

Perspectives from peerspectives

Peer review and
biomedical editing
training initiative for
PhD Students

**QUEST Seminar on
Responsible Research**
Dec 6th, 2022

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Potential conflicts of interest

- ▶ I am passionate about improving peer review and training for doctoral students.
- ▶ I received funding from a SPOKES *Wellcome Trust Funded Translational Partnership Fellowship* via the *QUEST Center* of the *Berlin Institute of Health* (2020-21).
- ▶ I regularly serve as a peer reviewer for various scientific journals, including from *The BMJ* publishing group, which partners with *Peerspectives*.

Peer Review



Why bother? I

- ▶ The scientific system hinges on peer reviews and peer reviewers
- ▶ Editors report that they struggle to find qualified reviewers
- ▶ A fair share of review reports are not useful (lacking methodological expertise, demeaning language, unclear or unconstructive requests)
- ▶ 77% of 170.000 researchers expressed interest in review training
- ▶ How to conduct high quality peer review is notoriously absent from academic curricula at the PhD level

Why bother? II

- ▶ Benefits of serving as a peer reviewer
 - ▷ Having influence on improving evidence body & research methods
 - ▷ Staying up to date with literature
 - ▷ Improving your own writing
 - ▷ Recognition for your contribution, etc.
- ▶ Importance to involve early career researchers in editorial processes

Is it in our job descriptions?

- How many peer reviews have you done (ever / this year)?
- How much time do you spend performing peer review?
- How much time do others spend peer reviewing you?



Is it in our job descriptions?

Aczel et al. *Research Integrity and Peer Review* (2021) 6:14
<https://doi.org/10.1186/s41073-021-00118-2>

Research Integrity and
Peer Review

RESEARCH

Open Access

A billion-dollar donation: estimating the cost of researchers' time spent on peer review



Balazs Aczel^{1*} , Barnabas Szaszi^{1*} and Alex O. Holcombe²

Abstract

Background: The amount and value of researchers' peer review work is critical for academia and journal publishing. However, this labor is under-recognized, its magnitude is unknown, and alternative ways of organizing peer review labor are rarely considered.

Methods: Using publicly available data, we provide an estimate of researchers' time and the salary-based contribution to the journal peer review system.

Results: We found that the total time reviewers globally worked on peer reviews was over 100 million hours in 2020, equivalent to over 15 thousand years. The estimated monetary value of the time US-based reviewers spent on reviews was over 1.5 billion USD in 2020. For China-based reviewers, the estimate is over 600 million USD, and for UK-based, close to 400 million USD.

Conclusions: By design, our results are very likely to be under-estimates as they reflect only a portion of the total number of journals worldwide. The numbers highlight the enormous amount of work and time that researchers provide to the publication system, and the importance of considering alternative ways of structuring, and paying for, peer review. We foster this process by discussing some alternative models that aim to boost the benefits of peer review, thus improving its cost-benefit ratio.

Keywords: Peer-review, Academic publishers, Publication system

What might improve the quality of peer reviews?

- ▶ No one really knows... evidence-base is sparse!
 - ▶ Training?
 - ▶ More careful selection of reviewers?
 - ▶ Feedback on performance (e.g. review reviewed by editors)?
 - ▶ Learning from or supervision by other more experience reviewers?
 - ▶ Better incentives? (e.g. credit & acknowledgement, published reviews, €/\$, Publons)
 - ▶ Greater accountability? (open & public review)
 - ▶ Protected time? (e.g. 10% of work time)

What might improve the quality of peer reviews?

- ▶ “Live” ongoing interaction between reviewers and authors?
- ▶ Post-publication review & other “modern” variants?
- ▶ Involvement of early-career researchers?
- ▶ Automation of some tasks (e.g. AI to check for plagiarism, competing interests, manuscript allocation)?
- ▶ Formally recognize/incentivize reviews as valuable academic output that requires substantial time investment to perform well



perspectives



2) Our idea ~~peer~~ perspectives



- ▶ Content based on:
 - ▶ Personal experience, discussions with many colleagues
 - ▶ *The BMJ* Reviewer training materials, experience from *The BMJ*
 - ▶ *Science Editors' Handbook*
 - ▶ Scientific publications, commentaries and opinion pieces about peer review

Purpose & method



Provide modern training and insights into the structure, purpose, and conduct of the **peer review** and **editing processes**

Training includes a series of **instructive lectures** and **mentor-guided small group workshops** providing hands-on experience in reviewing and editing submitted research papers

Course Structure and Overview

I. Pre-Course Assignment

Independently completed peer-review assignment mirroring real-world conditions



II. Lectures

Four mandatory, interactive lectures held over Zoom with take-home assignments



III. Workshops

Four mandatory, hands-on workshops led by one editor-mentor; collaborative peer review report preparation



IV. Post-Course Assignment

Independently completed peer-review assignment mirroring real-world conditions

I. Lectures: Format

- 4x à 3 hours (with breaks)
- On Zoom, includes interactive polls, discussions & take-home assignments

zoom



What we cover /1

- Role of scientific journals, editors, peer reviewers and authors in scientific publishing system
- What we know about peer review:
 - ◆ History & practice
 - ◆ Types
 - ◆ Criticism
 - ◆ Biases
 - ◆ Existing evidence about peer review



▶ What we cover /2

- “Good” vs. “bad” peer review reports
- Sex and gender aspects
- COPE Guidelines
- Open science
- Modern/non-traditional review structures
- Approaching a manuscript to be reviewed:
 - ◆ Live step-by-step “walk-through”
- *The BMJ* manuscript meeting listen in

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II. Workshops: Format

- Small groups will be assigned
 - ◆ 1 editor-mentor + 4 trainees
- 4 suitable “live” *BMJ* manuscripts will be assigned to the group
 - ◆ The PDF of each manuscript will be uploaded to a specifically prepared, secured channel in PaperHive
 - ◆ One trainee will take the lead for each manuscript; all trainees will draft preliminary peer review report together
- Small group will meet to discuss article & finalize review report prior to submission to the journal (open review, all group members named)
- Mentor will circulate final journal decision



zoom

PAPER  HIVE

Peerspectives course as a didactic vehicle:



- to train good methods practice & reporting
- to give students credit
- to make real, meaningful contributions
- to meet (ECR) mentors & network with other (international) students

Scientific course evaluation



Scientific course evaluation

- 4 cohorts of 16-24 students ($N = 80$) in a pre-post design
 - ◆ Review quality assessment
 - Peer review assignment, based on an actual manuscript submitted to our partner journal, under real world conditions with a firm deadline and ability to use all available resources
 - ◆ Review knowledge/skills self assessment
 - By means of an 8-question online survey to self-assess their own levels of peer review knowledge and relevant skills before the start as well as after the conclusion of the course.

- Pre-registration: Available at <https://osf.io/vndcx>

Study sample

N = 80

Age

Mean (Range) 30.2 (22 - 49) 21

Gender

Female 47 (59%)

Male 31 (39%)

Prefer not to say 2 (2%)

Highest degree

Master 60 (75%)

Medicine 20 (25%)

Performed peer review in the past

No 54 (67%)

Yes 26 (33%)

Number of peer reviews performed (if any)

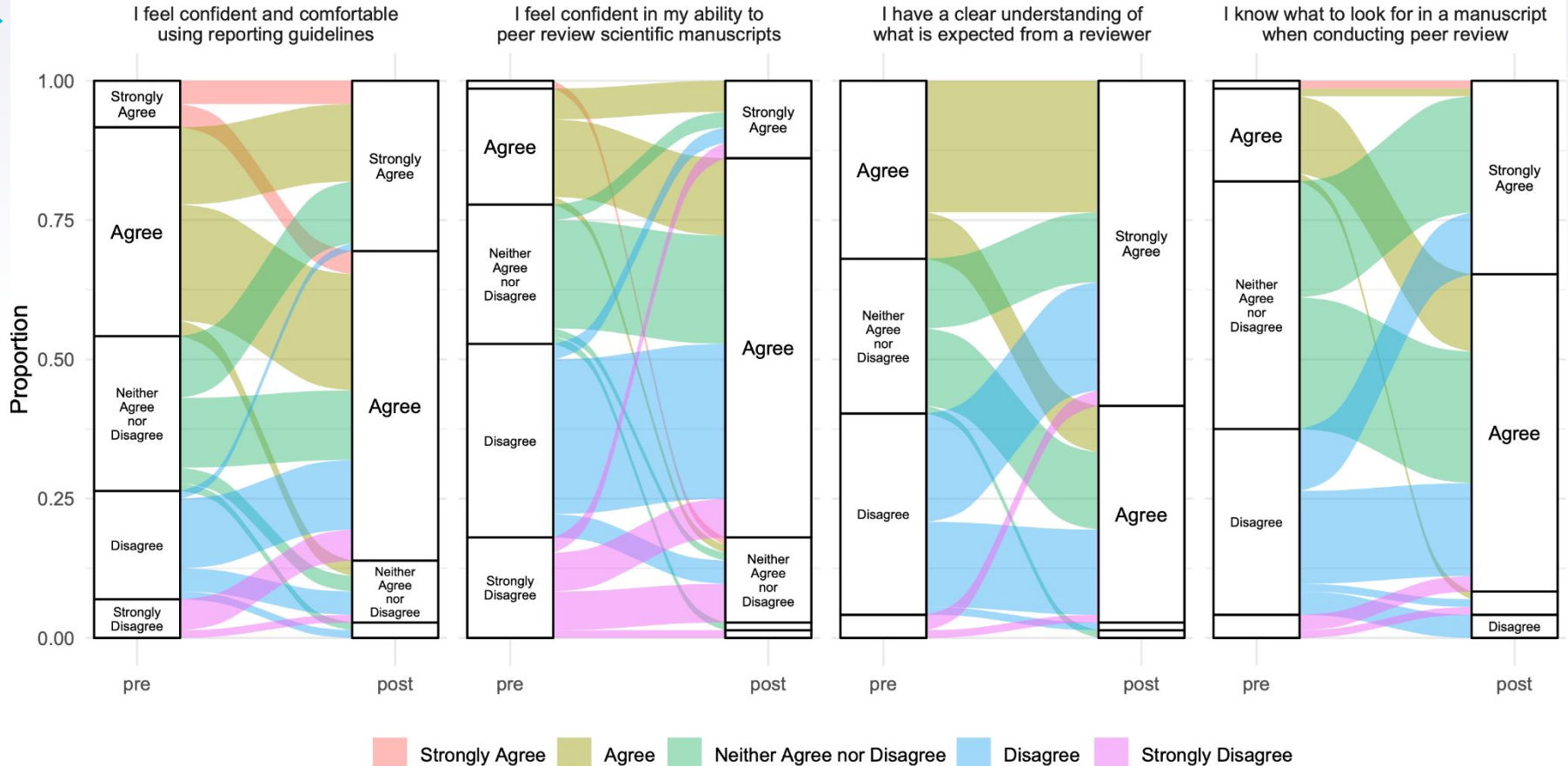
Median (Range) 2 (1 - 15)

Self assessment: Results

Statement (1 = strongly disagree, 5 = strongly agree)	Pre (mean)	Post (mean)
I feel confident in my ability to peer-review scientific manuscripts	2.5	3.9
I have a clear understanding of what is expected from a reviewer	2.9	4.5
I know what to look for in a manuscript when conducting a peer-review	2.8	4.2
I feel confident and comfortable using reporting guidelines	3.2	4.1
I have a clear understanding of ethical aspects relevant in peer review	3.2	4.2
I feel confident in formulating constructive and clear scientific critique	3.1	4.3
I feel confident in my own scientific writing abilities	3.3	3.8
I am aware of key sex- and gender-related considerations relevant for peer review	2.8	3.9

→ Take home: significant increase for all questions

Self assessment: Prelim. results



Course Feedback

From participants:

- “This course helped me to deepen my knowledge of critically reviewing a scientific manuscript which, I believe, will certainly help me to improve the quality of my own research papers in the future”
- “... one of the courses which I benefited from the most with regard to future tasks in the field of research”

From our journal partner:

- Dr. Elizabeth Loder: “The Peerspectives program has been valuable to The BMJ editors”
- Dr. Joseph Ross: “The Peerspectives peer reviews have been terrific”

Next steps

- Complete and publish course evaluation research study
 - ◆ Editor ratings on the quality of students peer review reports
 - ◆ Compare our students review quality to actual BMJ reviewers
- Publish open-source train-the-trainer materials so that other groups and institutions can offer the course and adapt it to their needs
- Find and secure sustainable funding to keep offering the course at Charité without donating our own research time/\$\$\$
- “Editorspectives”!?! (you heard it here first!)

It takes a village...



perspectives

Partners

Lecturers

Tobias Kurth

Toivo Glatz

Jess Rohmann

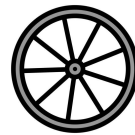
Course Coordination

Nadja Wülk

Hannah Grillmaier

Iman Abdikarim

Mariana Lopes Simoes



BIH QUEST

SPOKES

Fellowship (€)

The BMJ, Editors

Tim Feeney

Elizabeth Loder

Tiago Villanueva

Wim Weber

Sex/Gender Aspects Expert

Antoinette Maassen van den Brink (Rotterdam)

Expert editor-mentors

Susanne Breitner-Busch
(Munich)

Ralph Brinks (Witten/Herdecke)

Kristina Fišter (Zagreb)

Lars Hemkens (Basel)

André Karch (University of
Münster)

H. Georg Kuhn (Gothenburg)

Mariska Leeftang (Amsterdam)

Rutger Middelburg (Leiden)

Maarten van Smeden (Utrecht)

Bob Siegerink (Leiden)

& still growing!



peerspectives



IPH | Institute of Public Health

Prospective students, editor-mentors
& journal partners: Get in touch!

→ OSF: <https://osf.io/wyegc>

→ peerspectives@charite.de

→ Course registration for SS2023 in February:

https://iph.charite.de/en/academic_programs/phd_in_health_data_sciences/peerspectives/



Jess Rohmann, Toivo Glatz, Tobias Kurth

Credits

Special thanks to all the people who made and released these awesome resources for free:

- ▶ Presentation template by [SlidesCarnival](#)
- ▶ Illustrations by [Sergei Tikhonov](#)
- ▶ Photographs by [Unsplash](#)