RCR: Responsibilities of Scientific Peer Reviewers

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What is peer review?

Reviewers play a central role in scholarly publishing. Peer review helps validate research, establish a method by which it can be evaluated, and increase networking possibilities within research communities. Despite criticisms, peer review is still the only widely accepted method for research validation.

Elsevier relies on the peer review process to uphold the quality and validity of individual articles and the journals that publish them.

Peer review has been a formal part of scientific communication since the first scientific journals appeared more than 300 years ago. *The Philosophical Transactions of the Royal Society* is thought to be the first journal to formalize the peer review process.

In September 2009, Elsevier partnered with Sense About Science, an independent NGO working to promote the public's understanding of 'sound science', to launch the 2009 Peer Review Study – the largest survey ever international survey of authors and reviewers.

The peer review process
Types of peer review

Single Blind Review

The names of the reviewers are hidden from the author. This is the traditional method of reviewing and is the most common type by far.

- Reviewer anonymity allows for impartial decisions – the reviewers will not be influenced by the authors.
- Authors may be concerned that reviewers in their field could delay publication, giving the reviewers a chance to publish first.
- Reviewers may use their anonymity as justification for being unnecessarily critical or harsh when commenting on the authors’ work.

Double Blind Review

Both the reviewer and the author are anonymous.

- Author anonymity prevents any reviewer bias, for example based on an author's country of origin or previous controversial work.
- Articles written by prestigious or renowned authors are considered on the basis of the content of their papers, rather than their reputation.
- Reviewers can often identify the author through their writing style, subject matter or self-citation.

Open Review

Reviewer and author are known to each other.

- Some believe this is the best way to prevent malicious comments, stop plagiarism, prevent reviewers from following their own agenda, and encourage open, honest reviewing.
- Others see open review as a less honest process, in which politeness or fear of retribution may cause a reviewer to withhold or tone down criticism.

More transparent peer review

Reviewers play a vital role in academic publishing, yet their contributions are often hidden. Three Elsevier journals now publish supplementary review files alongside the articles on ScienceDirect.

- Acknowledges the important role of reviewers
- Enriches published articles and improves the reading experience
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 may be unaware of their ethical obligations. The COPE Ethical Guidelines for Peer Reviewers set out the basic principles and standards to which all peer reviewers should adhere during the peer-review process. It is hoped they will provide helpful guidance to researchers, be a reference for journals and editors in guiding their reviewers, and act as an educational resource for institutions in training their students and researchers.

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

• 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
COPE Ethical Guidelines for Peer Reviewers

Expectations during the peer-review process

On being approached to review

Peer reviewers should:

• respond in a reasonable time-frame, especially if they cannot do the review, and without intentional delay.

• declare if they do not have the subject expertise required to carry out the review or if they are able to assess only part of the manuscript, outlining clearly the areas for which they have the relevant expertise.

• only agree to review a manuscript if they are fairly confident they can return a review within the proposed or mutually agreed time-frame, informing the journal promptly if they require an extension.

• declare any potentially conflicting or competing interests (which may, for example, be personal, financial, intellectual, professional, political or religious), seeking advice from the journal if they are unsure whether something constitutes a relevant interest.

• follow journals’ policies on situations they consider to represent a conflict to reviewing. If no guidance is provided, they should inform the journal if: they work at the same institution as any of the authors (or will be joining that institution or are applying for a job there); they are or have been recent (e.g. within the past 3 years) mentors, mentees, close collaborators or joint grant holders; they have a close personal relationship with any of the authors.

• review afresh any manuscript they have previously reviewed for another journal as it may have changed between the two submissions and the journals’ criteria for evaluation and acceptance may be different.

• ensure suggestions for alternative reviewers are based on suitability and not influenced by personal considerations or made with the intention of the manuscript receiving a specific outcome (either positive or negative).

• not agree to review a manuscript just to gain sight of it with no intention of submitting a review.

• decline to review if they feel unable to provide a fair and unbiased review.

• decline to review if they have been involved with any of the work in the manuscript or its reporting.

• decline to review if asked to review a manuscript that is very similar to one they have in preparation or under consideration at another journal.

• decline to review if they have issues with the peer-review model used by a journal (e.g. it uses open review and releases the reviewers’ names to the authors) that would either affect their review or cause it to be invalidated because of their inability to comply with the journal’s review policies.
During review

Peer reviewers should:

- notify the journal immediately and seek advice if they discover either a conflicting interest that wasn’t apparent when they agreed to the review or anything that might prevent them providing a fair and unbiased review.

- refrain from looking at the manuscript and associated material while awaiting instructions from a journal on issues that might cause the request to review to be rescinded.

- read the manuscript, ancillary material (e.g. reviewer instructions, required ethics and policy statements, supplemental data files) and journal instructions thoroughly, getting back to the journal if anything is not clear and requesting any missing or incomplete items they need to carry out a full review.

- notify the journal as soon as possible if they find they do not have the expertise to assess all aspects of the manuscript; they shouldn’t wait until submitting their review as this will unduly delay the review process.

- not involve anyone else in the review of a manuscript, including junior researchers they are mentoring, without first obtaining permission from the journal; the names of any individuals who have helped them with the review should be included with the returned review so that they are associated with the manuscript in the journal’s records and can also receive due credit for their efforts.

- keep all manuscript and review details confidential.

- contact the journal if circumstances arise that will prevent them from submitting a timely review, providing an accurate estimate of the time they will need to do a review if still asked to do so.

- in the case of double-blind review, if they suspect the identity of the author(s) notify the journal if this knowledge raises any potential conflict of interest.

- notify the journal immediately if they come across any irregularities, have concerns about ethical aspects of the work, are aware of substantial similarity between the manuscript and a concurrent submission to another journal or a published article, or suspect that misconduct may have occurred during either the research or the writing and submission of the manuscript; reviewers should, however, keep their concerns confidential and not personally investigate further unless the journal asks for further information or advice.

- not intentionally prolong the review process, either by delaying the submission of their review or by requesting unnecessary additional information from the journal or author.
COPE Ethical Guidelines for Peer Reviewers

- ensure their review is based on the merits of the work and not influenced, either positively or negatively, by any personal, financial, or other conflicting considerations or by intellectual biases.

- not contact the authors directly without the permission of the journal.

**When preparing the report**

Peer reviewers should:

- bear in mind that the editor is looking to them for subject knowledge, good judgement, and an honest and fair assessment of the strengths and weaknesses of the work and the manuscript.

- make clear at the start of their review if they have been asked to address only specific parts or aspects of a manuscript and indicate which these are.

- follow journals' instructions on the specific feedback that is required of them and, unless there are good reasons not to, the way this should be organized.

- be objective and constructive in their reviews and provide feedback that will help the authors to improve their manuscript.

- not make derogatory personal comments or unfounded accusations.

- be specific in their criticisms, and provide evidence with appropriate references to substantiate general statements such as, 'this work has been done before', to help editors in their evaluation and decision and in fairness to the authors.

- remember it is the authors' paper and not attempt to rewrite it to their own preferred style if it is basically sound and clear; suggestions for changes that improve clarity are, however, important.

- be aware of the sensitivities surrounding language issues that are due to the authors writing in a language that is not their own, and phrase the feedback appropriately and with due respect.

- make clear which suggested additional investigations are essential to support claims made in the manuscript under consideration and which will just strengthen or extend the work.

- not prepare their report in such a way or include comments that suggest the review has been done by another person.

- not prepare their report in a way that reflects badly or unfairly on another person.
COPE Ethical Guidelines for Peer Reviewers

• not make unfair negative comments or include unjustified criticisms of any competitors' work that is mentioned in the manuscript.

• ensure their comments and recommendations for the editor are consistent with their report for the authors; most feedback should be put in the report for the authors.

• confidential comments to the editor should not be a place for denigration or false accusation, done in the knowledge that the authors will not see these comments.

• not suggest that authors include citations to the reviewer's (or their associates') work merely to increase the reviewer's (or their associates') citation count or to enhance the visibility of their or their associates' work; suggestions must be based on valid academic or technological reasons.

• determine whether the journal allows them to sign their reviews and, if it does, decide as they feel comfortable doing.

• if they are the editor handling a manuscript and decide themselves to provide a review of that manuscript, do this transparently and not under the guise of an anonymous review if the journal operates blind review; providing a review for a manuscript being handled by another editor at the journal can be treated as any other review.

Expectations post review

Peer reviewers should:

• continue to keep details of the manuscript and its review confidential.

• respond promptly if contacted by a journal about matters related to their review of a manuscript and provide the information required.

• contact the journal if anything relevant comes to light after they have submitted their review that might affect their original feedback and recommendations.

• read the reviews from the other reviewers, if these are provided by the journal, to improve their own understanding of the topic or the decision reached.

• try to accommodate requests from journals to review revisions or resubmissions of manuscripts they have reviewed.
Instructions for Reviewers of Research Articles

**CRITERIA FOR JUDGMENT**

*Research Articles* should report a major breakthrough in a particular field. They should be in the top 20% of the papers that *Science* publishes and be of strong interdisciplinary interest or unusual interest to the specialist.

**Overall Recommendation:** On the basis of the mission statement above, recommend in your review whether the paper should be published in *Science* and provide a more detailed critique based on the following:

- **Technical Rigor:** Evaluate whether, or to what extent, the data and methods substantiate the conclusions and interpretations. If appropriate, indicate what additional data and information are needed to do so.

- **Novelty:** Indicate in your review if the conclusions are novel or are too similar to work already published.

- **Data:** The data necessary to support, understand, and extend the conclusions should be presented in the paper or Supporting Online material or should be deposited in a database upon publication. Data presentation should follow conventions in your field. Please comment on the whether these conditions are met or indicate how they can be.

- **Supplementary Materials:** Supplementary Materials include methods, text, or data that is still necessary for the integrity and excellence of the paper. They must be directly related to the conclusions of the print paper and should not present additional interpretations or conclusions. Your review should include an evaluation of the Supplementary Materials.

- **Security:** We ask reviewers to inform us if they have concerns that release of this paper may pose a danger to public health, safety, or security. Such concerns will be brought to the attention of the Editor-in-Chief for further evaluation.

- **Length:** Research Articles may be up to 5 printed pages (4000 – 5000 words). The data and ideas should be such that they warrant more space than a Report (typically 2500 words, or 3 pages).

*Science* is also now accepting a few Research Articles for an online presentation (about 1 per issue). These are expected to present significant research results that cannot be fully presented in the print format and merit the extra length and attention provided in an enriched and integrated online format. These can be longer, up to 8000 words and include methods and additional figures as part of the main presentation. They should fully meet Science’s criteria for Research Articles. Please indicate in your review if you feel that this paper is appropriate to be featured in this format.

*The final selection is based on relative quality of papers rather than absolute merit and is constrained by available space in Science and our commitment to balance subject matter.*

- **Conflict of Interest:** If you cannot judge this paper impartially, please notify us immediately. If you have any financial or professional affiliations that may be perceived as a conflict of interest in reviewing the manuscript, please describe those as indicated on our online review form.

- **Confidentiality:** We expect reviewers to protect the confidentiality of the manuscript and ensure that it is not disseminated or exploited. Please destroy your copy of the manuscript when you are done. Only discuss the paper with a colleague with permission from the editor. We do not disclose the identity of our reviewers.

**Returning your review:** Please return your review using our form at [http://mcc.submit2science.org](http://mcc.submit2science.org). To login, use your user ID (it is included on the email notifying you of the review) and the password you have set. We can also receive reviews by email to science_reviews@aaas.org or by FAX to 202-408-1256.

**Should this manuscript be accompanied by a Perspective?**

Perspectives are short commentaries on current research published in *Science* or elsewhere. If you feel that this work deserves such a discussion for a wider audience, please include a note to the editor. Please provide recommendations of Perspective authors also.

Pandering to the Public

RCR Casebook: Peer Review

Claire is a widely recognized epidemiologist who has served on the review board of several journals. She takes her role of reviewer seriously and expects editors to uphold the highest standards about the research that gets published.

Claire continues to review articles nearly every month for a highly esteemed science journal whose long-time editor is retiring. Claire finds the new editor a trifle flashy, and at first assumes that he is probably just trying to modernize the journal and up its visibility in the marketplace. After all, journals are businesses that seek to have a positive cash flow.

However, Claire soon notices other problems. Since the appointment of the new editor, several articles have been published despite her recommendations for rejection. Moreover, they are published without any appropriate revision. The conceptual framework is often poorly developed. The methodology is not properly presented and explained. For example, authors fail to report effect sizes and other important indicators regarding the power of the study. Worse, in the abstract, discussion, and conclusion sections, they make claims about their findings that do not seem to be supported by the actual methodology and results.

Claire knows that these problems do not arise because of space limitations. While the journal receives many submissions and can accept very few, the journal has a policy of including supplementary documents online which contain details that cannot be included in the printed article due to space limitations. The papers fail to include methodological detail so that readers can figure out how a study was done and replicate it.

The final straw is the way the editor seems to be pandering to the public. Many of the poorest papers published are also papers with considerable press value—papers that address issues that have been of great concern lately. The few modifications to these poor submissions are designed to hype the spectacular findings that the authors claim. It appears that the editor is seeking to build a reputation for reporting exciting results, even if they are not valid.

From a scientific and public health perspective, this strikes Claire as the worst possible kind of error for an editor to make. Not only is the science poor, but it is also likely to harm the public health since a journal can influence policy if policy makers do not recognize the poor quality of the articles. In any event, the reputation of science and especially of that journal will eventually suffer. Claire is very frustrated and is trying to decide whether the editor has gone too far in revamping the journal and putting his own stamp on it.
What should Claire do?

Discussion Questions for the Facilitator

- Are there any generally recognized standards for editors of journals to follow?
- With whom do you think Claire, a long-time reviewer for the journal, should consult?
- Should editors share with peer reviewers the letters of acceptance and letters of rejection that are sent to authors?
- Could protesting the editorial style have either a negative or positive impact on Claire’s reputation?
- What is the role of the journal’s editorial board?
- Do you think editors should have the final say regarding which articles are accepted? Or should such decisions be made by a majority vote of peer reviewers? *