UiT The Arctic University of Norway

Munin Conference on Scholarly Publishing

PANEL DISCUSSION

Transparency in Peer Review

PANELISTS:

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(PREreview)

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(ReviewerCredits)

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(PLOS)

MODERATOR:

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(UiT The Arctic University of Norway)

Wed, 27 Nov 2024

DOI: https://doi.org/10.7557/5.7923

Munin Conference on Scholarly Publishing

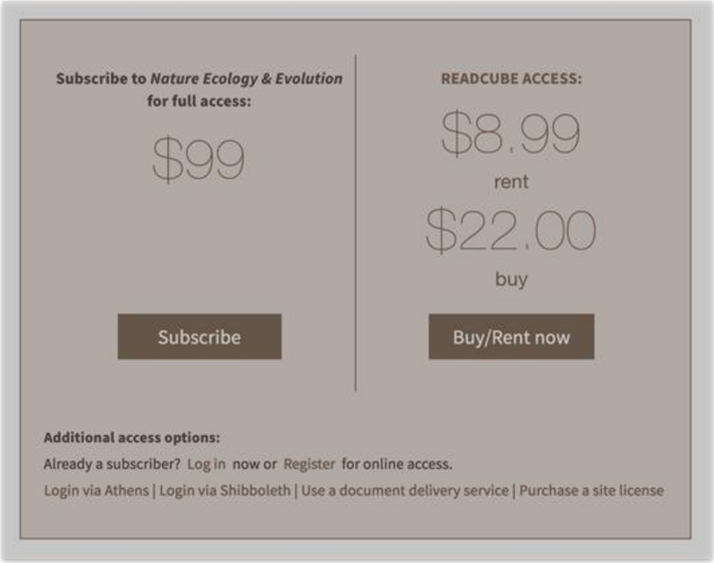
Why we need greater *equity* and *transparency* in peer review

Vanessa Fairhurst
Head of Community, PREreview

PREREVIEW


Peer review
is broken

Traditional research publication is inaccessible and slow



Peer reviewed paper

Months to years

Private

Manuscript

Submit

Journal 1

Peer Review

Journal 2

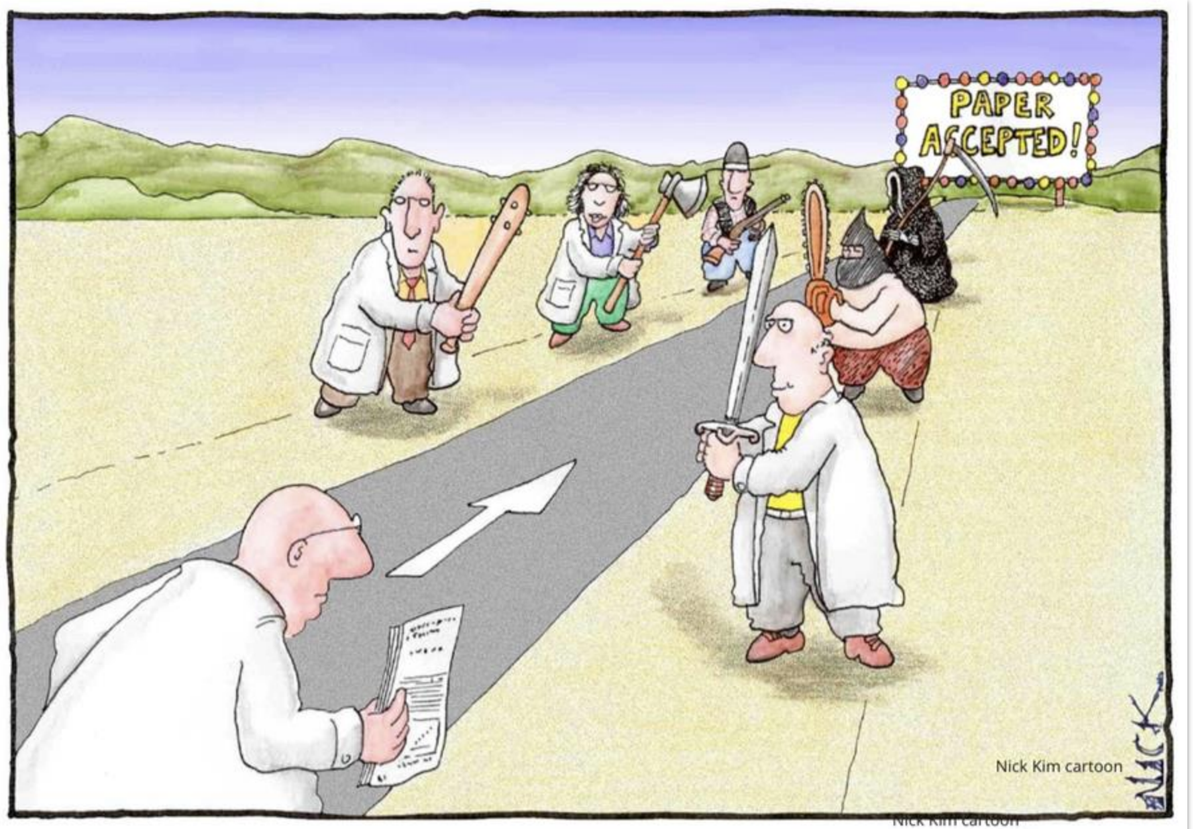
Revise

Journal 3

Revise

Peer review is inequitable and unsustainable

https://twitter.com/digitalsci/status/781860071831642113

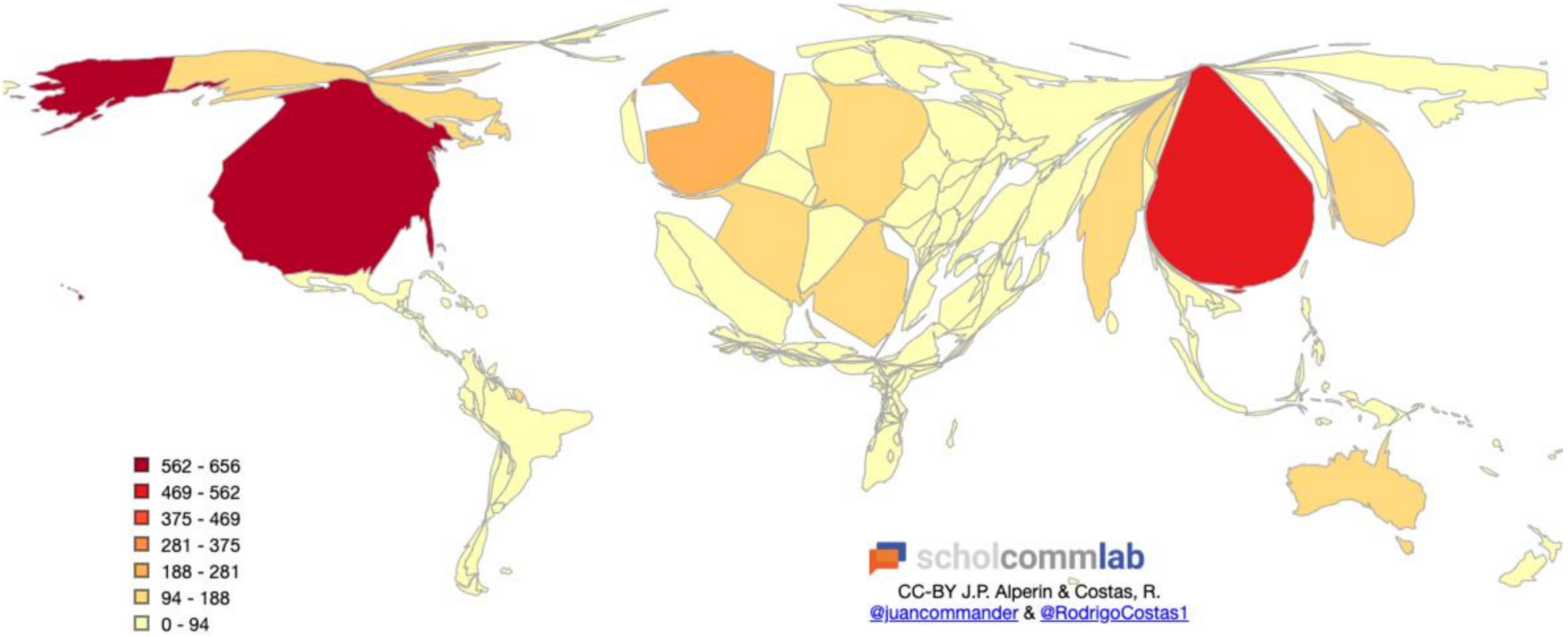


Most scientists regarded the new streamlined peer-review process as "quite an improvement."

PREREVIEW

'Most scientists regard the new streamlined peer-review process as "quite an improvement" - cartoon by Nicholas Lim, 2008

Unrepresentative gatekeeping leads to unrepresentative publishing

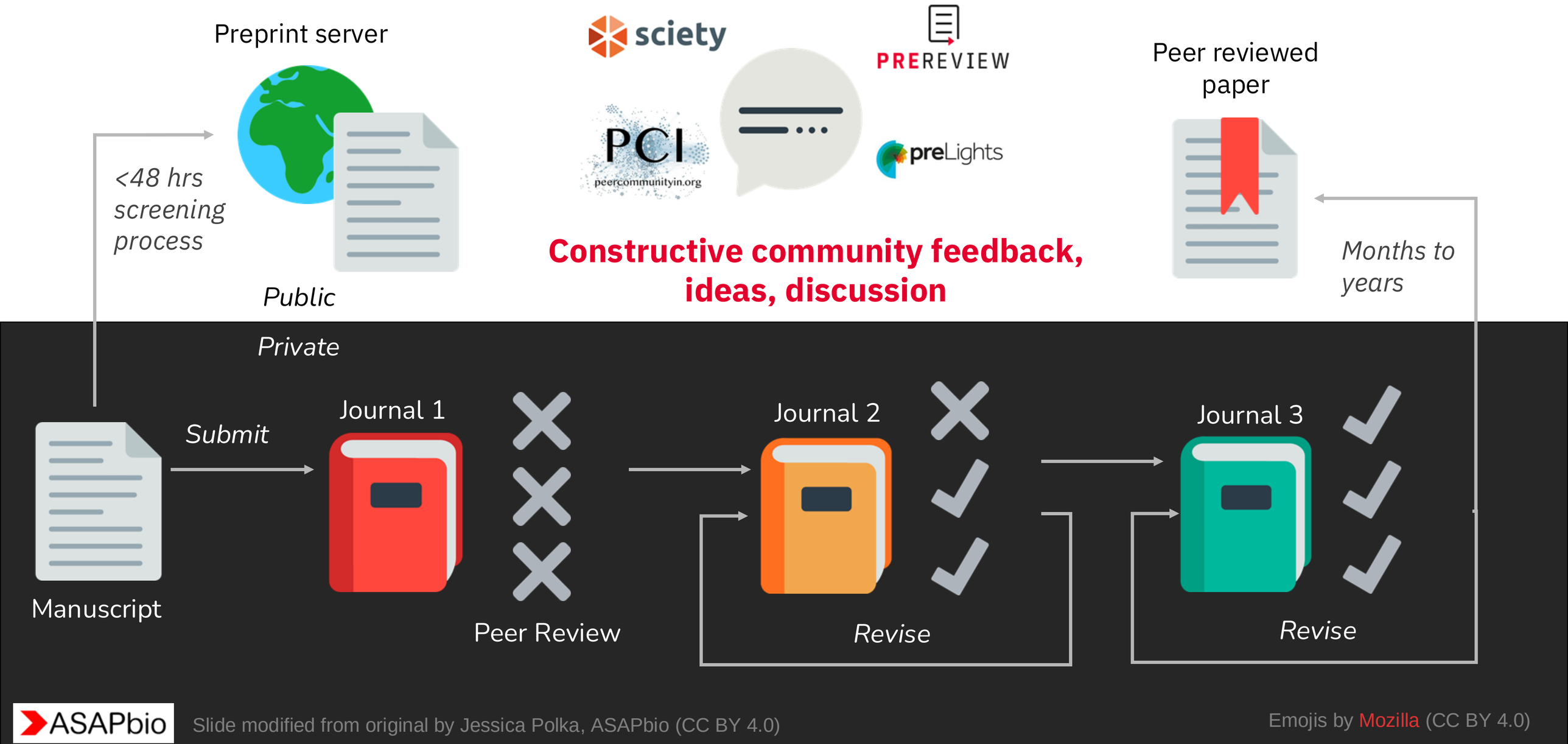


Global map scaled for publications by Juan Pablo Alperin (Simon Fraser University) and Rodrigo Costas (Centre for Science and Technology Studies) as part of a larger research collaboration to study the production and readership by countries, and over time. Data about publications by country was sourced from Scopus in 2017.

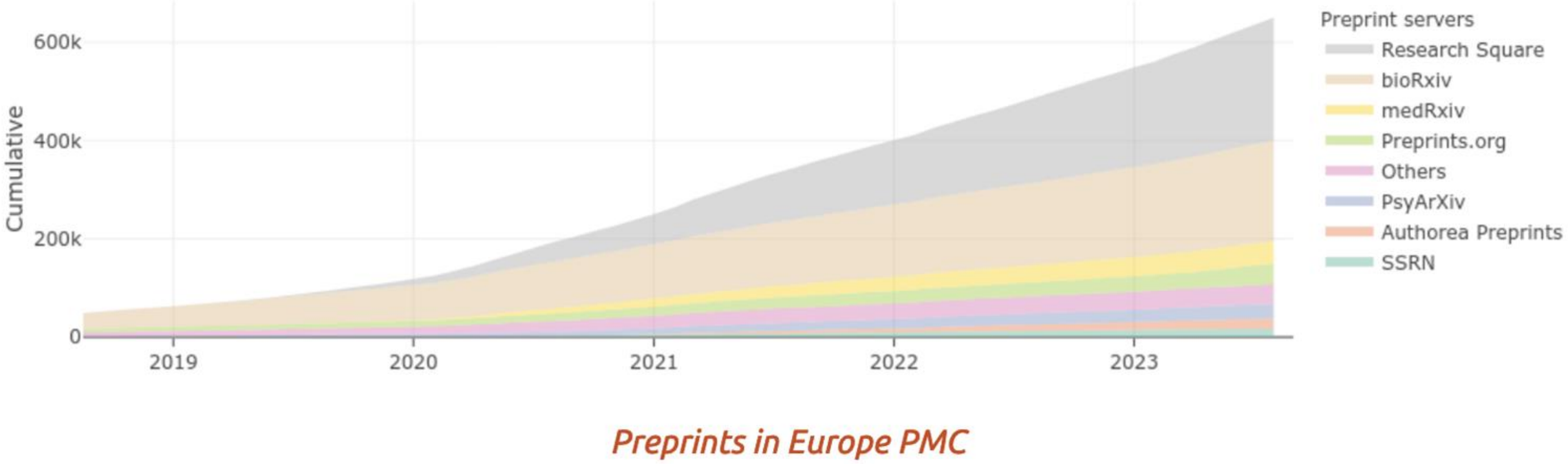
What if we leveraged *preprints* to build a more equitable and open peer review system?

PREREVIEW

Preprints pave the way for community feedback



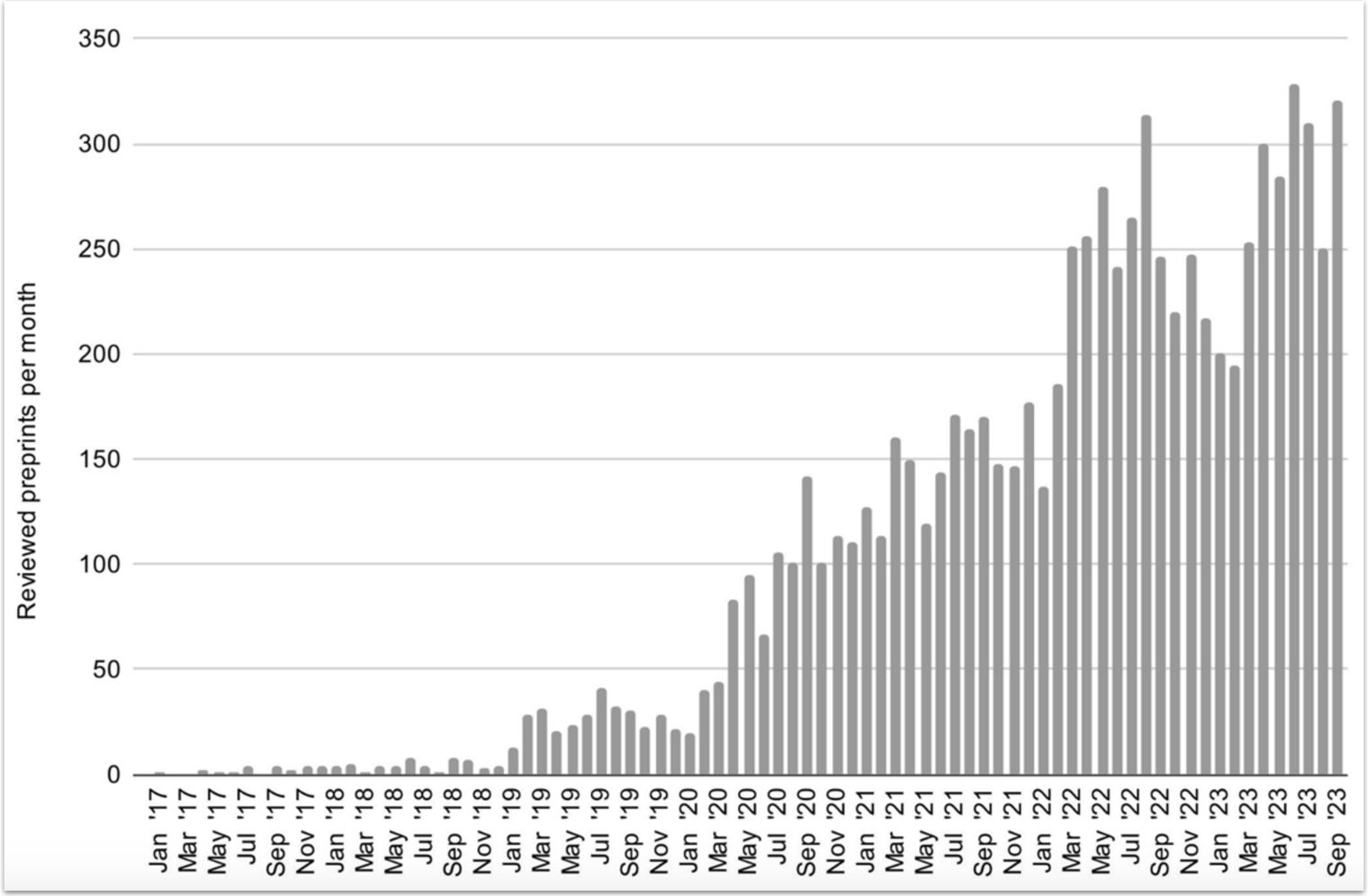
Growing number of preprints published every year



Source: Sciety website https://sciety.org/about

PREREVIEW

Preprint review adoption is also growing



Avissar-Whiting M., *et al*. (2024) Recommendations for accelerating open preprint peer review to improve the culture of science. PLoS Biol 22(2): e3002502. https://doi.org/10.1371/journal.pbio.3002502

PREREVIEW

Receiving feedback is a top motivator for authors

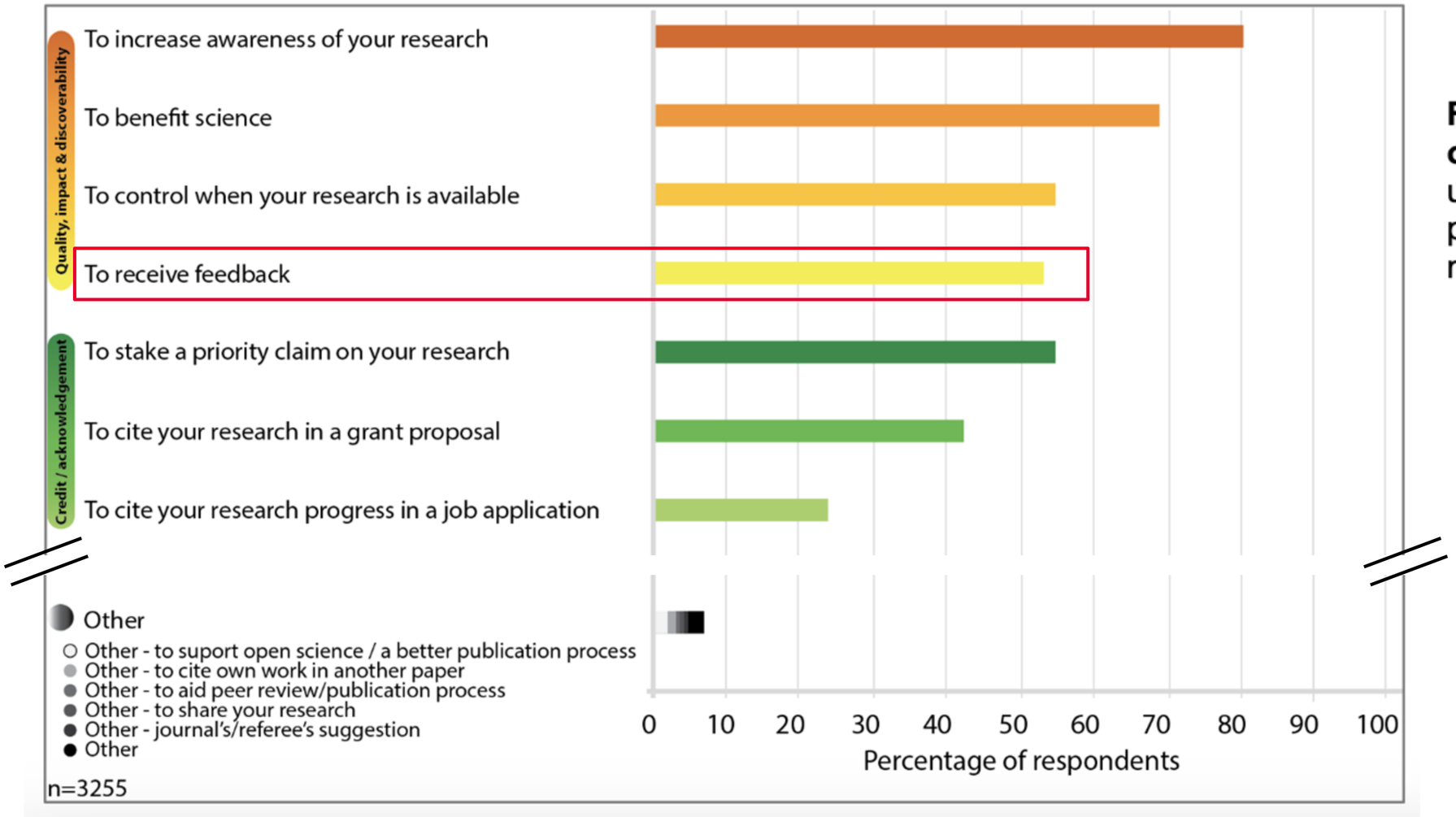


Fig. 7. Motivations for posting work on bioRxiv. In a survey of bioRxiv users, scientists were asked why they post manuscripts on the server (see main text and Supplementary Data).

Modified from Richard Sever, Ted Roeder, Samantha Hindle, Linda Sussman, Kevin-John Black, Janet Argentine, Wayne Manos, John R. Inglis - 2019 bioRxiv 833400; doi: https://doi.org/10.1101/833400

PREREVIEW

At PREreview we believe peer review expertise should be measured by ***constructive contributions*** and ***community engagement*** and not by seniority and prestige.

PREREVIEW

We work to extend and diversify the reviewer pool

- Anyone with a ORCID iD can review, challenging who can contribute to improving science.
- Human centered workflows simplify the review process.
- All reviews get a DOI via Zenodo, making reviewer work citable and creditable.

Structured PREreview of “Prior antiretroviral therapy exposure among clients presenting for HIV treatment initiation in South Africa: an exploratory mixed-methods study using multiple indicators of exposure”

by Keira, Caitlin Subijanto, and 1 other author

Published November 14, 2024 **DOI** 10.5281/zenodo.14157907 **License** CC BY 4.0

Does the introduction explain the objective of the research presented in the preprint?

Yes

The authors clearly stated the objective in the last statement of the introduction: “To start to build a reliable evidence base on this topic for sub-Saharan Africa, we conducted an exploratory, mixed-methods sub-study that collected multiple indicators of prior use for a sample of ART initiators in South Africa.”

Are the methods well-suited for this research?

Somewhat appropriate

Authors clearly defined a mixed-methods approach of quantitative and qualitative data collection in Table 1. However, it is a non-random sample and lacks a baseline for viral load testing. Authors should include a baseline for viral load testing for comparison.

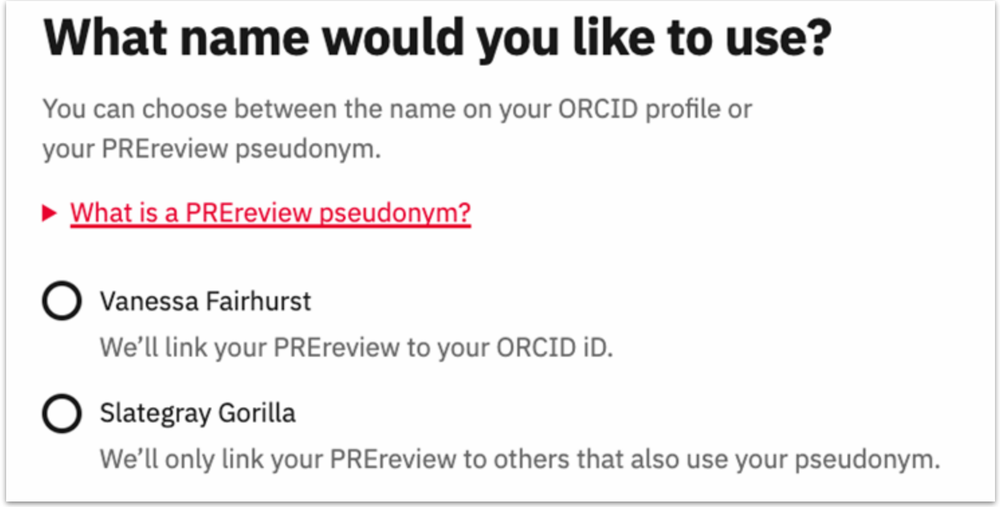
Are the conclusions supported by the data?

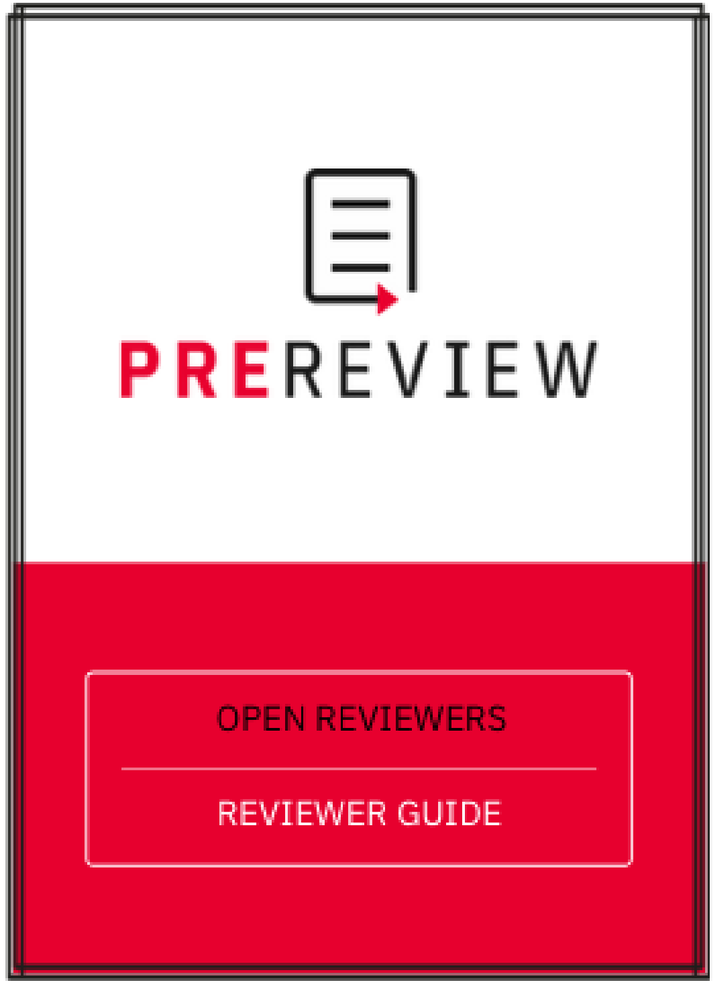
Highly supported

Interpretation of qualitative interviews were not overreaching as it was evident that

We work to make peer review safer and more constructive

- We provide training to researchers across career levels, with a specific focus on how to recognize and mitigate personal bias in peer review.
- When publishing a review, PREreviewers can opt to use a pseudonym, addressing privacy concerns while allowing us to enforce a code of conduct.

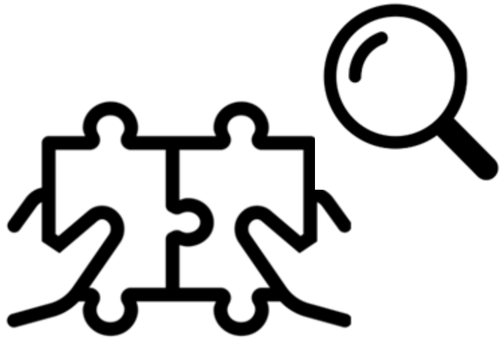




We work to break down walls

- We run Live Reviews where researchers around the world collaboratively review preprints online.
- We connect preprint authors to reviewers via our ‘Request a review’ functionality and via COAR Notify.
- We have a vibrant Slack Community with >400 members and growing.
- All developments are designed with community input and we run an annual Champions Program to further empower our community members to adapt and take forward our work.

Coming up next



Search and recommendation to improve discoverability of content and match-making

Localization and translation of our website and resources

Exploration of new reviewing audiences (*e.g.*, patients, trainees)

Moving beyond the preprint to reviewing other research outputs

PREREVIEW

TAKK!

If you'd like to get involved with opportunities to collaborate with us at PREreview, please reach out to community@prereview.org.

In the meantime, **I'm happy to answer any questions you have!**
You can also reach me at vanessa@prereview.org.

PREREVIEW

A preprint-based publishing model

November 27th, 2024

Naushin Thomson
Senior Production Assistant, eLife

The eLife model: overview

Only preprints

11,446 up to Oct 2024

Can we produce broadly useful reviews?

~1/3 reviewed

No rejection after review.

OUTPUT: Peer reviews + eLife Assessment.

Authors can correct factual errors before publication.

Every reviewed preprint is published and has a DOI.

Upon author revision, reviews and eLife assessment are updated.

VOR akin to a traditional article, cannot be sent to other Journals.

How it looks - 1

Developmental Biology, Chromosomes and Gene Expression

Complex aneuploidy triggers autophagy and p53-mediated apoptosis and impairs the second lineage segregation in human preimplantation embryos

Marius Regin, Yingnan Lei, Edouard Couvreu De Deckersberg, Charlotte Janssens, Anfien Huyghebaert, Yves Guns, Pieter Verdyck, Greta Verheyen, Hilde Van de Velde ... Claudia Spits ... show 1 more

Research Group Genetics Reproduction and Development, Faculty of Medicine and Pharmacy, Vrije Universiteit Brussel, Brussels, Belgium • Brussels IVF, Universitair Ziekenhuis Brussel, Brussels, Belgium • Vrije Universiteit Brussel (VUB), Universitair Ziekenhuis Brussel (UZ Brussel), Clinical Sciences, Research Group Genetics Reproduction and Development, Centre for Medical Genetics, Brussels, Belgium

https://doi.org/10.7554/eLife.88916.2

Reviewed Preprint
v2 • November 21, 2024
Revised by authors

Reviewed Preprint
v1 • September 8, 2023

Hide previous version

Cite Share

Full text | Figures and data | Peer review

eLife Assessment

This study provides **valuable** insights into the cellular responses to complex aneuploidy in human preimplantation embryos. The evidence supporting the claims of the authors is now **convincing** after addressing previous concerns. This work will be of interest to embryologists, geneticists and scholars working on reproductive medicine by increasing our understanding of how human embryos respond to chromosomal abnormalities.

https://doi.org/10.7554/eLife.88916.2.sa3

Read more about this assessment

Stage in the peer review process

eLife Assessment: curation that sits above the abstract

Public peer reviews available within the eLife website

How it looks - 2

Full text | Figures and data | Peer review

eLife Assessment

This study provides **valuable** insights into the cellular responses to complex aneuploidy in human preimplantation embryos. The evidence supporting the claims of the authors is now **convincing** after addressing previous concerns. This work will be of interest to embryologists, geneticists and scholars working on reproductive medicine by increasing our understanding of how human embryos respond to chromosomal abnormalities.

https://doi.org/10.7554/eLife.88916.2.sa3

Significance of findings

Valuable: Findings that have theoretical or practical implications for a subfield

Landmark | Fundamental | Important | **Valuable** | Useful

Strength of evidence

Convincing: Appropriate and validated methodology in line with current state-of-the-art

Exceptional | Compelling | **Convincing** | Solid | Incomplete | Inadequate

During the peer-review process the editor and reviewers write an eLife assessment that summarises the significance of the findings reported in the article (on a scale ranging from landmark to useful) and the strength of the evidence (on a scale ranging from exceptional to inadequate). Learn more about eLife assessments

Show less

Reviewed Preprint
v2 • November 21, 2024
Revised by authors

Reviewed Preprint
v1 • September 8, 2023

Hide previous version

Cite | Share

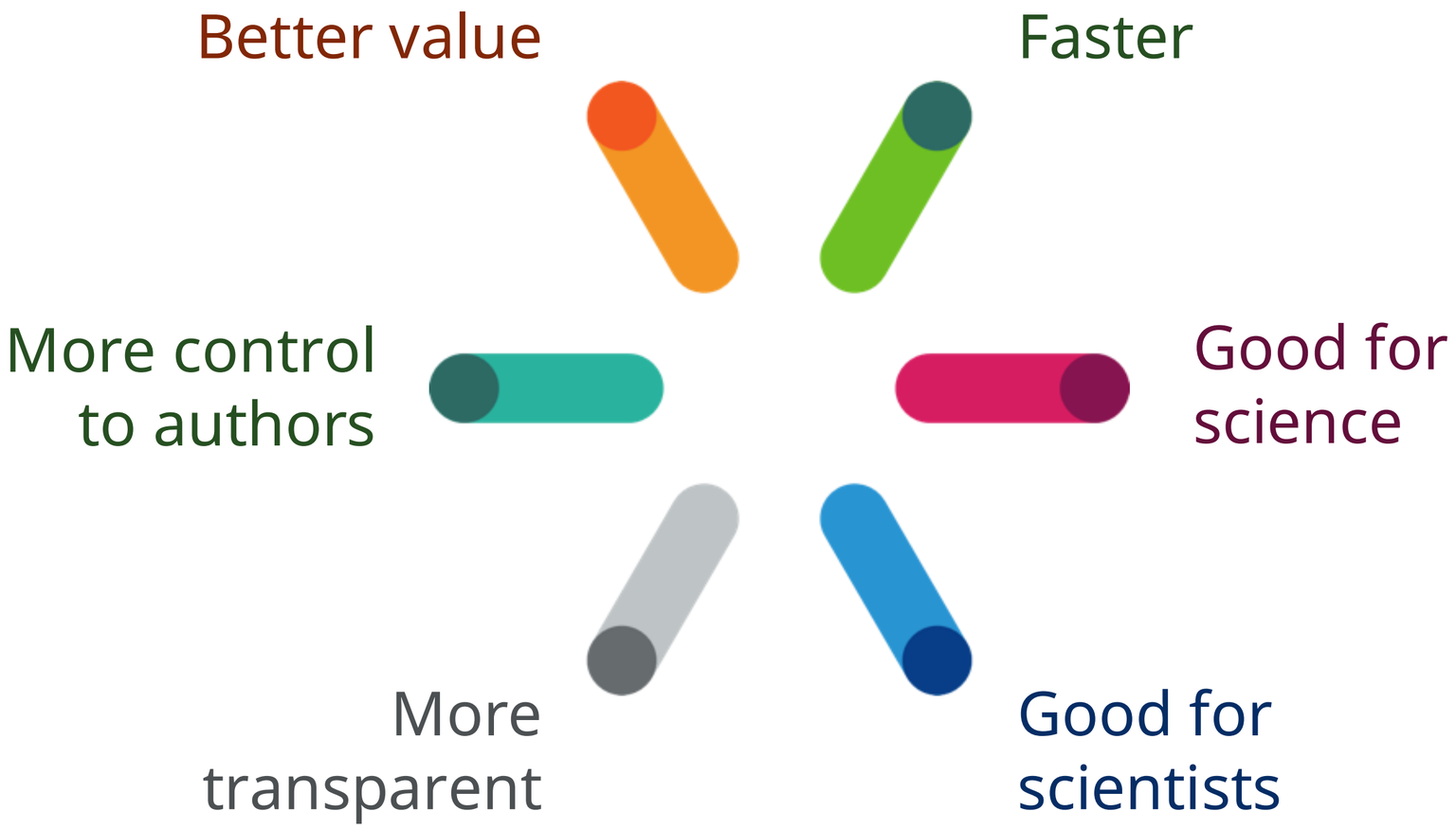
Click for more/less info

Stage in the peer review process (remains on the side)

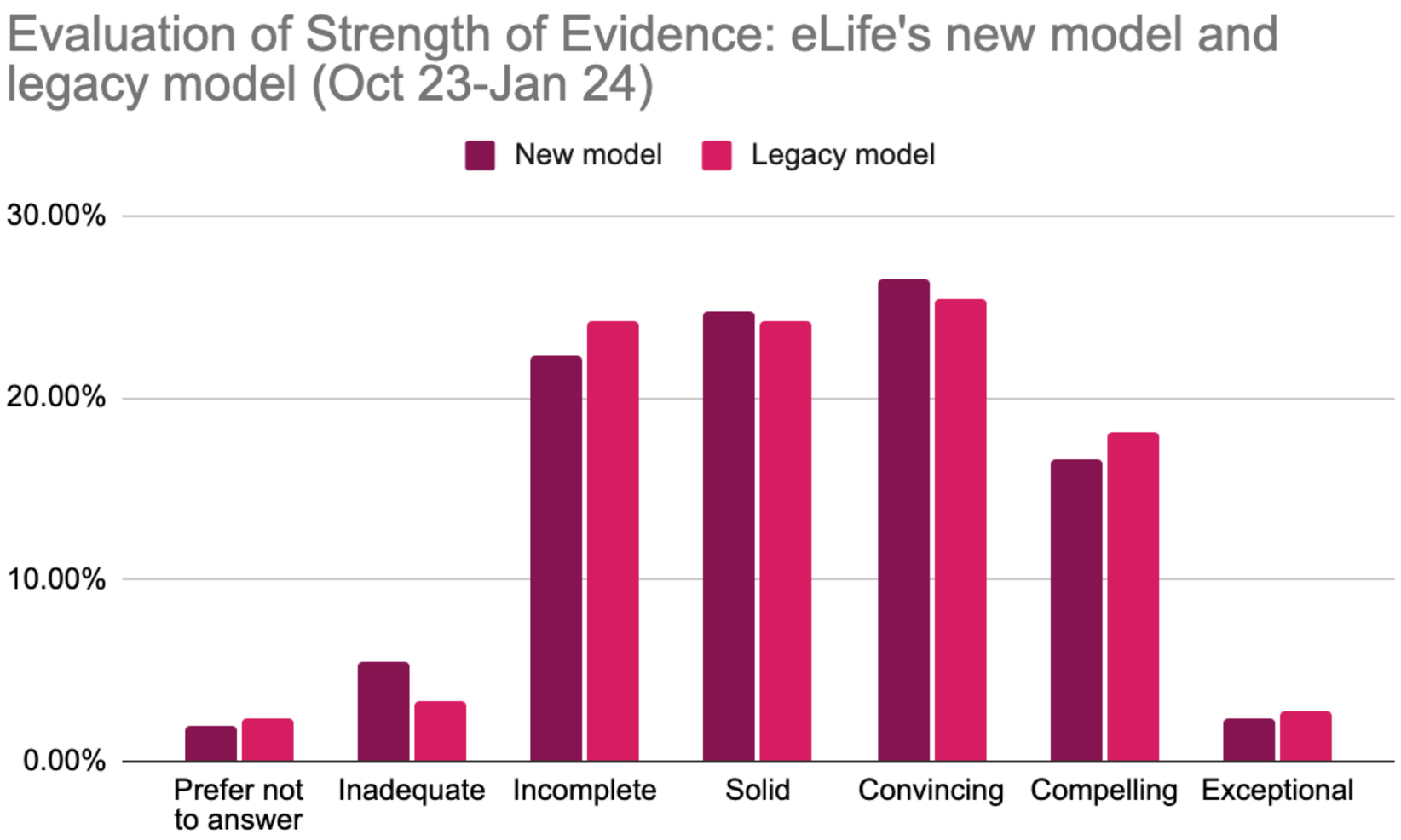
eLife Assessments: common vocabulary

Significance of Findings	Strength of Evidence
Landmark: Findings with profound implications and widespread influence, which are likely to be of broad interest.	**Exceptional:** Exemplary use of existing and new methods that establishes new standards for a field.
Fundamental: Findings that substantially advance understanding of important research questions.	**Compelling:** High quality data and analyses, more rigorous than the current state-of-the-art.
Important: Findings with theoretical or practical implications for multiple subfields.	**Convincing:** Appropriate and validated methodology in line with current state-of-the-art, with good support for the claims.
Valuable: Findings with theoretical or practical implications for a subfield.	**Solid:** Uses appropriate methodology, with minor weaknesses.
Useful: Findings with focused importance and scope.	**Incomplete:** Methodology provides some support for the main claims with some limitations.
	Inadequate: Methodology does not provide support for the primary claims.

Benefits of the model



Quality of submissions is similar



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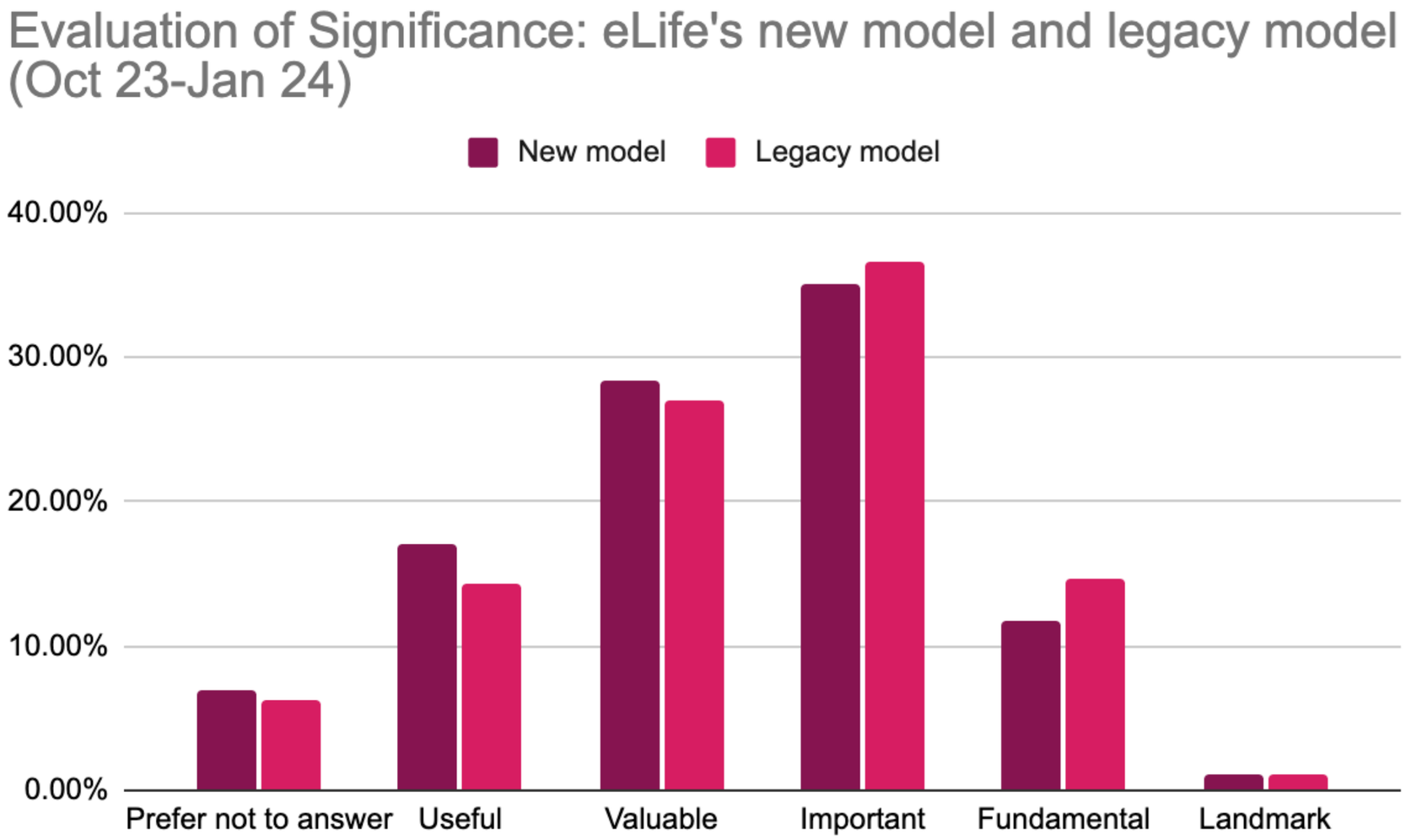

Public support

eLife's funders as well as other funding bodies and research institutions support the use of reviewed preprints in research assessment

Howard Hughes Medical Institute

Champalimaud Foundation

MAX PLANCK GESELLSCHAFT

BILL & MELINDA GATES foundation

wellcome

RLUK Research Libraries UK

cOAlition S
Making full and immediate Open Access a reality

CHEN TIANQIAO & CHRISSY INSTITUTE

Knut and Alice Wallenberg Foundation

University of BRISTOL

University of Bristol
Library Services

UNIVERSITY OF CAMBRIDGE

Thank you!

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REVIEWER CREDITS

Transparency in Peer Review

Tromsø, November 27, 2024
Dr. Sven Fund

What is the problem?

REVIEWER CREDITS

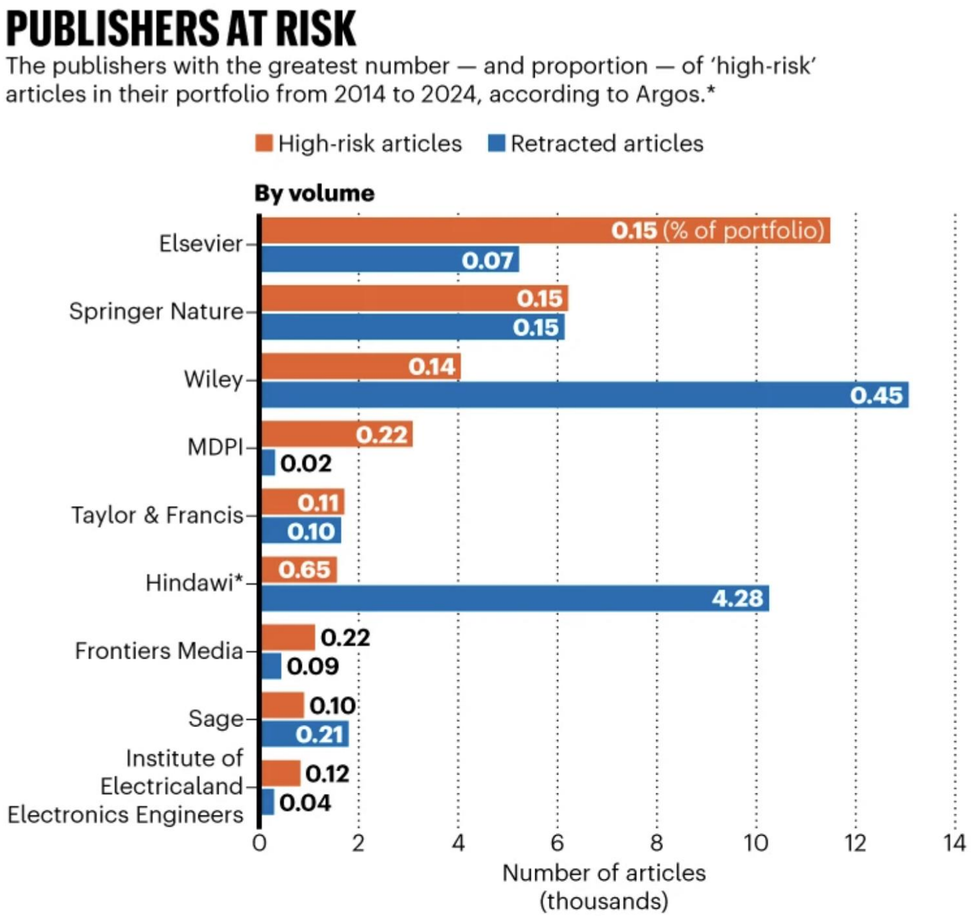
- Open Access has become the new normal
- Vast corpora of content and to quite some extend also metadata are freely available
- However, processes in academic publishing are still pretty pre-digital
  - Stand-alone systems, no API-economy
  - Manual work-arounds
  - Inconsistent outsourcing to multiple companies per partners
- To not only make content open, a focus on processes, transparency and accessibility is key

Open Access can have a positive impact on Research Integrity – very much opposite to the current discourse

What is the problem?

REVIEWER CREDITS

- Technology democratizes – and multiplies entry points for fraud
- Technology improves ease of use – also for bad actors
- Technology reveals historical fraud far more systematically then ever before
- All publishers are impacted, no matter what size
- Volume puts pressure on an industry that is not growing
- An illegitimate shadow publishing industry has developed



Source: nature 2024, https://www.nature.com/articles/d41586-024-03427-w

Academic publishing is not well suited for an arms race with tech players, and it does not led by digital criteria yet

What needs to be done?

1 Establish entry criteria

No reviews from untrained reviewers
Standardize review reports

2 Reduce churn

Exact targeting, beyond just keywords
Make full use of AI-powered assistants

3 Create openness

Make content and metadata openly available

4 Understand and utilize individuals' motivation

Share
Gamify

5 Make it a community experience

Share insights cross-publisher

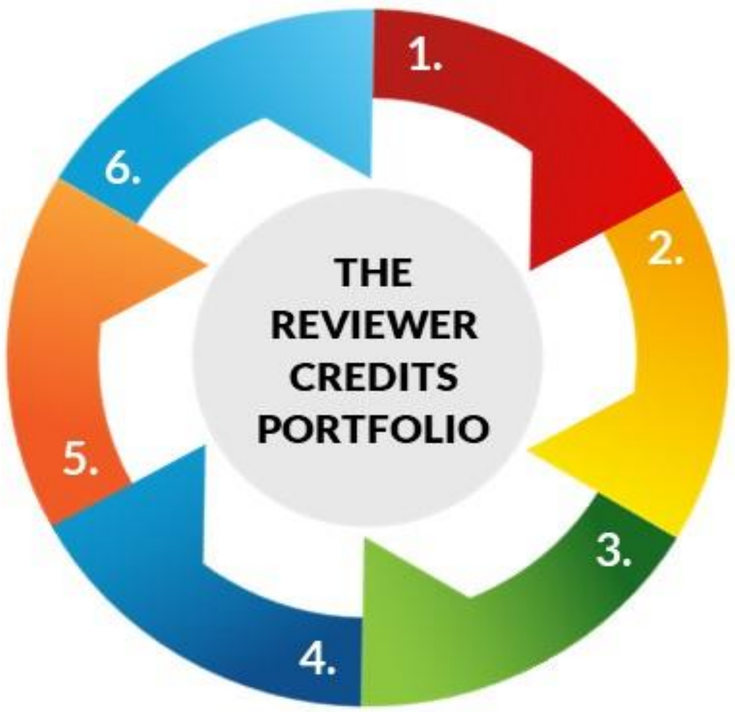
Focus on persona instead of a person is of the essence, and it is possible

REVIEWER CREDITS

Reviewer Insights Dashboard
Get real-time insights on reviewer diversity, integrity, and performance, helping publishers boost engagement, training, and compliance.

Reviewer Rewarding
Reward your reviewers with Credit Points redeemable against services available at unique discounts. We can also provide monetary incentives

Reviewer Certification
Recognize your peer reviewers' extensive efforts with a cross-publisher certification



Reviewer Identity
to protect the integrity of your publications with ID, personal and academic email, and biometric verification of your peer reviewers.

Reviewer Finder
Find and scout best-fit peer reviewers efficiently and effectively

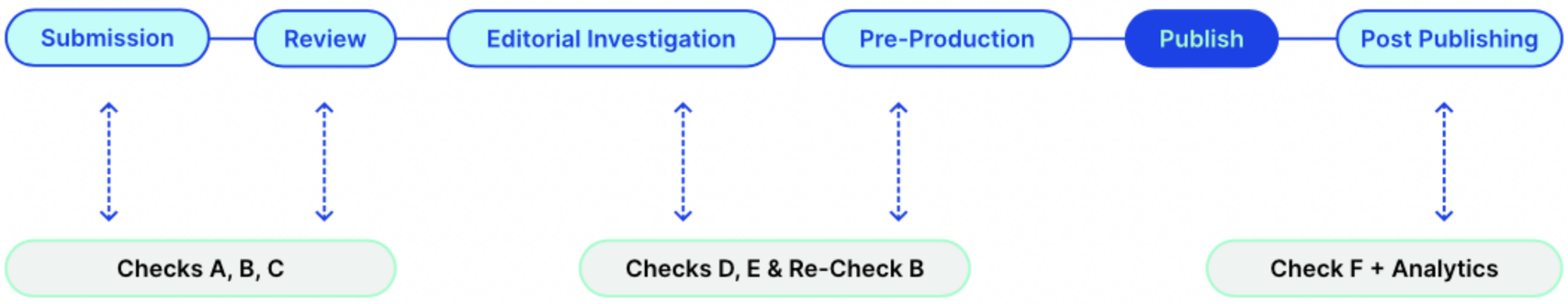
Reviewer Network
Tap into a resource of ready-to-review researchers worldwide to enhance your publication cycle and impact

Multifactored solutions to complex problems: researcher orientation, standardization, incentives and – technology

Towards true digitization

REVIEWER CREDITS

EXAMPLE: MORRESSIER

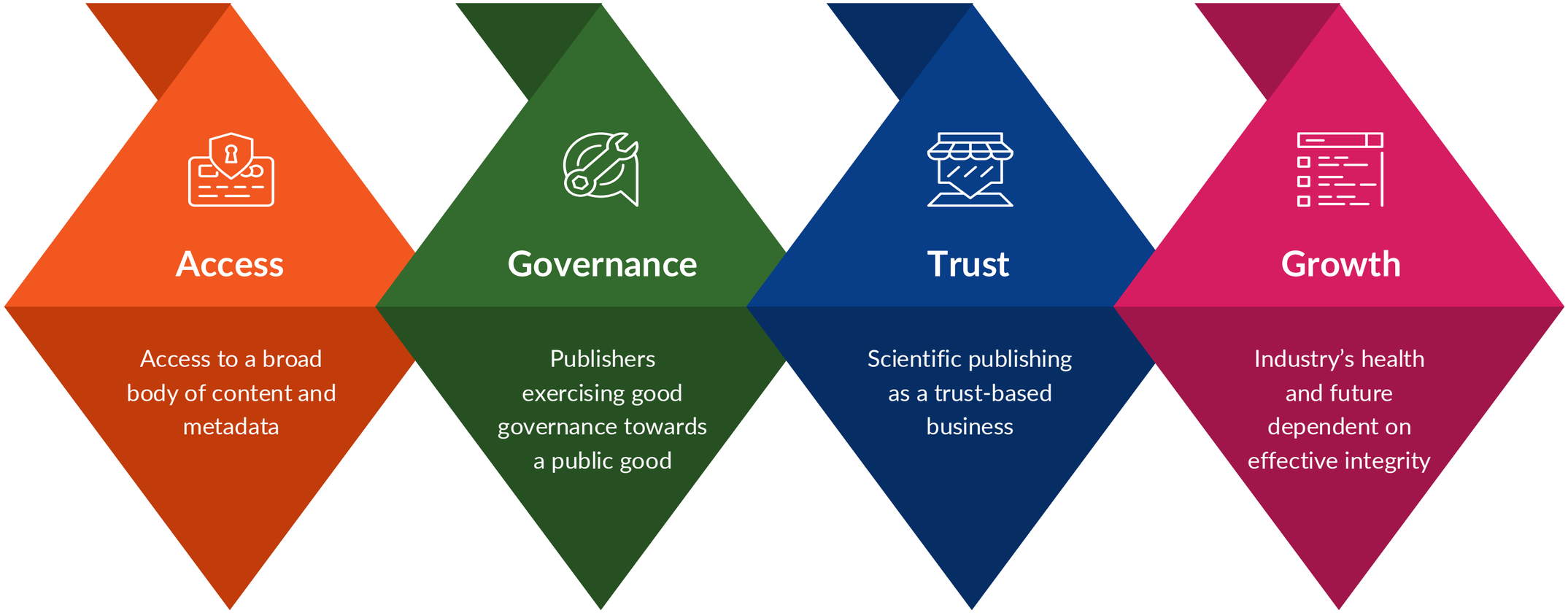


- Standardization of workflows
- Consistent, quality-controlled processes (instead of a myriad of outsourcing relationships)
- Processes defined by technology and based on APIs

Publishing is under-invested in technology, which is reflected in a high number of broken processes

Building blocks at the interface of Open Access and Research Integrity

REVIEWER CREDITS



REVIEWER CREDITS

Thank You

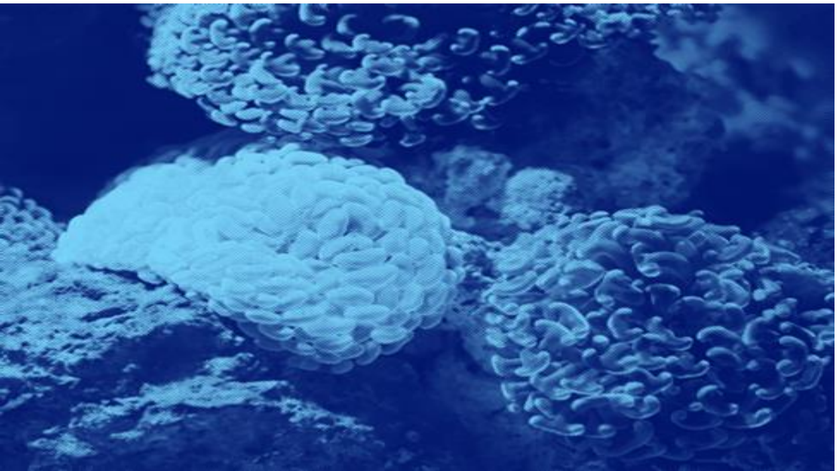
sven.fund@reviewercredits.com
www.reviewercredits.com

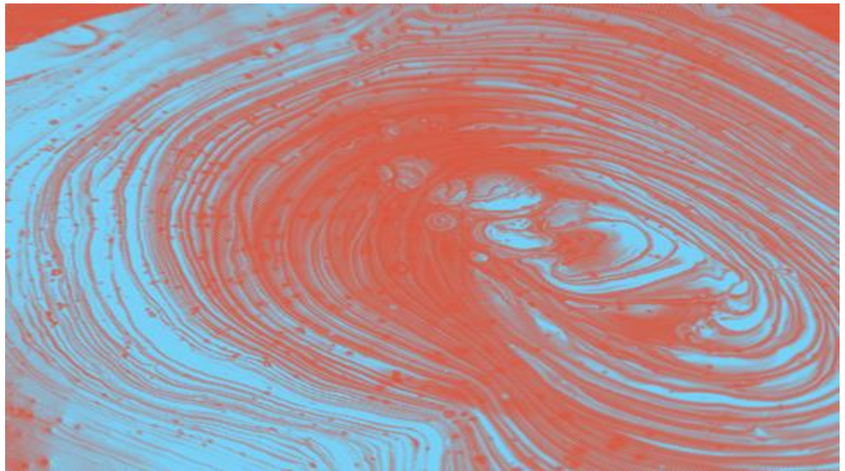
Open Science in Practice: The Evolution and Impact of Published Peer Review History

Rebecca Kirk

Associate Editorial Director, PLOS

27 November 2024





PLOS is a non-profit, mission-led organization

We believe that Open Science is a way to achieve *better* science.

We work to increase Open Science practices in our journals and beyond, and monitor the prevalence and effects of these practices.

Examples of “closed science”

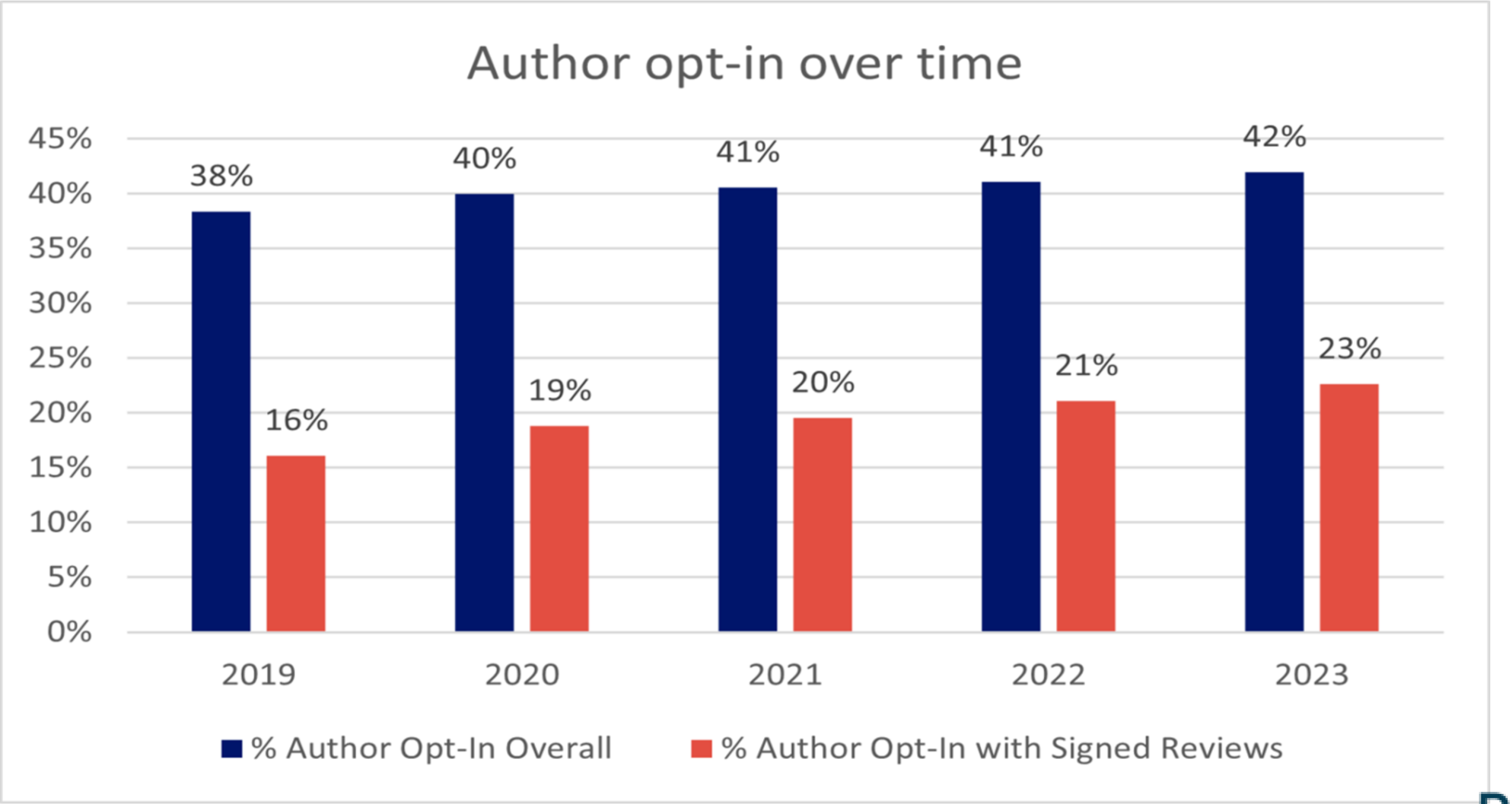
- Research published in paywalled journals
- Data supporting scientific results being unavailable
- Software, source code, workflows and protocols being unknown or inaccessible
- Favoring knowledge produced in developed countries
- Science that is inaccessible to communities that would benefit from it

> In contrast to closed science systems, open science sets new standards that ensure that, through increased availability of data, tools and processes, scientific practices are reproducible, transparent, inclusive and collaborative.

An introduction to the UNESCO Recommendation on Open Science
https://unesdoc.unesco.org/ark:/48223/pf0000383771

Published Peer Review History (PPRH)

Published Peer Review History (PPRH)



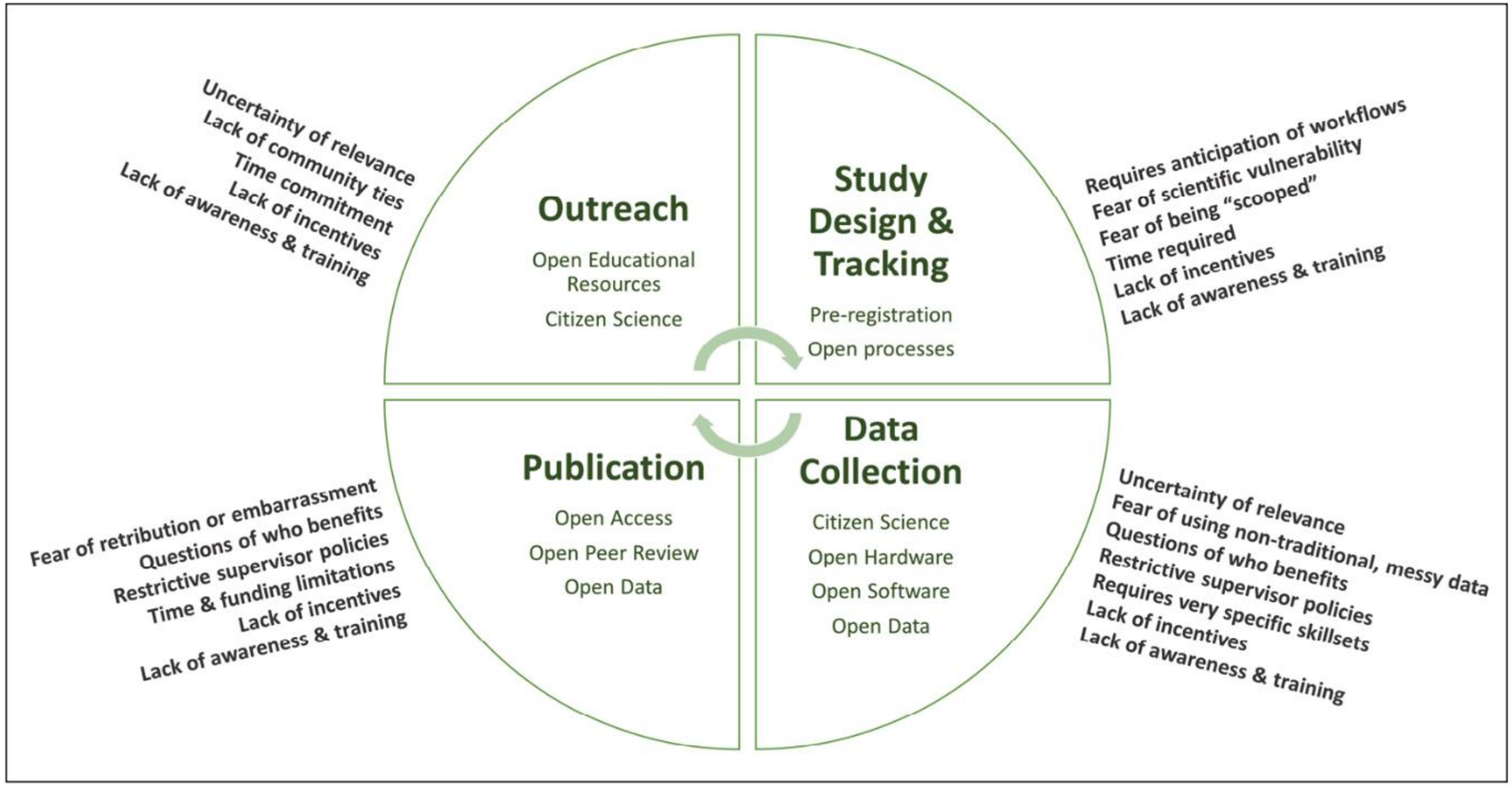
https://theplosblog.plos.org/2024/01/four-years-of-published-peer-review-history/

Identifying barriers

Gownaris, NJ, Vermeir, K, Bittner, M-I, Gunawardena, L, Kaur-Ghumaan, S, Lepenies, R, Ntsefong, GN and Zakari, IS. 2022. Barriers to Full Participation in the Open Science Life Cycle among Early Career Researchers. Data Science Journal, 21: 2, pp. 1–15.
DOI: https://doi.org/10.5334/dsj-2022-002

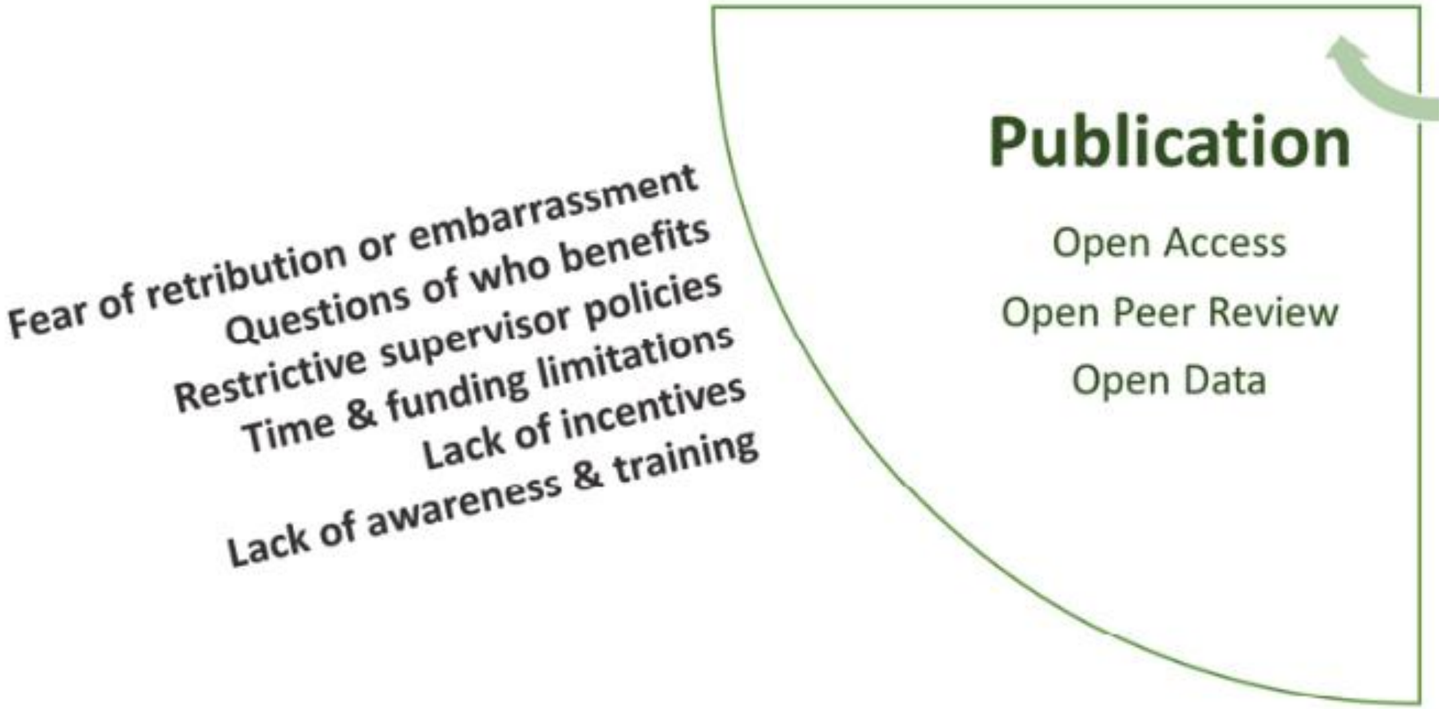
"The most frequently discussed barriers across the OS life cycle were a lack of awareness and training, prohibitively high time commitments, and restrictions and/or a lack of incentives by supervisors."

Barriers to open science practices



Gownaris, NJ, Vermeir, K, Bittner, M-I, Gunawardena, L, Kaur-Ghumaan, S, Lepenies, R, Ntsefong, GN and Zakari, IS. 2022. Barriers to Full Participation in the Open Science Life Cycle among Early Career Researchers. Data Science Journal, 21: 2, pp. 1–15. DOI: https://doi.org/10.5334/dsj-2022-002

Barriers to open science practices



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DOI: https://doi.org/10.5334/dsj-2022-002

Barriers to open science practices

PLOS BIOLOGY

OPEN ACCESS

PERSPECTIVE

Open peer review urgently requires evidence: A call to action

Tony Ross-Hellauer, Lex M. Bouter, Serge P. J. M. Horbach

Published: October 4, 2023 • https://doi.org/10.1371/journal.pbio.3002255

Article | Authors | Metrics | Comments | Media Coverage

Abstract

References

Reader Comments

Open Peer Review is gaining prominence in attention and use, but to responsibly open up peer review, there is an urgent need for additional evidence. Here, we propose a preliminary research agenda and issue a call to action.

Box 1. Key priorities for research on Open Peer Review

How do variants of OPR affect the content and quality of the review process?

Addressing this question requires either large-scale observational studies or, when feasible, randomized controlled trials across multiple epistemic communities, publishing contexts, and stakeholders. Because these studies are both resource intensive and dependent on the availability of sufficient data, we propose both funding agencies and scholarly communication stakeholders (e.g., publishers, preprint servers, and peer review platforms) to collectively engage in this endeavor.

What are the implications of OPR elements for reviewers, authors, and other stakeholders involved in the review process?

Due to a lack of evidence either way, no definitive conclusions can yet be drawn regarding the existence or consequences of backbiting or blunted criticisms, e.g., in models with Open Identities. As such, fears have a major role in perceptions of OPR; finding out if and how they are substantiated by evidence should be a priority. In addition, the effect of OPR elements on power imbalances requires in-depth analysis, as demographics do seem to have a heavy role in who opts to engage with OPR models.

How do models of OPR apply to review of objects other than traditional journal articles?

This includes preprint peer review and publish–review–curate models but also review of objects such as datasets, software/code, and monographs, as well as review processes in funding and hiring contexts. As many of these contexts and models are likely to gain prominence in the future, and some of them (e.g., preprint peer review) use certain elements of OPR more or less by default, a better understanding of the merits and consequences of OPR in these settings is urgently needed.

Ross-Hellauer T, Bouter LM, Horbach SPJM (2023) Open peer review urgently requires evidence: A call to action. PLOS Biology 21(10): e3002255. https://doi.org/10.1371/journal.pbio.3002255.

Redefining Publishing:

PLOS, supported by the Gordon and Betty Moore Foundation & Robert Wood Johnson Foundation, is launching an important new initiative

PLOS is embarking on a pioneering R&D project to address two significant barriers in Open Science:

1. Lack of recognition for contributions beyond the article—such as data, code, and methods.

2. Lack of affordability—current article processing charges (APCs) prevent many researchers from participating in Open Access.

We are working closely with researchers, funders, institutional leaders, and librarians to ensure that their needs and voices are central to the development and implementation of this initiative.

Open Science: more than an article

Published Peer Review

Our modula proach to published peer review that enc and reviewers to reveal the expert pe hape published research.

Learn more

Protocols

O ip with protocols.io e a ffectively sha ls to c

9/21 STEPS COMPLETED

Data Policy

Our data policy underlies our commitment to Open Science and ensures your research

e

Credit

CRediT and ORCID ensure that authors reviewers can easily take credit and b recognized for their individual research contributions.

Learn more

P osting pr fe eive credit for so nership with bioRx pos iences preprints easy a con

Le more

Open m nce research integrity, understanding ducibility and reuse. Sharing more resea more broadly creates new opportunities for progress.

Learn more

DIGITAL KNOWLEDGE STACK

So, can open science help address current issues in the research and scholarly communications ecosystem?

YES, but …

CURRENT ISSUES

- Subscription paywalls, inequities in access to knowledge
- Scientific fraud or flawed research
- General systemic inefficiencies and waste, systemic bias

ENABLING OPEN SCIENCE

- Greater awareness and capacity building
- Increased recognition and incentives for all open science contributions
- More research to understand the barriers to adoption

PLOS

Thank you