

Introduction

Peer review is an integral part of scholarly publishing, as well as research funding. Academic journals, publishers, and funders often rely on the expert evaluation and recommendation of experienced researchers on the validity, quality, and suitability of manuscripts for publication or the award of funding for grant proposals.

As a system, peer review aims to achieve integrity, reliability, and trust in research by filtering out poorly conceived, conducted, or reported studies. Typically, the comments and opinions of different reviewers are considered by journal editors, or grant committee/panel members, before a decision is made. How well the system functions is heavily dependent on the competence, integrity, and honesty of individual reviewers as well as the processes that support them.

Reviewers are seldom trained in *how* to peer review. The vast majority of first-time reviewers learn through experience, sometimes with guidance from senior colleagues. Thus, improper practices or standards (including prejudice) can seriously undermine the robustness and value of the entire peer review process. The below excerpt from UKRIO's [Code of Practice for Research](#) sets out key guiding principles for both individual researchers and organisations on conducting peer review.

Extract from UKRIO's Code of Practice for Research

3.13 Peer Review

3.13.1 ORGANISATIONS AND RESEARCHERS should be aware that peer review is an important part of good practice in the publication and dissemination of research and research findings, the assessment of applications for research grants, and in the ethics review of research projects. Organisation should provide appropriate training and/or a mentoring scheme on peer review.

3.13.2 ORGANISATIONS should encourage and enable researchers to act as peer reviewers for meetings, journals, and other publications, grant applications and ethics review of research proposals, and support those who do so through training and/or mentoring schemes. They should recognise the obligations of peer reviewers to be thorough and objective in their work and

to maintain confidentiality, and should not put pressure, directly or indirectly, on peer reviewers to breach these obligations.

3.13.3 RESEARCHERS who carry out peer review should do so to the highest standards of thoroughness and objectivity. They should follow the guidelines for peer review of any organisation for which they carry out such work as well as the *Committee on Publication Ethics (COPE)* guidance for publication ethics.

3.13.4 Researchers who agree to peer review must be aware of and avoid both status bias (also known as the Matthew effect – see Box) and implicit bias (commonly known as unconscious bias – see Box) throughout the review process. To facilitate this, they could encourage the relevant body requesting the peer review to anonymise reviewers to author names and affiliations.

Box: Bias

The Matthew Effect (Status Bias)

Originally developed by [Merton \(1968\)](#) to describe the situation in which individuals who begin in a position of relative advantage accrue greater incremental gains over individuals who begin at a position of relative disadvantage.

For example, a reviewer may give a higher score to a grant application or accept a manuscript for publication if the author is a well-known and established researcher with excellent track record. However, if the same grant or manuscript is submitted by a relatively unknown researcher (e.g., someone at the early-mid career stage), the reviewer may give a lower score on the grant or reject the manuscript for publication.

Implicit Bias (Unconscious Bias)

Various biases developing gradually in the subconscious because of beliefs, assumptions and attitudes (which may or may not be ethnocentric) that reinforce stereotypes and assigns judgements on others. Examples include but are not limited to:

- Name bias
- Confirmation bias
- Conformity bias
- Affinity bias
- Gender bias
- Ageism

- 3.13.5** Researchers should maintain strict confidentiality and not retain or copy any material under review without the express written permission of the organisation which requested the review. Maintaining confidentiality includes not sharing any material with generative AI tools. They should not make use of research designs, data, or research findings from a grant application, manuscript, or other material under review without the express permission of the author(s) and should not allow others to do so. Researchers acting as peer reviewers must declare any relevant competing interests and decline to peer review if they have significant conflicts.
- 3.13.6** While carrying out peer review, researchers may become aware of possible misconduct or have ethical concerns about the design or conduct of the research. In such cases they should inform, in confidence, an appropriate representative of the organisation which requested the review, such as the editor of the relevant journal, publisher staff, or the chair of the relevant grants or ethics committee. Investigation of allegations of research misconduct is the responsibility of the publisher, funder, organisation, or other relevant bodies.
- 3.13.7** Researchers who submit material containing research data or information derived from machine learning algorithms and non-sensitive data should ensure all programming scripts (e.g., using Python, R or other scripting language) and data are openly accessible to reviewers.



Promoting integrity and high ethical standards in research
 Providing confidential, independent, and expert support

© UK Research Integrity Office 2023

This article is distributed under the terms of the [Creative Commons Attribution-Non Commercial-No Derivatives License](#), which allows re-users to copy and distribute the material in any medium or format in unadapted form only, for non-commercial purposes only, and only so long as attribution is given to the creator.