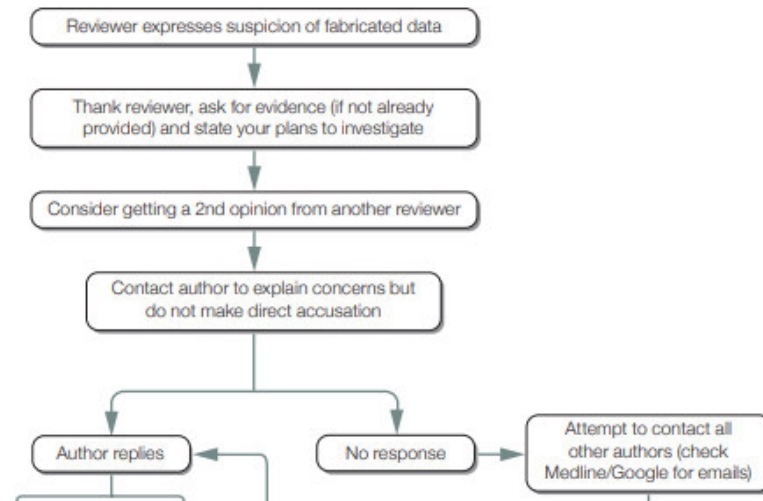
- Comment on ethics or integrity issues
 - Ethics approvals for research on humans
 - Ethics approvals for research on animals
 - Undisclosed conflict of interest from the authors
 - Failure to acknowledge evidence that contradict results or views in the manuscript
 - Duplicate publication
 - Plagiarism
 - Concerns about the integrity of data, analyses and conclusions
- Contact the editor if misconduct is suspected
 - Prepare documentation
 - Editors should follow established guidelines and procedures

COPE Ethics Flowcharts



What to do if you suspect fabricated data

(a) Suspected fabricated data in a submitted manuscript



Writing reviews

- Inadequate reviews
- Inconsistent reviews
- Biased reviews
- Unethical reviews
- Rude reviews

Dilemma cases

- Developed by the Faculty Development and Instructional Design Center, Northern Illinois University, USA
- Available at: https://ori.hhs.gov/education/products/niu_peerreview/

Dilemma case 1

- Dr. John Leonard is one of very few molecular biologists working in a particular field. Dr. Leonard receives a paper from a colleague, Dr. Mark Morris to Protein Interactions, a medium-impact journal, and the editor asked Dr. Leonard and two other experts in the field to review the paper. The article suggests a new interaction between survivin and the protein GFX and provides evidence for the fact that both proteins are necessary for the full survival-promoting function of survivin in a cell. The article also describes, though, that if there is too much survivin inside cells they die.

Q1. What types of conflict of interest might arise when someone is asked to review a paper or grant application?

Dilemma case 1

- But the paper is fraught with problems: data in figures, and alternative explanations are overstated. Dr. Leonard gives student Melissa Zane, who gives it a detailed critique and recommends significant revisions. Ms. Zane has never reviewed an article before, and Dr. Leonard thinks that doing so would be a good educational experience for her. Ms. Zane notes that the finding that too much survivin being toxic to cells, a problem with the protein, and discusses it with Dr. Leonard. They decide that they should lower the dosage of survivin in the experiment so that the cells actually survive for a week, longer than her previous results, then they die.

Q2. Is it ever appropriate for a peer reviewer to give a paper to a graduate student for review? If so, how should the reviewer do so?

Q3. Is it appropriate for a peer reviewer to use ideas from an article under review to stop unfruitful research in the reviewer's laboratory?

Dilemma case 1

- Dr. Leonard submits Ms. Zane's and his own comments about the research to the editor, suggesting that the paper be accepted only after a few more experiments are performed to validate some of the conclusions. One of the other reviewers has comments similar to Dr. Leonard's, and the editor asks Dr. Morris, the author, to make the revisions before he will accept the paper.
- But in the next few weeks the interaction between GF discussed in the paper remains in Dr. Leonard's mind. In an inquiry that Dr. Leonard and Ms. Zane were following were focusing on other stimulatory proteins, but unsu suggests to Ms. Zane that she add a compound to the stimulates the cell to produce its own GFX, a method from what was in the paper by Dr. Morris that is under review. The enhancement method works. The cells live for a month.

Q4. Is it ever appropriate for a reviewer to use ideas from a paper under review, even if the reviewer's method to achieve a result is different from that used in the paper under review? If so, how should the reviewer proceed?

Dilemma case 1

- Ms. Zane and Dr. Leonard draft a paper based on their work. The paper includes appropriate controls. Science, a prestigious journal, publishes the paper. Several months later, Protein Interactions publishes a revised paper from the laboratory of Dr. Morris. But after Dr. Morris sees the article in Science he suspects that Dr. Leonard, who was an anonymous peer reviewer on the paper, might have taken some of the ideas for the Science article from his paper under review. Dr. Morris knows that Dr. Leonard hadn't been working on GFX because it was his idea to start the project that he used material in the unpublished manuscript. Dr. Morris is now in a dilemma.

Q5. What are some of the challenges in the current peer-review process, in which the peer reviewer is anonymous but the author is known to the reviewer?

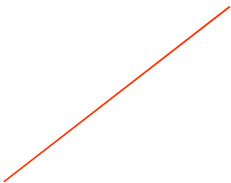
Q6. What recourse is there for Dr. Morris if he suspects that his ideas were plagiarized?

Dilemma case 2

- Dr. Marie Rolands is a tenured professor of psychology at a major university. She has published widely in her field of industrial psychology, teaches undergraduates and graduates, attends conferences, and runs several research projects. Recently, she has decided to pursue an area of research that challenges an established way in which certain worker-motivation studies are performed. The main proponents of the conventional paradigm are two investigators, Dr. Stephen Jones and Dr. Claude Marcus, who work at a prestigious university.

Dilemma case 2

- Dr. Rolands has performed experiments and collected evidence of what she perceives are the myriad flaws in the Jones-Marcus method. She wrote a paper that offered her research findings, analysis, and critiques, and she submitted it to the Journal of Industrial Psychology. The editor of the journal sent the paper to Drs. Jones and Marcus and two other investigators for peer review. Drs. Jones and Marcus both provided a lengthy response to Dr. Rolands' paper, challenging her disagreement with their method on several points. As a result, they both recommended that the editor reject the paper. The third and fourth reviewers were split as to whether it should be published.



Q1. How can someone whose research is being "attacked" provide an honest appraisal of the critique?

Dilemma case 2

- The editor rejected the paper but sent Dr. Rolands a copy of the reviewers' comments, which were signed openly and forthrightly by Drs. Jones and Marcus. Although peer review is often considered anonymous in psychology, some reviewers sign their names to reviews.

Dilemma case 2

- Dr. Rolands took issue with each of the points that Drs. Jones and Marcus made and performed a series of follow-up experiments to point out what she believed were the flaws in their arguments. A few months later, she drafted another paper, in which she mentioned the criticisms of Drs. Jones and Marcus as part of the publication. She was concerned about submitting the manuscript, because she was fearful that Drs. Jones and Marcus would suppress her findings again. She felt that she could not resubmit it to the first publication, because she knew that the editor was friendly with Drs. Jones and Marcus socially and also because she felt that the editor probably had a status-quo view of the

Q2. Could it be that Dr. Rolands' challenge of Drs. Jones and Marcus is personal and not professional?

Q3. Should Dr. Rolands point out to the editor of the first journal his potential conflict of interest?

Dilemma case 2

- She sent it to another journal, Applied Industrial Psychology. Knowing that Drs. Jones and Marcus might get upset if she used and cited their peer-review comments with their names as the foundation of a revised paper, she explained her actions and the history of the paper to the editor of Applied Industrial Psychology and sent a copy of the article to Drs. Jones and Marcus. Dr. Rolands asked the editor if it might be possible to send the paper to neutral parties so that she could get a more balanced review of her work. The editor, however, said that he felt he would have to send it to Drs. Jones and Marcus, because they were the best people to understand the inner workings of the mode again.

Q4. What recourse does Dr. Rolands have now that her paper has been rejected two times?

Evidence about peer review

Which are the best reviewers?

J Gen Intern Med. 1993 Aug;8(8):422-8.

The characteristics of peer reviewers who produce good-quality reviews.

Evans AT, McNutt RA, Fletcher SW, Fletcher RH.

CONCLUSIONS: Good peer reviewers for this journal tended to be young, from strong academic institutions, well known to the editors, and blinded to the identity of the manuscript's authors.

JAMA. 1998 Jul 15;280(3):231-3.

What makes a good reviewer and a good review for a general medical journal?

Black N, van Rooyen S, Godlee F, Smith R, Evans S.

CONCLUSIONS: The characteristics of reviewers we studied did not identify those who performed high-quality reviews. Reviewers might be advised that spending longer than 3 hours on a review on average did not appear to increase review quality as rated by editors and authors.

Evidence about peer review

Peer reviewers suggested by the authors?

[JAMA](#). 2006 Jan 18;295(3):314-7.

Differences in review quality and recommendations for publication between peer reviewers suggested by authors or by editors.

[Schroter S, Tite L, Hutchings A, Black N.](#)

[BMC Med](#). 2006 May 30;4:13.

Are reviewers suggested by authors as good as those chosen by editors? Results of a rater-blinded, retrospective study.

[Wager E, Parkin EC, Tamber PS.](#)

No differences in the quality of reviews, author-suggested reviewers significantly more often give positive recommendations for the manuscript.

Evidence about peer review

Behavior of peer reviewers?

[J Psychosom Res.](#) 2015 Jan;78(1):1-6. doi: 10.1016/j.jpsychores.2014.09.015. Epub 2014 Oct 2.

Potentially coercive self-citation by peer reviewers: a cross-sectional study.

[Thombs BD](#), [Levis AW](#), [Razykov I](#), [Syamchandra A](#), [Leentjens AF](#), [Levenson JL](#), [Lumley MA](#).

CONCLUSIONS:

Self-citation in peer reviews is common and may reflect a combination of appropriate citation to research that should be cited in published articles and inappropriate citation intended to highlight the work of the peer reviewer. Providing instructions to peer reviewers about self-citation and asking them to indicate when and why they have self-cited may help to limit self-citation to appropriate, constructive recommendations.

Evidence about peer review

Open vs closed peer review?

[BMJ](#). 2010 Nov 16;341:c5729. doi: 10.1136/bmj.c5729.

Effect on peer review of telling reviewers that their signed reviews might be posted on the web: randomised controlled trial.

[van Rooyen S](#), [Delamothe T](#), [Evans SJ](#).

CONCLUSIONS:

Telling peer reviewers that their signed reviews might be available in the public domain on the BMJ's website had no important effect on review quality. Although the possibility of posting reviews online was associated with a high refusal rate among potential peer reviewers and an increase in the amount of time taken to write a review, we believe that the ethical arguments in favour of open peer review more than outweigh these disadvantages.

Evidence about peer review

Open vs closed peer review?

Dan Med J. 2012 Aug;59(8):A4479.

Same review quality in open versus blinded peer review in "Ugeskrift for Læger".

Vinther S, Nielsen OH, Rosenberg J, Keiding N, Schroeder TV.

CONCLUSIONS:

Implementing open peer review will not affect review quality, but lack of anonymity may cause reviewers, already limited in number, to decline when asked to review. Even though this would be a serious implication for a national journal like the Ugeskrift for Læger, the implementation of an open system should be discussed.

Evidence about peer review

Open vs closed peer review?

BMJ. 1996 Nov 9;313(7066):1185.

Do authors know who refereed their paper? A questionnaire survey.

Wessely S, Brugha T, Cowen P, Smith L, Paykel E.

CONCLUSIONS:

Anyone who has ever submitted a scientific paper will no doubt be familiar with the elaborate process of intuition and detection that goes into attempting to deduce the identity of the anonymous referee who has praised or damned the paper. This study suggests that even for a specialty journal such efforts are largely unrewarding and that most referees remain anonymous.

Evidence about peer review

Open vs closed peer review?

[JAMA](#). 1998 Jul 15;280(3):243-5.

Masking author identity in peer review: what factors influence masking success? PEER Investigators.

[Cho MK](#), [Justice AC](#), [Winker MA](#), [Berlin JA](#), [Waeckerle JF](#), [Callaham ML](#), [Rennie D](#).

CONCLUSIONS:

Masking success appears unrelated to a journal policy of masking, but is associated with reviewers' research experience and could be affected by other characteristics. Using reviewers with less research and reviewing experience might increase masking success, but the effect on review quality is unknown.

Evidence about peer review

Open vs closed peer review?

[PLoS One](#). 2011;6(11):e26895. doi: 10.1371/journal.pone.0026895. Epub 2011 Nov 9.

Cooperation between referees and authors increases peer review accuracy.

[Leek JT](#), [Taub MA](#), [Pineda FJ](#).

CONCLUSIONS:

We show that when reviewer behavior was made public under open review, reviewers were rewarded for refereeing and formed significantly more cooperative interactions (13% increase in cooperation, $P = 0.018$). We also show that referees and authors who participated in cooperative interactions had an 11% higher reviewing accuracy rate ($P = 0.016$). Our results suggest that increasing cooperation in the peer review process can lead to a decreased risk of reviewing errors.

Evidence about peer review

Open vs closed peer review?

[BMJ Open](#). 2015 Sep 29;5(9):e008707.

Retrospective analysis of the quality of reports by author-suggested and non-author-suggested reviewers in journals operating on open or single-blind peer review models.

[Kowalczyk MK](#), [Dudbridge F](#), [Nanda S](#), [Harriman SL](#), [Patel J](#), [Moylan EC](#).

CONCLUSIONS:

Reviewers suggested by authors provide reports of comparable quality to non-author-suggested reviewers, but are significantly more likely to recommend acceptance. Open peer review reports for BMC Infectious Diseases were of higher quality than single-blind reports for BMC Microbiology. There was no difference in quality of peer review in the Journal of Inflammation under open peer review compared with single blind.

Evidence about peer review

Training for peer review?

[J R Soc Med](#). 2008 Oct;101(10):507-14. doi: 10.1258/jrsm.2008.080062.

What errors do peer reviewers detect, and does training improve their ability to detect them?

[Schroter S](#), [Black N](#), [Evans S](#), [Godlee F](#), [Osorio L](#), [Smith R](#).

CONCLUSIONS:

Editors should not assume that reviewers will detect most major errors, particularly those concerned with the context of study. Short training packages have only a slight impact on improving error detection.

Evidence about peer review

Training for peer review?

Ann Emerg Med. 2002 Sep;40(3):323-8.

Effect of structured workshop training on subsequent performance of journal peer reviewers.

Callaham ML, Schrager DL.

CONCLUSIONS:

Among invited peer reviewers, voluntary attendance at a highly structured and interactive workshop was low and did not improve the quality of subsequent reviews, contrary to the predictions of attendees. Efforts to aggressively recruit average reviewers to a second workshop were time consuming, had low success rates, and showed a similar lack of effect on ratings, despite improvement in scores on a test instrument. Workshop teaching formats, although traditional, are of unproven efficacy.

Evidence about peer review

Training for peer review?

PLoS Med. 2007 Jan;4(1):e40.

The relationship of previous training and experience of journal peer reviewers to subsequent review quality.

Callaham ML, Tercier J.

CONCLUSIONS:

Our study confirms that there are no easily identifiable types of formal training or experience that predict reviewer performance. Skill in scientific peer review may be as ill defined and hard to impart as is "common sense." Without a better understanding of those skills, it seems unlikely journals and editors will be successful in systematically improving their selection of reviewers. This inability to predict performance makes it imperative that all but the smallest journals implement routine review ratings systems to routinely monitor the quality of their reviews (and thus the quality of the science they publish).

Evidence about peer review

Training for peer review?

[BMC Med Educ](#). 2012 Aug 28;12(1):83. [Epub ahead of print]

Does mentoring new peer reviewers improve review quality? A randomized trial.

[Callaham M](#), [Green S](#), [Houry D](#).

CONCLUSIONS:

A structured training intervention of pairing newly recruited medical journal peer reviewers with senior reviewer mentors did not improve the quality of their subsequent reviews.

Evidence about peer review

Training for peer review?

[J Clin Epidemiol](#). 2012 Mar;65(3):247-52. Epub 2011 Nov 8.

Medical journal editors lacked familiarity with scientific publication issues despite training and regular exposure.

[Wong VS](#), [Callahan ML](#).

CONCLUSIONS:

Our study presents a current look at editors of major clinical medical journals. Most editors reported training in medical editing topics, saw ethical issues regularly, and were aware of scientific publication organizations, but their knowledge of four common and well-disseminated publication ethics topics appears poor.

Evidence about peer review

Training for peer review?

[BMJ](#). 2004 Mar 20;328(7441):673. Epub 2004 Mar 2.

Effects of training on quality of peer review: randomised controlled trial.

[Schroter S](#), [Black N](#), [Evans S](#), [Carpenter J](#), [Godlee F](#), [Smith R](#).

CONCLUSIONS:

Short training packages have only a slight impact on the quality of peer review. The value of longer interventions needs to be assessed.

Evidence about peer review

Training for peer review?

[Ann Emerg Med](#). 2011 Feb;57(2):141-8. Epub 2010 Nov 12.

Longitudinal trends in the performance of scientific peer reviewers.

[Callaham M](#), [McCulloch C](#).

CONCLUSIONS:

This study, one of few tracking expert performance longitudinally, demonstrates that most journal peer reviewers received lower quality scores for article assessment over the years. This could be due to deteriorating performance (caused by either cognitive changes or competing priorities) or, to a partial degree, escalating expectations; other explanations were ruled out. This makes monitoring reviewer quality even more crucial to maintain the mission of scientific journals.

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