



C O P E

# FUNDAMENTAL PRINCIPLES OF PEER REVIEW & PEER REVIEW ETHICS

1<sup>st</sup> J-STAGE Seminar  
Japan Science and Technology Agency  
28 July 2021

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Education Consultant, AsiaEdit

[publicationethics.org](http://publicationethics.org)



## FUNDAMENTAL PRINCIPLES OF PEER REVIEW & PEER REVIEW ETHICS

### Agenda

- Introduction to peer review & COPE (Committee on Publication Ethics)
- Aims & models of peer review
- Ethics of peer review

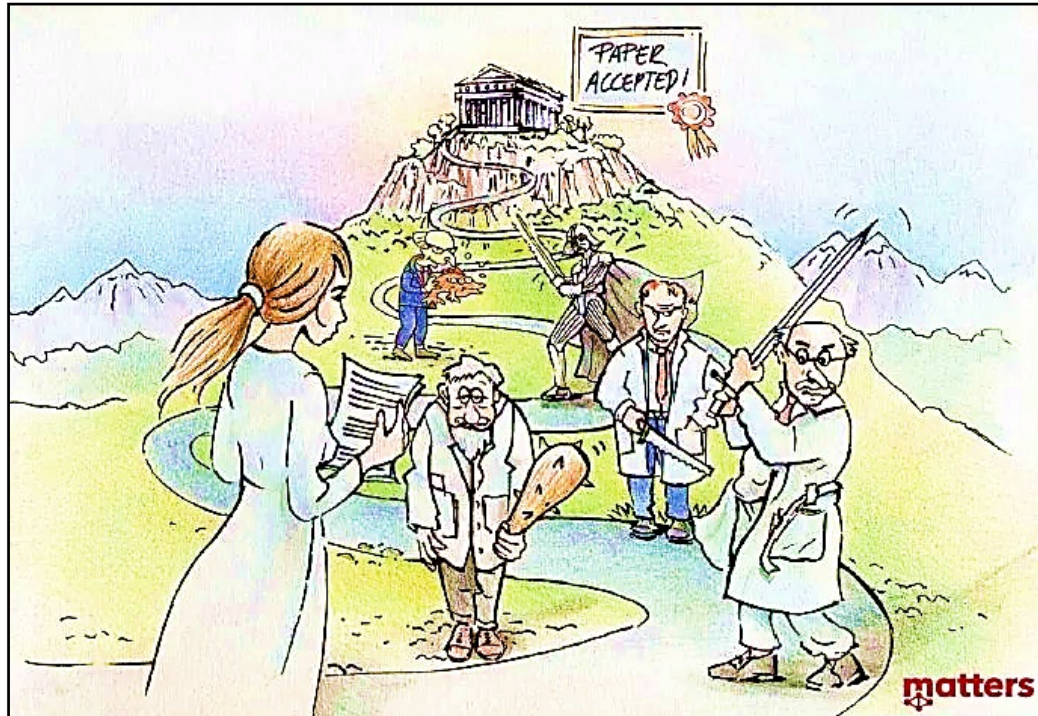


## FUNDAMENTAL PRINCIPLES OF PEER REVIEW & PEER REVIEW ETHICS

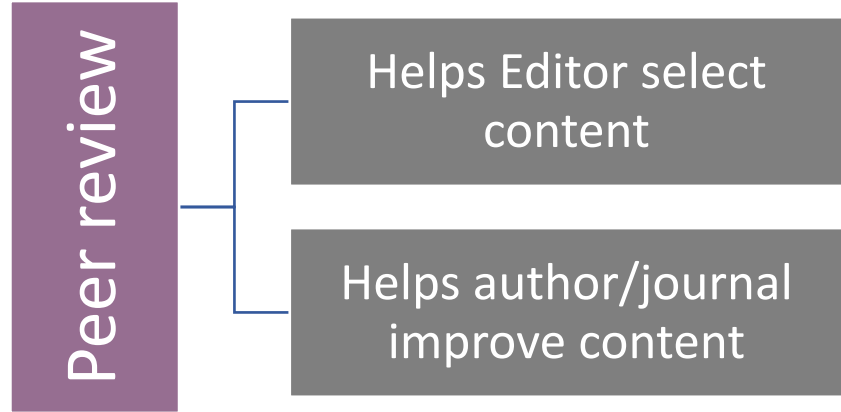
### Agenda

- **Introduction to peer review & COPE**
- Aims & models of peer review
- Ethics of peer review

## PEER REVIEW



*Most scientists regard the new streamlined peer review process as “quite an improvement”*



## PEER REVIEW

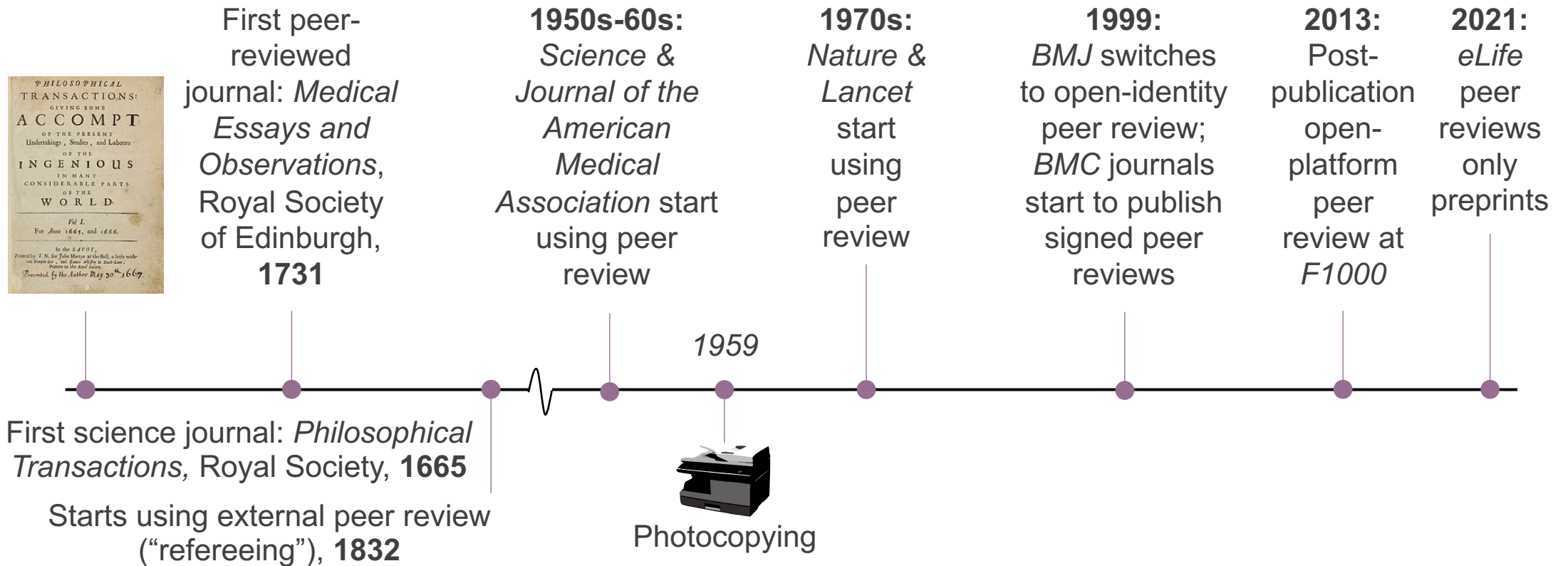
“ A process where peer experts in a particular field of knowledge creation—from scientific research to creative arts production—are invited and accept to review, and provide learned and **critical evaluation of the scholarly merit** of the researchers’ or creators’ intellectual product. ”

Deborah Poff, Past Chair, Committee on Publication Ethics, China COPE Seminar 2017, Beijing, China; 26 March 2017

“ Peer review is the critical assessment of manuscripts submitted to journals by experts who are usually not part of the editorial staff. Because **unbiased, independent, critical assessment** is an intrinsic part of all scholarly work, including scientific research, peer review is an important extension of the scientific process. ”

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/responsibilities-in-the-submission-and-peer-review-process.html#two>

## PEER REVIEW LANDMARKS



## PEER-REVIEWED SCHOLARLY JOURNALS

### Gatekeeping & curation

- Defines aims & scope, acceptance criteria

### Registration

- Formal record, correction/retraction, indexing

### Certification (peer review)

- Quality control

### Production

- Layout, (editing,) coding, print/online formats

### Dissemination

- Access, distribution, marketing

### Archiving

- Persistent identifiers, backup system

### Knowledge & capacity building

- Metadata/data sharing, education, resources

### Community building

- News, editorials, user commenting, blogs, events

## TRUSTED JOURNALS



<https://thinkchecksubmit.org/>







PROMOTING INTEGRITY IN SCHOLARLY RESEARCH AND ITS PUBLICATION

## PRINCIPLES OF TRANSPARENCY AND BEST PRACTICE IN SCHOLARLY PUBLISHING



Website



Name of journal







Peer review process




Ownership and management



WEBSITE	NAME OF JOURNAL	PEER REVIEW PROCESS	OWNERSHIP AND MANAGEMENT
 <p>A Journal's website, including the text that it contains, shall demonstrate that care has been taken to ensure high ethical and professional standards.</p> <p>It should:</p> <ul style="list-style-type: none"> <li>- contain an 'Aims &amp; Scope' statement and the readership clearly defined.</li> <li>- include a statement on what a journal will consider for publication including authorship criteria e.g. not multiple submissions, redundant publications)</li> <li>- ISSNs displayed clearly (separate for print and electronic).</li> </ul> <p>It must not:</p> <ul style="list-style-type: none"> <li>- contain information that might mislead readers or authors.</li> <li>- attempt to mimic another journal/publisher's site.</li> </ul>	 <p>The Journal name shall be unique. It must not:</p> <ul style="list-style-type: none"> <li>- be one that is easily confused with another journal.</li> <li>- mislead potential authors and readers about the Journal's origin or association with other journals.</li> </ul>	 <p>Journal content must be clearly marked as whether peer reviewed or not. Peer review is defined as obtaining advice on individual manuscripts from reviewers expert in the field who are not part of the journal's editorial staff.</p> <p>The journal's website should:</p> <ul style="list-style-type: none"> <li>- clearly describe this process, as well as any policies related to the journal's peer review procedures including the method of peer review used.</li> </ul> <p>The journal's website should not:</p> <ul style="list-style-type: none"> <li>- guarantee manuscript acceptance or very short peer review times.</li> </ul>	 <p>Information about the ownership and/or management of a journal shall be clearly indicated on the journal's website.</p> <p>Publishers should not:</p> <ul style="list-style-type: none"> <li>- use organizational or journal names that would mislead potential authors and editors about the nature of the journal's owner.</li> </ul>

## PEER REVIEW PROCESS



**Journal content must be clearly marked as whether peer reviewed or not. Peer review is defined as obtaining advice on individual manuscripts from reviewers expert in the field who are not part of the journal's editorial staff.**

**The journal's website should:**

- clearly describe this process, as well as any policies related to the journal's peer review procedures including the method of peer review used.

**The journal's website should not:**

- guarantee manuscript acceptance or very short peer review times.



PROMOTING INTEGRITY IN SCHOLARLY RESEARCH AND ITS PUBLICATION

## PRINCIPLES OF TRANSPARENCY AND BEST PRACTICE IN SCHOLARLY PUBLISHING



Governing body



Editorial team/  
contact information



Copyright and  
licensing



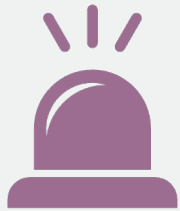
Author fees





PROMOTING INTEGRITY IN SCHOLARLY RESEARCH AND ITS PUBLICATION

## PRINCIPLES OF TRANSPARENCY AND BEST PRACTICE IN SCHOLARLY PUBLISHING



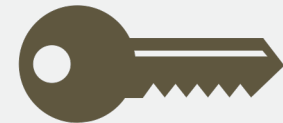
Allegations of research misconduct



Publication ethics



Publishing schedule



Access



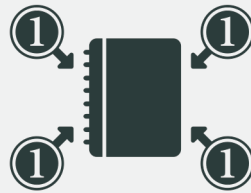


PROMOTING INTEGRITY IN SCHOLARLY RESEARCH AND ITS PUBLICATION

## PRINCIPLES OF TRANSPARENCY AND BEST PRACTICE IN SCHOLARLY PUBLISHING



Archiving



Revenue sources



Advertising



Direct marketing



The screenshot shows the top navigation bar of the COPE website. On the left is the COPE logo. In the center are three menu items: 'Guidance', 'Member resources', and 'About COPE', each with a downward arrow. On the right is a 'Sign in' button with a user icon and a search bar with the placeholder text 'Search our website' and a magnifying glass icon.

The main content area features a large heading: **Promoting integrity in scholarly research and its publication**. Below the heading is a short paragraph: 'COPE provides leadership in thinking on publication ethics and practical resources to educate and support members, and offers a professional voice in current debates.' At the bottom of this section is a purple button labeled 'Read more'.

## ABOUT COPE



- Provides **support, leadership**, and a **professional voice** to help preserve and promote the integrity of the scholarly record through policies and practices that reflect current **best principles of transparency and integrity**



- Is an international membership organisation. Our **>12,000 members** are primarily editors and owners/publishers of scholarly journals of all disciplines. We are exploring **expanding membership**, eg research institutions



- Operates, manages, and governs the non-profit organisation with a small group of paid employees and a **group of volunteers** who serve on the Trustee Board and Council



Marie Soulière



Natalie Ridgeway



Jigisha Patel



Ana Marušić



Frits Rosendaal



Heather Tierney



Iratxe Puebla



Gavin Swanson



Tara Hoke



Deborah Poff



Dan Kulp



Michael Wise



Nancy Chescheir



Sabah Moran



Sarah Gillmore



Howard Browman



Deborah Kahn



Timothy Devinney



Eleanor Gendle



Suzanne Farley



Trevor Lane



Caroline Porter



Matt Hodgkinson



Simon Linacre



Christina McGuire



Bonnie Jacobs



Laura Wilson



David Summers



Rachel Safer



Linda Gough



Duncan Nicholas



Cynthia Clerk



COPE



COPE MEMBERS

#COPEMembers

JOIN US

JOIN US AT OUR NEXT COPE FORUM  
to discuss publication ethics  
cases sent in by members

[publicationethics.org](http://publicationethics.org)



## COPE RESOURCES

### Examples of resources

From our Core practices and our guidelines to useful sample letters and flowcharts, **COPE** offers a range of useful tools for journal editors and publishers.



## COPE CORE PRACTICES

Policies and practices required to reach the highest standards in publication ethics:



**Allegations of misconduct**



**Authorship and contributorship**



**Complaints and appeals**



**Conflicts of interest/Competing interests**



**Data and reproducibility**



**Ethical oversight**



**Intellectual property**



**Journal management**



**Peer review processes**



**Post-publication discussions and corrections**

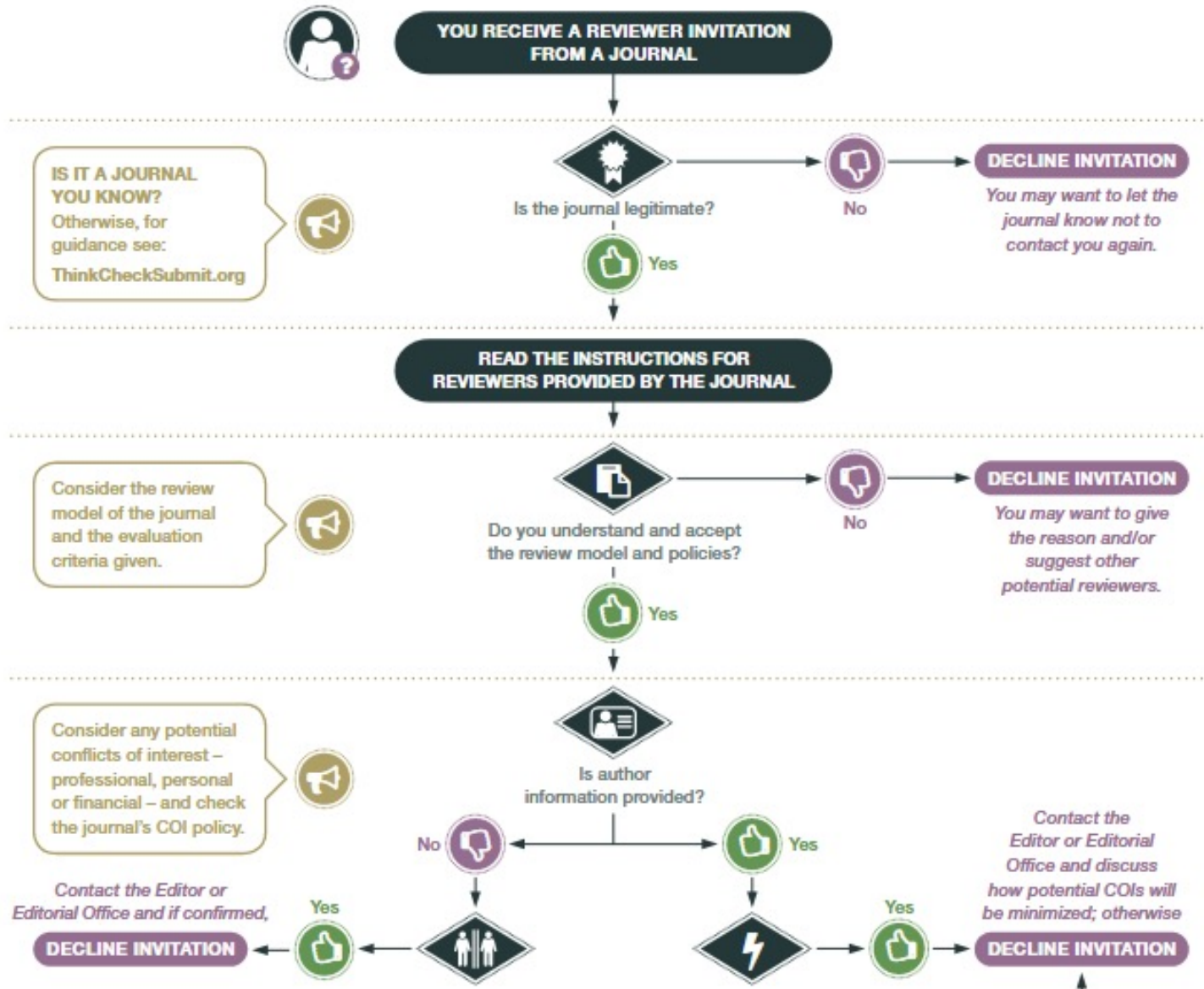
## COPE CORE PRACTICE

### Peer review processes

“ All peer review processes **must be transparently described and well managed**. Journals should provide **training** for editors and reviewers and have **policies** on diverse aspects of peer review, especially with respect to adoption of appropriate models of review and **processes** for handling conflicts of interest, appeals and disputes that may arise in peer review ”



WHAT TO CONSIDER WHEN ASKED TO PEER REVIEW A MANUSCRIPT



Peer reviewers may be suggested by:

- the Editor handling the manuscript.
- authors on submission of their manuscript to a journal.
- another reviewer who is unable to peer review the manuscript.

While there is an expectation that everyone involved in the process acts with integrity<sup>(Ref 1)</sup>, the peer review process can be susceptible to manipulation<sup>(Ref 2-4)</sup> as discussed at COPE's 2016 North American Seminar.<sup>(Ref 5)</sup>

The features or patterns of activity shown opposite are suggested to help Editors recognise potential signs of peer review manipulation. Often it is the occurrence of these features in combination that may indicate a potential issue, and they may only become apparent at later stages in the peer review or publishing process.

### Relevant COPE Cases:

Case 11-27: Author Creates Bogus Email Accounts for Proposed Reviewers  
<http://bit.ly/2eTOMVn>

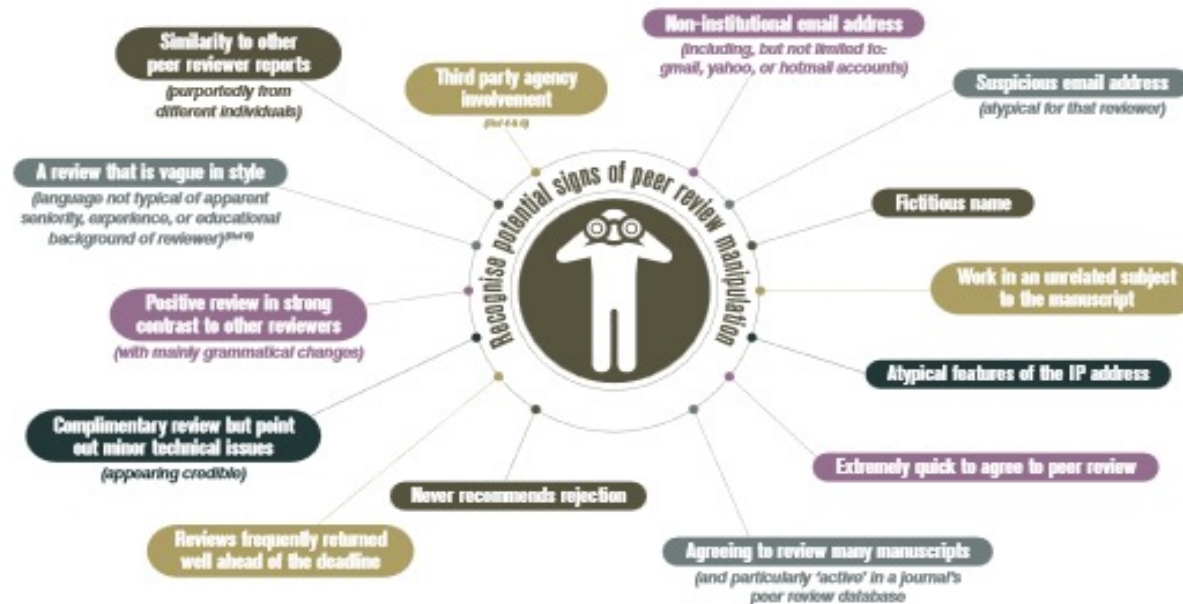
Case 12-12: Compromised Peer Review in Published Papers  
<http://bit.ly/2wVLdKU>

Case 12-16: Compromised Peer Review (Unpublished)  
<http://bit.ly/2y204ev>

### References:

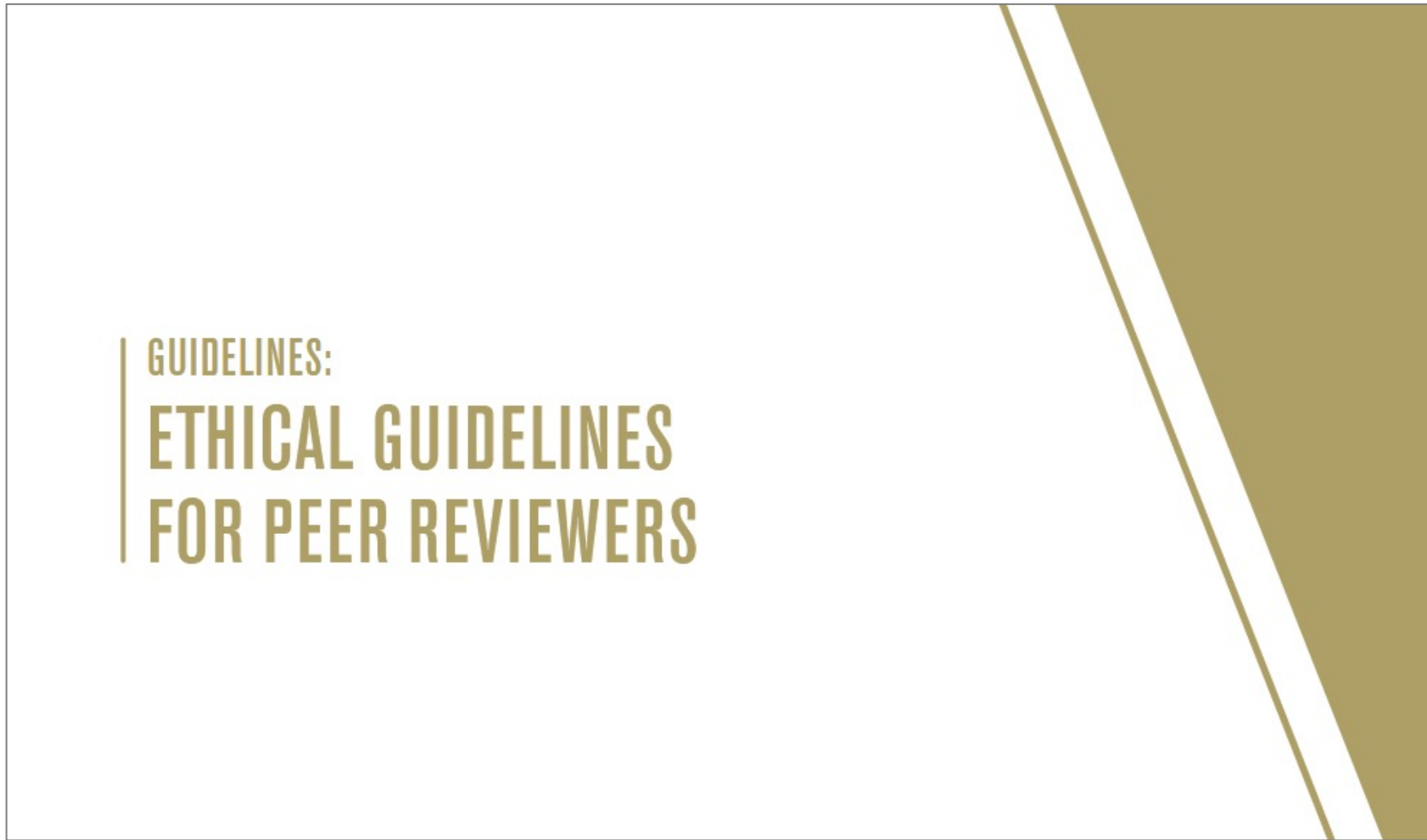
1. COPE Ethical Guidelines to Peer Review.  
<http://bit.ly/2zCzZrk>
2. COPE Statement on Inappropriate Manipulation of Peer Review Processes.  
<http://bit.ly/2G2NRMw>
3. Who Reviews the Reviewers? Jigisha Patel  
<http://bit.ly/1AgfKDC>
4. Inappropriate Manipulation of Peer Review. Elizabeth Moylan  
<http://bit.ly/2w64bTN>
5. Can You Spot a Fake? The Trend of Fake Peer Reviews. Alison McCook  
 Who Reviews the Reviewers?  
 Kristen Overstreet  
 Peer Review Manipulation. New Challenges and New Solutions.  
 Jigisha Patel  
<http://bit.ly/2vsj2oY>
6. Organised Crime Against the Academic Peer Review System.  
 Adam Cohen et al  
<http://bit.ly/1UmH7Y>

## Recognised Features or Patterns of Reviewer Activity



## Best Practice to Minimise Peer Review Manipulation







## COPE Discussion document: Who “owns” peer reviews?

*COPE Council*

### Summary

This document aims to stimulate discussion about ownership rights in peer reviewer reports. Here we set out some of the issues that have arisen in previous discussions around peer review, some of which are specific to various models of peer review. We hope that the concepts discussed assist journal editors and publishers in establishing guidelines and clear policies for handling issues surrounding who owns peer reviews. COPE welcomes additional comments from journal editors, reviewers, researchers, institutions, funders and third party services on this subject.

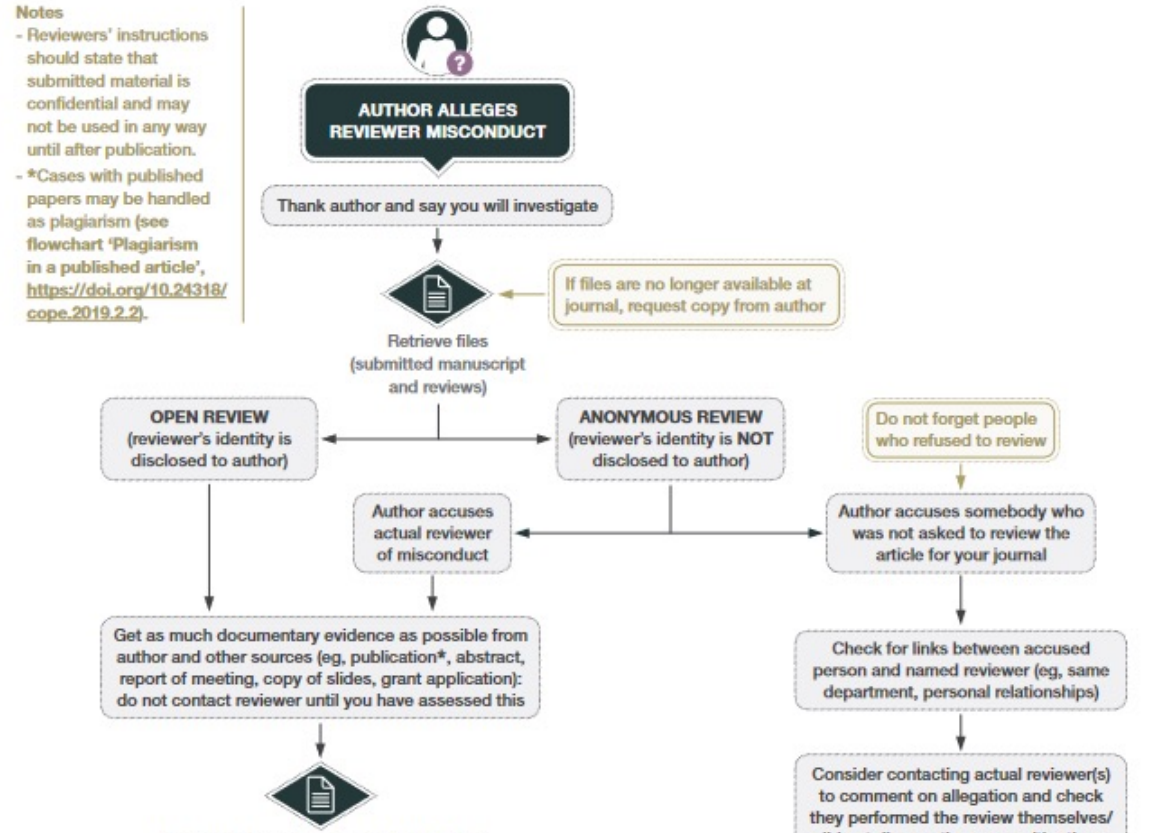
### Reference

Cite this as: COPE Council. COPE Discussion document: Who “owns” peer reviews. September 2017. [www.publicationethics.org](http://www.publicationethics.org)



REVIEWER SUSPECTED TO HAVE APPROPRIATED AN AUTHOR'S IDEAS OR DATA

- Notes**
- Reviewers' instructions should state that submitted material is confidential and may not be used in any way until after publication.
  - \*Cases with published papers may be handled as plagiarism (see flowchart 'Plagiarism in a published article', <https://doi.org/10.24316/cope.2019.2.2>).





## FUNDAMENTAL PRINCIPLES OF PEER REVIEW & PEER REVIEW ETHICS

### Agenda



- Introduction to peer review & COPE
- **Aims & models of peer review**
- Ethics of peer review


## PRE-PUBLICATION PEER REVIEW

 Editor (or Office) 

Desk review checks:

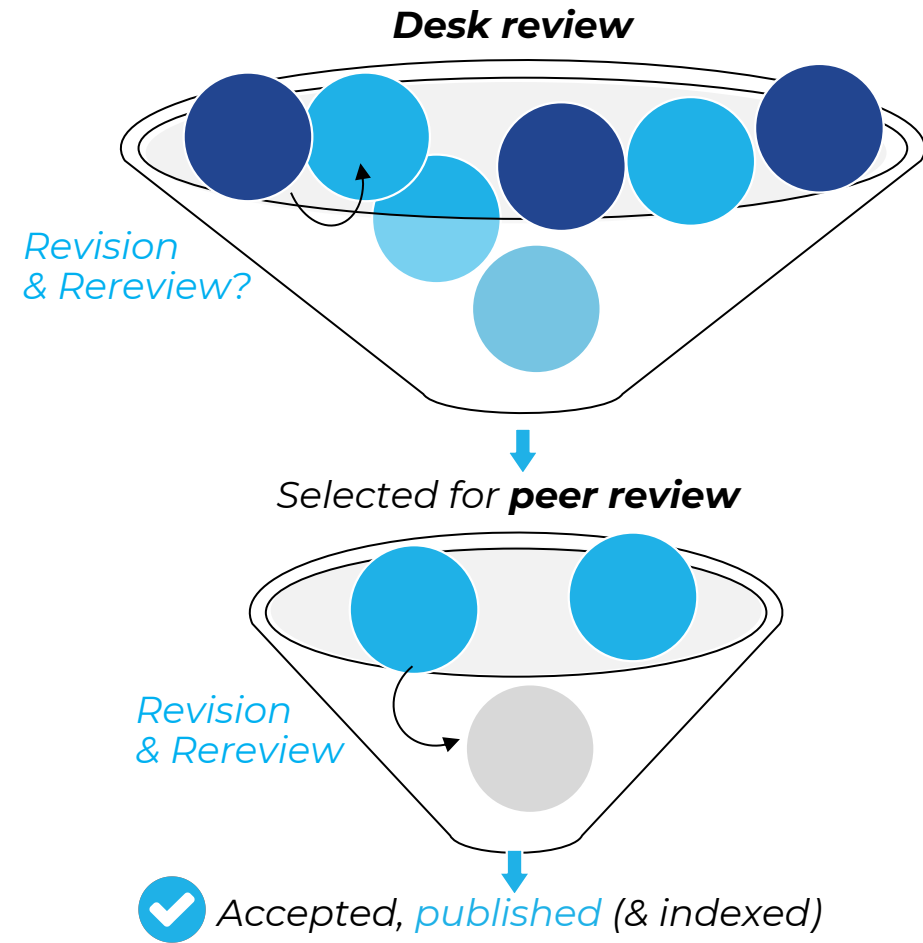
- *Completeness, adherence to guidelines, writing quality*
- **Topic / article / study type, quality, bias, ethics**
- **Data quality & availability, [+ study novelty/impact]**

 Editor 

 2-3 Reviewers  
Single / Double / Triple anonymised, or "Open identity" peer review

Peer review criteria:

- *Interest, coverage of literature, analysis / interpretation*
- *Writing style, organization*
- **Method quality, originality, contribution to field**



## TYPICAL EDITORIAL DECISIONS



### Accept

- Accept as is (unconditional acceptance)
- Accept conditional on (minor) revision



### Revise

- Resubmit for review after minor revision
- Resubmit for review after major revision

### Reject

- Reject; invitation of resubmission ("soft")
- Reject; no resubmission ("hard")



# POST-PUBLICATION PEER REVIEW


 Office 

**Desk review checks:**

- *Intelligible & in good English*
- **Appropriate (including content, quality, tone, format)**

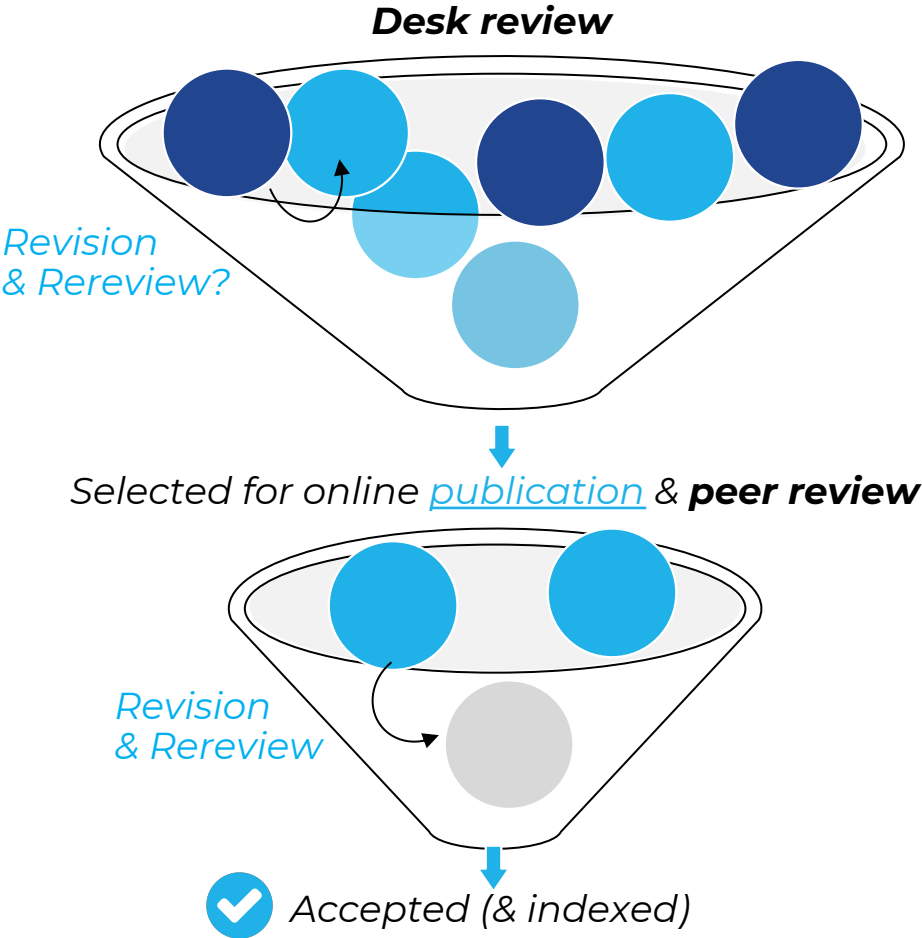
<https://blog.f1000.com/author-guidelines/>

 Editor 

 > 2 Reviewers nominated by authors (need approval from 2)

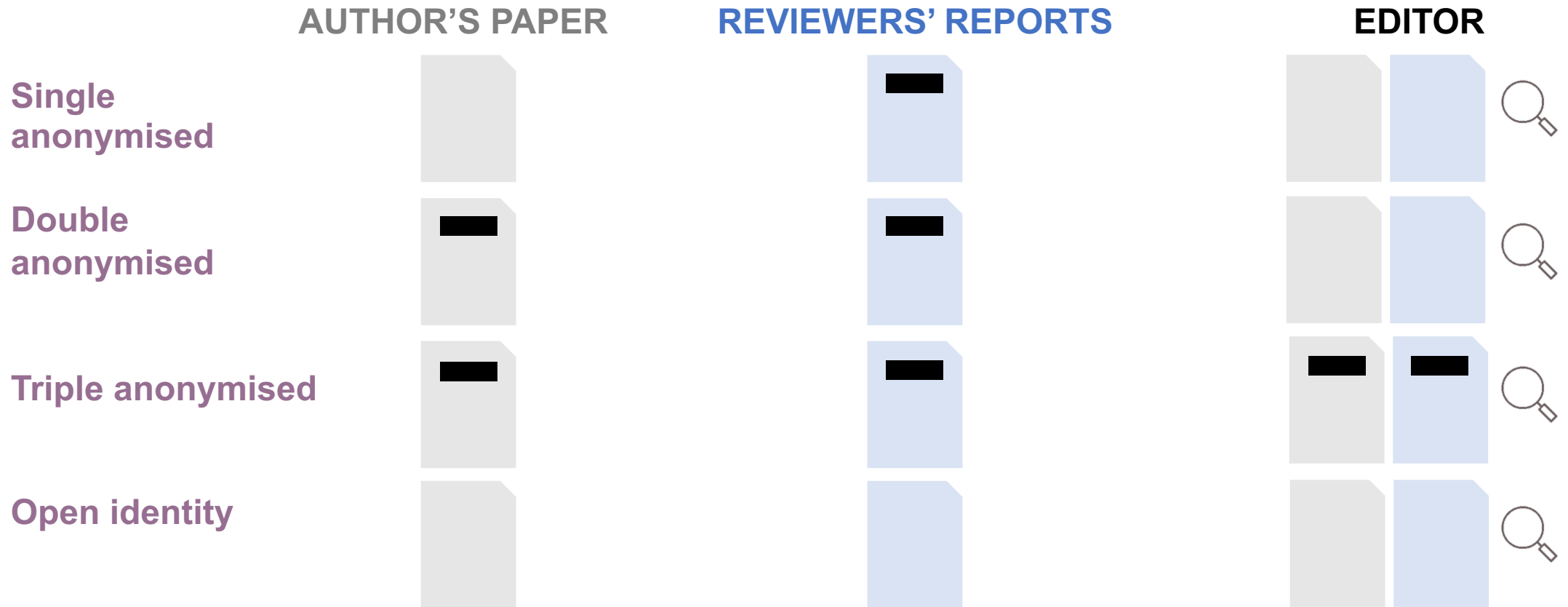
**Transparent peer review:**

- *Open identity*
- *Open, signed reviews*
- *Uses public platform*



Adapted with permission, CC BY-NC-ND, www.asiaedit.com

## PEER REVIEW MODELS



## PEER REVIEW VARIATIONS

### Author/reviewer choices

- Author picks model; reviewer can reveal name

### Opened/semi-open review

- Reviewers' names revealed later & published

### Open reports (transparent review)

- Reviews published +/- names; +/- revisions (*DOIs*)

### Interactive/collaborative review

- Allowed interaction between parties (eg, cross-reviewing by reviewers; open interaction among parties directly)

### Author recommendations

- Author can recommend/exclude reviewers

### Portable (pre-submission) review

- Third-party peer reviews commissioned

### Cascading/transferable review

- Rejected paper + reviews forwarded

### Post-publication commenting

- Online public commenting on articles

## PEER REVIEW INNOVATIONS

### Registered reports

- Protocol peer reviewed before results obtained

### Results-free review

- Results & discussion 1<sup>st</sup> withheld from reviewers

### Re-review opt out

- Author chooses if revision goes only to editor

### Assisted review

- Automated checks assist editor

### Patient review

- Patients collaborate with editors & reviewers

### Fast-track review

- Priority given to papers on urgent topics

### Expedited review

- Rejected papers bypass full review at next journal

### Overlay review

- Preprints reviewed +/- formally published



## PEER REVIEWERS

- **Characteristics:**
  - 2-3 experts in field
  - Know current literature & journal guidelines
  - Willing and available; can keep to deadline
  - Can perform impartial, professional review
  - Declare any conflicts of interest; decline review if needed
- **Examples:**
  - **Qualifications**
    - Typically hold a doctorate
    - Supervisor could arrange to be co-reviewer
  - **Expertise**
    - Published at least 3 articles as lead author in a relevant topic
    - At least 1 article in the past 5 years
  - **Impartial**
    - Not close collaborator or be personally associated with author
    - (not co-authored 3 years before Version 1; not co-authored after Version 1; not same institution)
  - **Global**
    - Reviewers from different countries

## TYPICAL REVIEWER CHECKLIST

1. Does article content/style fit journal's mission & readership? [+ Is the study novel/important enough?]
2. - Are Q & aim clear, timely, relevant, interesting?  
- Are references accurate & recent primary sources?  
- Is there enough theoretical grounding?  
- Are methods/analyses appropriate & reproducible?
3. - Are findings/illustrations presented well & discussed in context, with limitations/implications?  
- Are conclusions supported?
4. Is study complete (not salami; no selective/misleading reporting; follows EQUATOR Network guidelines)?
5. List strengths & weaknesses. Recommend improvements (for errors, flaws, arguments, title/abstract, style).
6. *Confidential notes to Editor:*  
- Any parts not reviewed / need other/statistics review?  
- Any plagiarism, potential legal/ethics problems (inc. fraud, multiple submission, multiple publication, citation bias, no trial registration, © problems)?  
[Recommendation: accept/revise/reject?]

## CRITICISMS

Slow, inefficient;  
need to contact  
many reviewers  
to find 2-3

Reviewer pool  
limited; lack of  
succession plan,  
training

Subjective;  
variable quality;  
can be opaque

Disagreement  
between  
reviewers likely

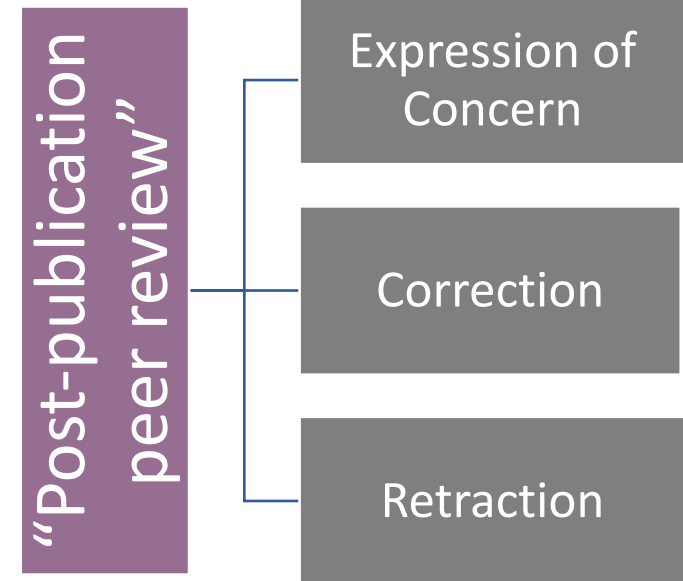
Lack of diversity;  
groupthink

Researchers  
know each other  
in some fields;  
difficult to  
anonymise

Reviewer  
burnout; low  
incentive

Difficult to  
detect fraud,  
irreproducible  
data

# ETHICAL ISSUES IN SCHOLARLY PUBLISHING





## REPRODUCIBILITY IN SCHOLARLY PUBLISHING

*Reproducibility and reliability of biomedical research: improving research practice*

Symposium report,  
October 2015

(The Academy of Medical Sciences,  
CC BY)

<https://acmedsci.ac.uk/file-download/38189-56531416e2949.pdf>

**Data dredging**  
Also known as p-hacking, this involves repeatedly searching a dataset or trying alternative analyses until a 'significant' result is found.

**Omitting null results**  
When scientists or journals decide not to publish studies unless results are statistically significant.

**Underpowered study**  
Statistical power is the ability of an analysis to detect an effect, if the effect exists – an underpowered study is too small to reliably indicate whether or not an effect exists.

**Errors**  
Technical errors may exist within a study, such as misidentified reagents or computational errors.

**Underspecified methods**  
A study may be very robust, but its methods not shared with other scientists in enough detail, so others cannot precisely replicate it.

**Weak experimental design**  
A study may have one or more methodological flaws that mean it is unlikely to produce reliable or valid results.

Issues

## FUNDAMENTAL PRINCIPLES OF PEER REVIEW & PEER REVIEW ETHICS

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- Introduction to peer review & COPE
- Aims & models of peer review
- **Ethics of peer review**

## FAKE PEER REVIEW

...“peer review and citation ring,” 60 papers retracted

The Peer Review Scam:  
How authors are reviewing their own papers

...retractions...  
bring total fake peer review count to 250

Major publisher retracting more than 100 studies from cancer journal over fake peer reviews

## PEER REVIEW FRAUD

- **Author level** (journal over-relying on & not checking author-recommended reviewers)
  - Mutual review among colleagues, hiding conflicts of interest
  - Fake name or known expert's name with fake email address owned by colleague or self (fake review by colleague or self)
  - With or without author's knowledge: unethical third party offers online submission assistance and recommends fake reviewer details (fake review by company)
- **Author or third party**
  - Hacks into & alters records in journal review system
- **Journal/publisher level**
  - Guaranteed publication for fee (peer review absent, too fast, of low quality, or faked)
  - Fake journal submission platform
  - Fake guest editor of theme/special issue organises fake/substandard review
  - Journal editorial board bypasses proper review to publish in own journal



## UNETHICAL PEER REVIEW

Nightmare scenario:  
Text stolen from  
manuscript during  
review

Dear peer reviewer, you  
stole my paper: An  
author's worst nightmare

"I am really sorry:"  
Peer reviewer stole  
text for own paper

Chem journal yanks paper  
because authors had stolen  
it as peer reviewers

## EXAMPLE COPE FORUM CASES

1. A peer reviewer notices ~2/3 data in a submitted paper have been described before. The editors suspect salami publication. What should they do?
2. An author references her past studies in a submitted paper, but some paragraphs are plagiarised. However, when the editor contacts the author's institution, it says the author has already been transparent by citing her past work. What should the editor do?
3. An author publicly but wrongly names and blames a reviewer for rejecting a paper. The editors/reviewers/authors agree to publish the positive peer review report in a journal blog. What else should happen?
4. A handling editor notices a reviewer has been recommending that authors cite many of the reviewer's own works. Apart from banning the reviewer from reviewing, what else can be done?

“

Peer reviewers play a role in ensuring the **integrity** of the scholarly record. The peer review process depends to a large extent on the **trust and willing participation** of the scholarly community and requires that everyone involved behaves **responsibly and ethically**. ...Journals have an obligation to provide **transparent policies** for peer review, and reviewers have an obligation to conduct reviews in an **ethical and accountable** manner. Clear communication between the journal and the reviewers is essential to facilitate **consistent, fair and timely review**.

”

COPE Ethical guidelines for peer reviewers

[https://publicationethics.org/files/cope-ethical-guidelines-peer-reviewers-v2\\_0.pdf](https://publicationethics.org/files/cope-ethical-guidelines-peer-reviewers-v2_0.pdf)

## ETHICAL PEER REVIEW 1

### 1. Declare conflicts of interest (before/during review)

Examples of COIs: Connected to project / grant or funding, current collaborator, recent co-author/mentor/mentee, disagreement, public viewpoint

2. Give correct personal details; do not impersonate others or manipulate peer review
3. Reply quickly to invitation after checking abstract/manuscript
4. Decline if no time, wrong area of expertise, or you do not accept journal's peer review model
5. Recommend other peer reviewers neutrally and truthfully
6. Do not forward (eg, to postdoc/colleague) without permission
7. State if you had help or did not review parts
8. Do not contact authors

## ETHICAL PEER REVIEW 2

9. Keep to deadline and journal guidelines; do not delay review / publication for personal gain or revenge
- 10. Be concise, courteous, and constructive**
11. No libel; no bias; no (self-)plagiarism
- 12. Recommend references only if relevant**
13. Keep manuscript & peer review report/process confidential (check journal policy: who owns review?)
- 14. Destroy / delete materials after review**
15. Do not use information/ideas until after publication and citation
- 16. Inform journal if you know author identity (double-anonymised review) or suspect ethical problems**

**Joint investigations** (permission may be needed if peer review report is to be used in investigations):

**Cooperation & Liaison between Universities & Editors (CLUE): recommendations on best practice:**

Wager, E., Kleinert, S. & on behalf of the CLUE Working Group. Res Integr Peer Rev 6, 6 (2021). <https://doi.org/10.1186/s41073-021-00109-3>

## PEER REVIEW DEVELOPMENTS

### Peer review standardisation

 **A Standard Taxonomy for Peer Review**  
<https://osf.io/68rnz/>

### Review recognition, incentive

 <https://publons.com/>  <https://www.reviewercredits.com/>



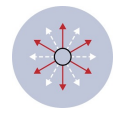

### Public post-publication commenting

 <https://pubpeer.com/>

### Peer recommendations

 <https://facultyopinions.com/>  <https://prelights.biologists.com/>  
 <https://collectionsblog.plos.org/author/channels/>  <https://periodicals.com/>  
 ScienceOpen Collections <https://about.scienceopen.com/collections/>



### Reviewer training, diversity

 <https://researcheracademy.elsevier.com/navigating-peer-review/certified-peer-reviewer-course>  
 <https://www.acsreviewerlab.org/>  <https://iopublishing.org/peer-review-excellence/>  
 <https://webofscienceacademy.clarivate.com/learn>

### Preprint peer review

 <https://peercommunityin.org/>  <https://www.reviewcommons.org/>  <https://prereview.org/>

### Peer review research, promotion

 <https://peerreviewcongress.org/>  <https://peerreviewweek.wordpress.com/>

## PEER REVIEW CORE PRINCIPLES (European Science Foundation, 2011)



5 Pillars supporting good practices of review with quality and equity

## Monument to an Anonymous Peer Reviewer

Institute of Education, National Research University  
Higher School of Economics (HSE University), Moscow,  
26 May 2017

*5 faces showing results of peer review:  
Accept/Reject/Major changes/Minor changes/  
Revise & Resubmit*

*“Reviewers are ‘invisible heroes in science’”*

Igor Chirikov, HSE University

<https://www.nature.com/articles/nature.2017.22060>





# THANK YOU

Dr Trevor Lane, Council Member, COPE

Email: [trevorlane@publicationethics.org](mailto:trevorlane@publicationethics.org)



[publicationethics.org](http://publicationethics.org)

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Eastleigh, Hampshire, SO53 3LG, United Kingdom

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[@COPE](https://twitter.com/COPE)



[LinkedIn](https://www.linkedin.com/company/publicationethics)

PROMOTING INTEGRITY IN SCHOLARLY  
RESEARCH AND ITS PUBLICATION