

Open Research & trends towards transparent peer review

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F1000



Taylor & Francis

Agenda



1. Introduction
2. Publishers in a world of Open Science
3. Challenges in peer review
4. Trends towards greater transparency in peer review
5. Q&A

Introduction



- Scholarly publisher offering **open research publishing model**:
 - Open Access
 - Open data/research code/resources
 - Transparent peer review - post-publication
 - Diversity of article options
- **Portfolio of publishing venues:**
- Part of Taylor & Francis Group
- Signatory to DORA & committed to responsible research publishing



Publishing portfolio



Subject focused venues



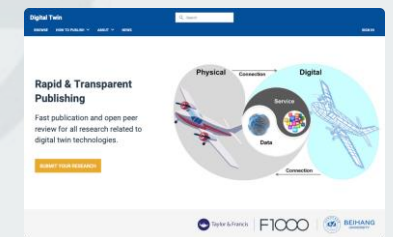
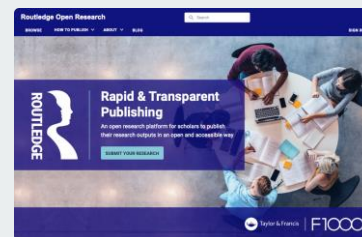
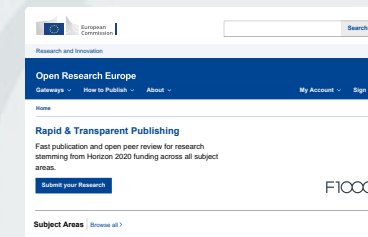
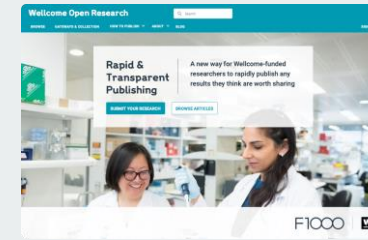
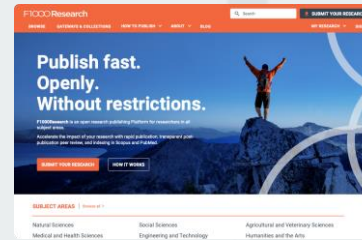
Partner venues



All with unique ISSN and indexed like a journal



All provide F1000 open research publishing model



Discover F1000's [publishing venues](#)

Agenda

1. Introduction
- 2. Publishers in a world of Open Science**



Open Science: a global movement

Open Science has the potential of making the scientific process more transparent, inclusive and democratic.

It is increasingly recognized as a **critical accelerator for the achievement of the United Nations Sustainable Development Goals** and a true game changer in bridging the science, technology and innovation gaps and fulfilling the human right to science.

- scientific knowledge openly available, accessible and reusable for everyone **[DISCOVERABILITY]**



Drive to discoverability: pushes & pulls

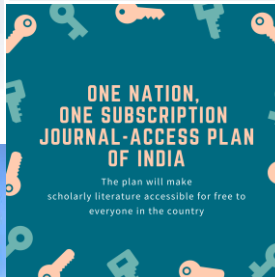
Technology & Services



Science Policy



NHMRC's revised Open Access Policy released



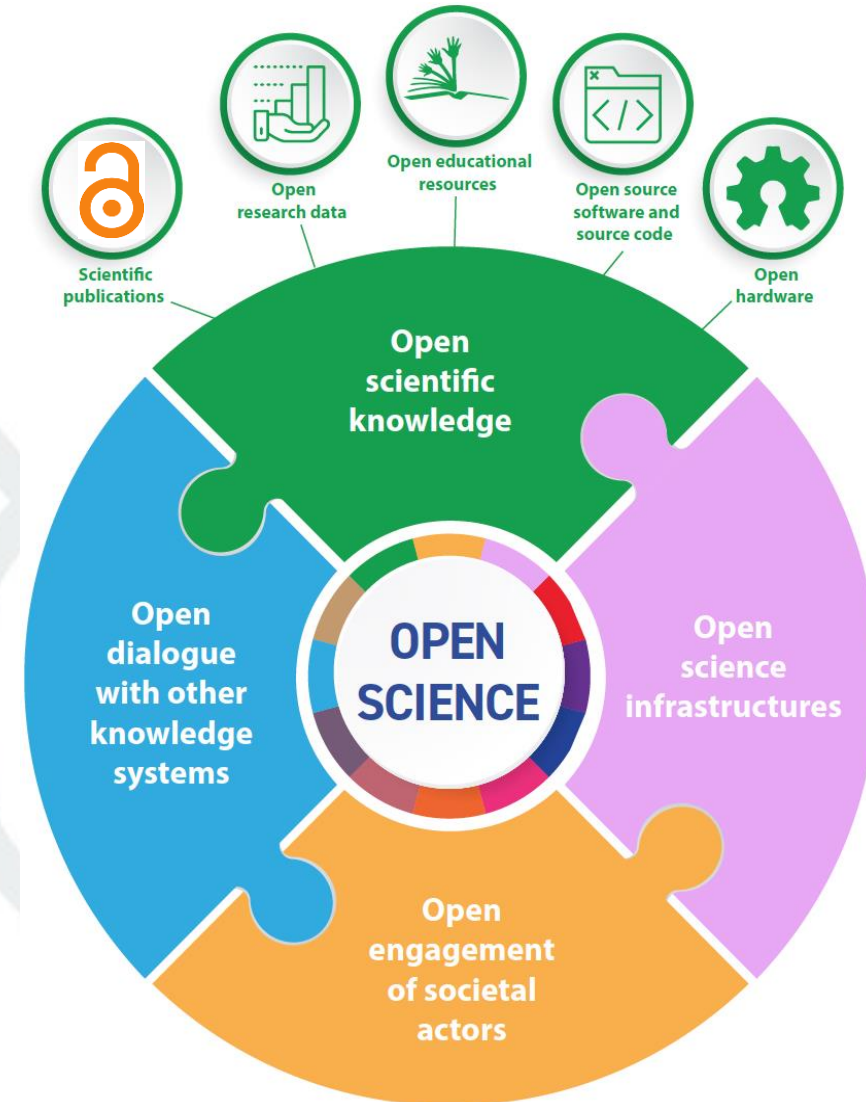
Value of Open



Source: <https://www.jisc.ac.uk/guides/an-introduction-to-open-access>

What can publishers do to support open science?

1. Enable **open scientific knowledge**:
 - Open Access – *permissive licenses for use, reuse*
 - Open research data open & FAIR
 - Open research software, code & other objects
2. Enable **Open dialogue & Open engagement – Citizen Science**
3. **Discoverability, provenance & trust**:
 - validation of sources/provenance
 - contributor roles



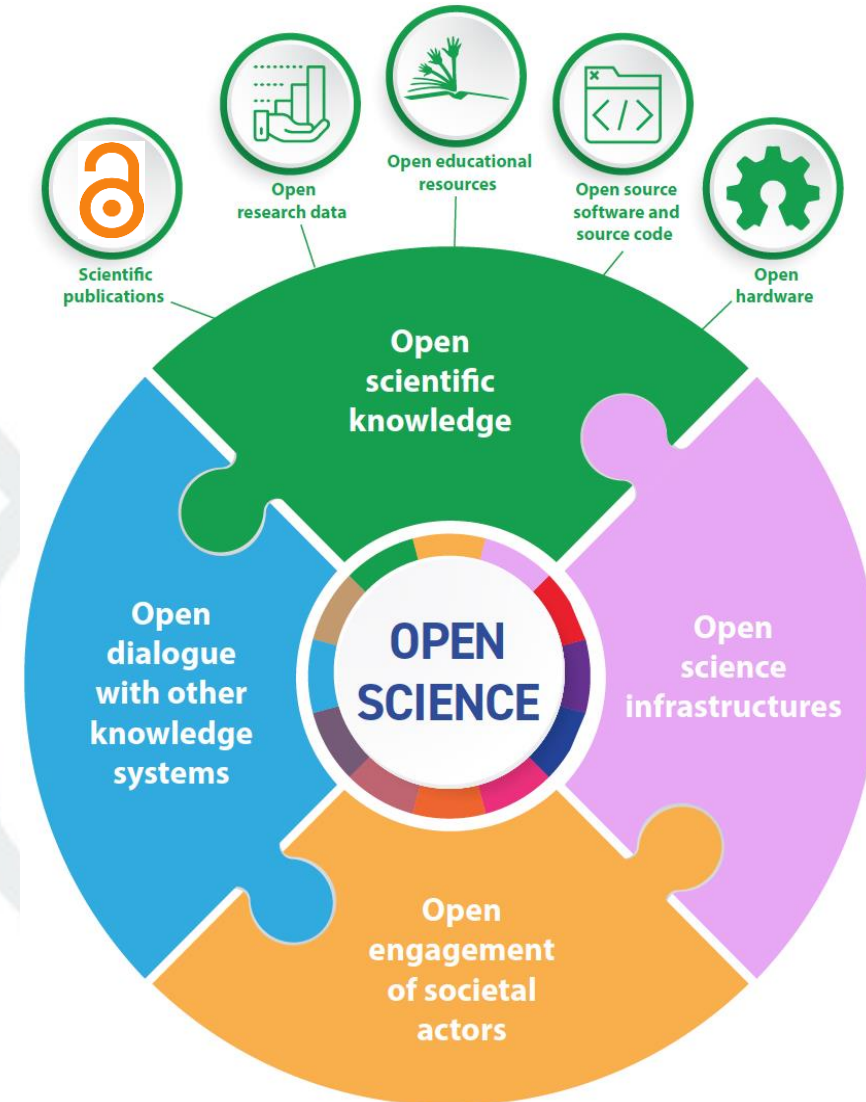
Maximising discoverability, provenance & trust

- Persistent identifiers ('PIDs') & descriptors in article/research object meta-data
 - **DOIs** – for articles, data, code, research resources ...
 - **ORCID IDs** – for authors & reviewers
 - **Contributor roles (CRediT*)**
 - **Funding & grant** information (Crossref Funding registry**)
 - **Institution** data ('Ringgold'/ROR)



What can publishers do to support open science?

1. Enable **open scientific knowledge**:
 - Open Access – *permissive licenses for use, reuse*
 - Open research data open & FAIR
 - Open research software, code & other objects
2. Enable **Open dialogue & Open engagement** – *Citizen Science*
3. **Build in mechanisms to enable trust**:
 - validation of sources/provenance
 - contributor roles
 - ***open evaluation/transparent peer review***



Agenda

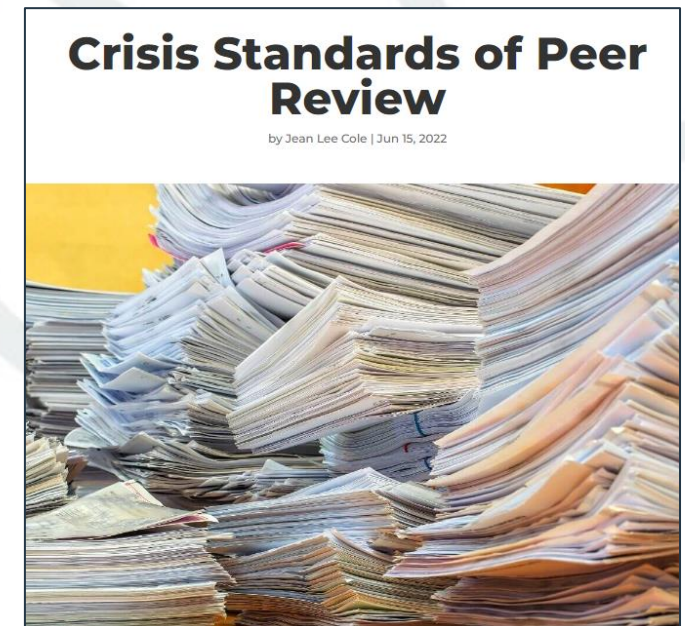


1. Introduction
2. Publishers in a world of Open Science
3. Challenges in peer review

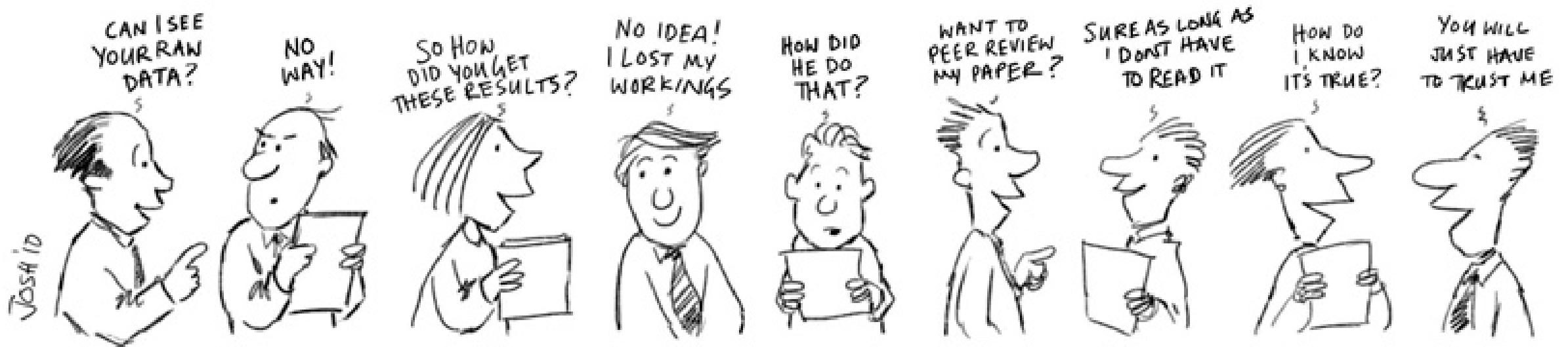
Challenges of peer review

It is highly valued BUT

1. Large (increasing) **burden** on reviewers' & Editors' time
2. Potential for **bias** and **process opaque** ('black box')
– *selection, response, quality of review upon which decisions made*



NO TRANSPARENCY NO CONSENSUS



Challenges of peer review

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1. Large (increasing) **burden** on reviewers' & Editors' time
2. Potential for **bias** and **process opaque** ('black box')
– *selection, response, quality of review upon which decisions made*
3. **Wasteful** across research system
4. Largely **unrecognized**, lack of incentives
5. **Fit for purpose** for today's science?



"The peer review system is satisfactory during quiescent times, but not during a revolution in a discipline such as astrophysics, when the establishment seeks to preserve the status quo."

Hannes Alfvén (1908-1995)
awarded Nobel Prize for physics 1970



Challenges of peer review

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3. **Wasteful** across research system
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5. **Fit for purpose** for today's science?
6. **Increasing research integrity challenges ...**



Increasing complexity of research integrity issues

- Paper Mills (and fake authorship)
- Image manipulation
- Data manipulation
- Generative AI
- Duplicate submissions
- Reproducibility crisis
- Duplicate peer review

Frontiers retracts nearly 40 papers linked to ‘authorship-for-sale’

NEWS | 28 September 2021

Publishers unite to tackle doctored images in research papers

Eight major publishers have issued joint guidelines for how journal editors can spot and deal with suspicious images or data.

Humans

The replication crisis has spread through science – can it be fixed?

It started in psychology, but now findings in many scientific fields are proving impossible to replicate. Here's what researchers are doing to restore science's reputation

By [Clare Wilson](#)

📅 6 April 2022

Materials science journal withdraws 500 papers from fake conferences

Using AI, Web of Science has delisted 50 prominent academic journals. What this means for researchers


Among those delisted by the research database is MDPI's International Journal of Environmental Research and Public Health, 2nd-largest in world in terms of articles published per year.

Calls for experimentation in publishing peer review

- Tailoring & selection precision
- Diversity
- Training & mentoring
- Cross-publisher sharing /portability
- Recognition, credit & reward for reviewers
- Technology to improve effectiveness & make it easier to do
- **Transparency**



Calls for experimentation in grant peer review



What do we know about grant peer review in the health sciences?

An updated review of the literature and six case studies

Susan Guthrie, Ioana Ghiga, Steven Wooding

“As success rates fall – as has been happening with funders worldwide – peer review is pushed more out of its comfort zone.”



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NEW RESEARCH IN Physical Sciences Social Sciences

Low agreement among reviewers evaluating the same NIH grant applications

Elizabeth L. Pier, Markus Brauer, Amarette Filut, Anna Kaatz, Joshua Raclaw, Mitchell J. Nathan, Cecilia E. Ford and Molly Carnes

PNAS March 5, 2018. 201714379; published ahead of print March 5, 2018. <https://doi.org/10.1073/pnas.1714379115>
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eLife. 2016; 5: e13323. PMCID: PMC4769156
Published online 2016 Feb 16. doi: [10.7554/eLife.13323](https://doi.org/10.7554/eLife.13323)

NIH peer review percentile scores are poorly predictive of grant productivity

[Ferric C Fang](#)^{1,*}, [Anthony Bowen](#)^{2,*} and [Arturo Casadevall](#)^{3,*}

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Source: RAND Europe (2017); Guthrie & Wooding (23/3/2017) <http://www.researchresearch.com/news/article>

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Definitions of peer review ...



IDENTIFY TRANSPARENCY	WHO REVIEWER INTERACTS WITH	WHAT INFORMATION ABOUT THE REVIEW IS BEING PUBLISHED	IS THERE POST PUBLICATION COMMENTING
All Identities Visible	Editors	None	Open
Single Anonymized	Other Reviewers	Review Summaries/Reports	On Invitation
Double Anonymized	Authors	Submitted Manuscripts	
Triple Anonymized		Author/Reviewers/Editors can opt in to identify	

<https://www.stm-assoc.org/standards-technology/peer-review-taxonomy-project>

Types of Peer Review

- 
ANONYMOUS
Single Anonymized: Reviewers know the authors' identities, but reviewer names are protected.
Double Anonymized: Reviewer and author names are protected.
- 
SIGNED
 Reviewers sign their comments. Authors receive reviewer names in the decision letter.
- 
COLLABORATIVE
 Reviewers collaborate and submit joint comments, or in some cases confer with authors and editors during the review process.
- 
PORTABLE
 Reviewers are sought by an organization or journal and shared with any journals that require them later on.
- 
PUBLISHED
 Reviewer comments and/or names are published with the article or preprint.
- 
POST-PUBLICATION
 After a manuscript is posted the community reviews the research in an open forum. Reviewer names are usually published with their comments.

 plos.org/resources/for-reviewers/



<https://plos.org/resource/open-peer-review/>



Definitions of Open Peer Review ...



“Open peer review is an umbrella term for a number of overlapping ways that peer review models can be adapted in line with the aims of Open Science, including making reviewer and author identities open, publishing review reports and enabling greater participation in the peer review process.”

F1000Research F1000Research 2017, 6:588 Last updated: 14 SEP 2023

[Check for updates](#)

SYSTEMATIC REVIEW

REVISED What is open peer review? A systematic review [version 2; peer review: 4 approved]

Tony Ross-Hellauer

Göttingen State and University Library, University of Göttingen, Göttingen, 37073, Germany

v2 First published: 27 Apr 2017, 6:588
<https://doi.org/10.12688/f1000research.11369.1>
Latest published: 31 Aug 2017, 6:588
<https://doi.org/10.12688/f1000research.11369.2>

Abstract
Background: “Open peer review” (OPR), despite being a major pillar of Open Science, has neither a standardized definition nor an agreed schema of its features and implementations. The literature reflects this, with numerous overlapping and contradictory definitions. While for some the term refers to peer review where the identities of both author and reviewer are disclosed to each other, for others it signifies systems where reviewer reports are published alongside articles. For others it signifies both of these conditions, and for yet others it describes systems where not only “invited experts” are able to comment. For still others, it includes a variety of combinations of these and other novel methods.
Methods: Recognising the absence of a consensus view on what open peer review is, this article undertakes a systematic review of definitions of “open peer review” or “open review”, to create a corpus of 122 definitions. These definitions are systematically analysed to build a coherent typology of the various innovations in peer review signified by the term, and hence provide the precise technical definition currently lacking.
Results: This quantifiable data yields rich information on the range and extent of differing definitions over time and by broad subject area. Quantifying definitions in this way allows us to accurately portray exactly how ambiguously the phrase “open peer review” has been used thus far, for the literature offers 22 distinct configurations of seven traits, effectively meaning that there are 22 different definitions of OPR in the literature reviewed.
Conclusions: I propose a pragmatic definition of open peer review as an umbrella term for a number of overlapping ways that peer review models can be adapted in line with the aims of Open Science, including making reviewer and author identities open, publishing review reports and enabling greater participation in the peer review process.

Keywords
open peer review, Open Science, scholarly communication, research evaluation, publishing

Open Peer Review

Approval Status ✓✓✓✓

	1	2	3	4
version 2 (revision) 31 Aug 2017	✓ view	✓ view	✓ view	✓ view
version 1 27 Apr 2017	✓ view	? view	? view	? view

1. **Richard Walker** , Swiss Federal Institute of Technology in Lausanne, Geneva, Switzerland


2. **Theodora Bloom** , The BMJ, London, UK

3. **Bahar Mehmani** , RELX Group, Amsterdam, The Netherlands

4. **Emily Ford** , Portland State University, Portland, USA

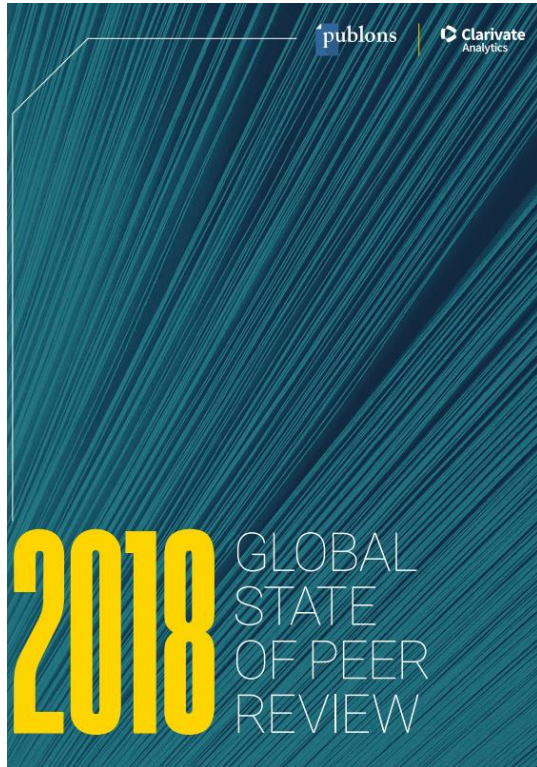
Any reports and responses or comments on the article can be found at the end of the article.

What is the value of Open Peer Review (OPR)?

1. Provides added value and context to research output
2. Training in a vital skill for a research career (*'how to review'*)
3. Easy route to provide credit for reviewers' work 
4. Increasing evidence that OPR improves quality of reviews:
 - **constructive feedback**
 - **access to comments on all parts of article** (e.g. methods; figures/data)
 - **thoroughness** - inclusion of substantiating evidence
5. Supports accountability & research integrity

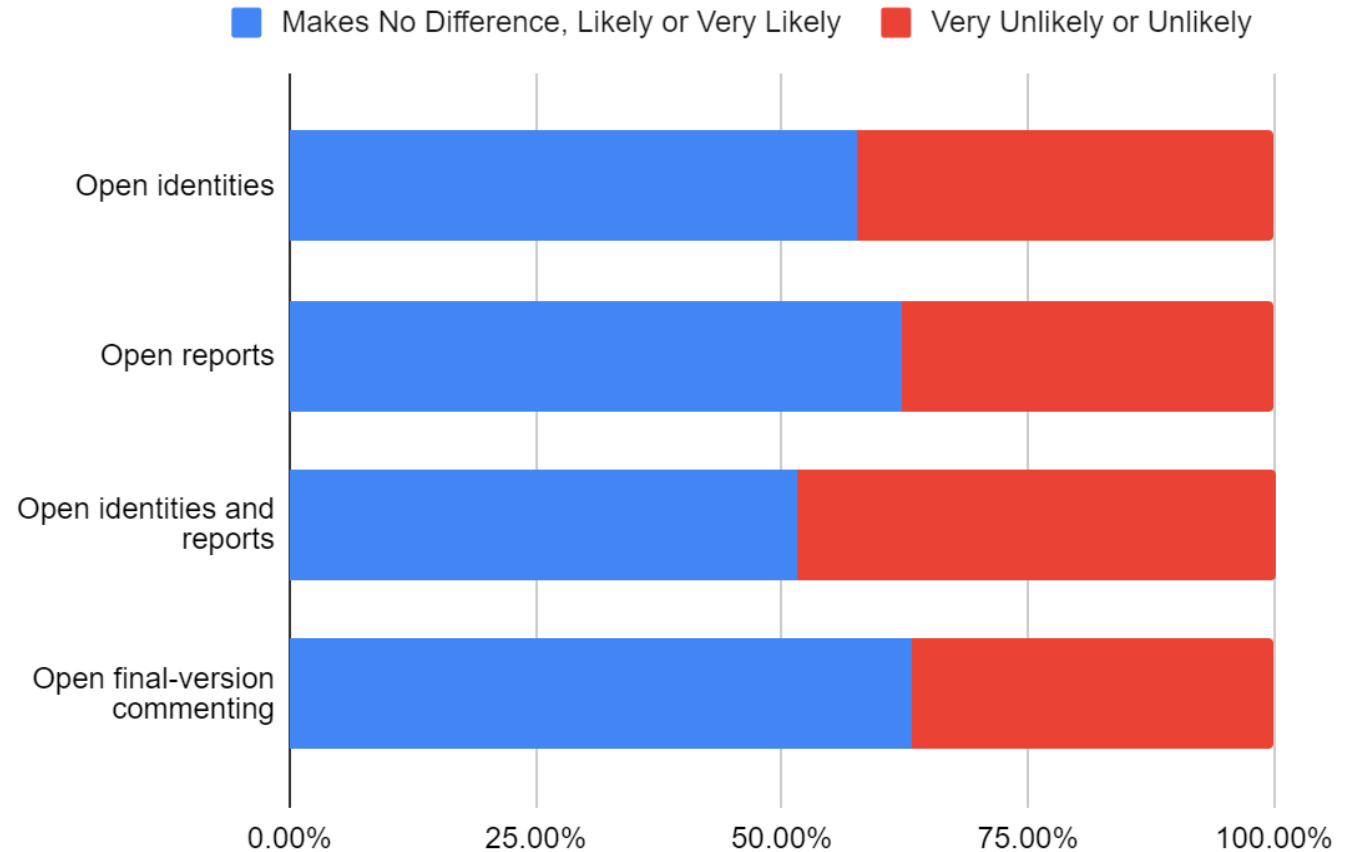


Appetite for *more* open peer review is growing: 1



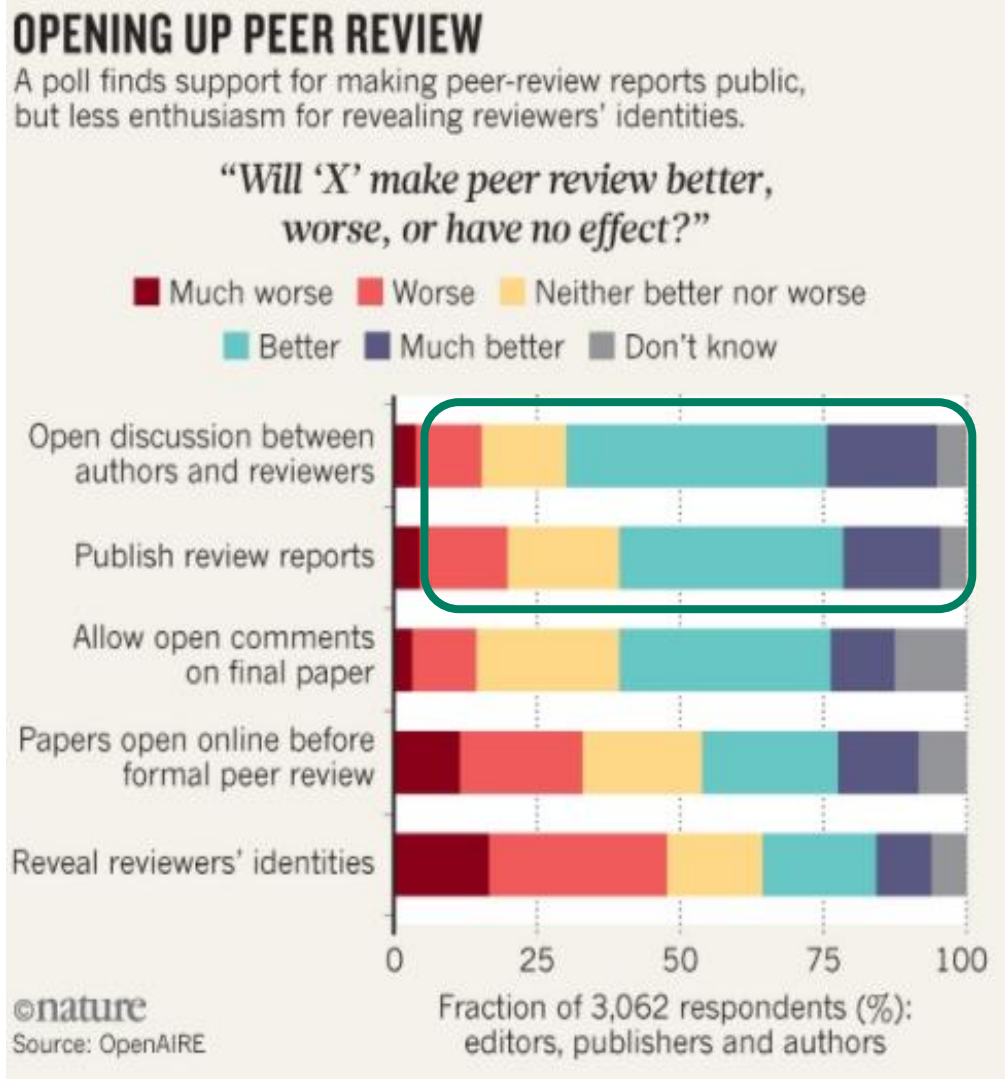
Study included survey of over 10,000 reviewers

The effect of journal review policies on reviewer acceptance rates



Source: <https://publons.com/static/Publons-Global-State-Of-Peer-Review-2018.pdf>

Appetite for more open peer review is growing: 2



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EDITORIAL · 05 FEBRUARY 2020

Nature will publish peer review reports as a trial

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Thousands of grant peer reviewers share concerns in global survey

Transparency in peer review

Going transparent

Publishing peer-review reports will help readers see the often fascinating and important discussions that take place between researchers and reviewers of research. Credit: Getty

Initiatives to support more open peer review emerging

Tying peer review to preprints & journal independent peer review

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PublishYourReviews

An initiative encouraging peer reviewers to publish their reviews alongside the preprint of an article

Sign the pledge

1 Receive invitation to review

2 Write review

3 Publish review alongside preprint

4 Add journal recommendation and submit review to journal

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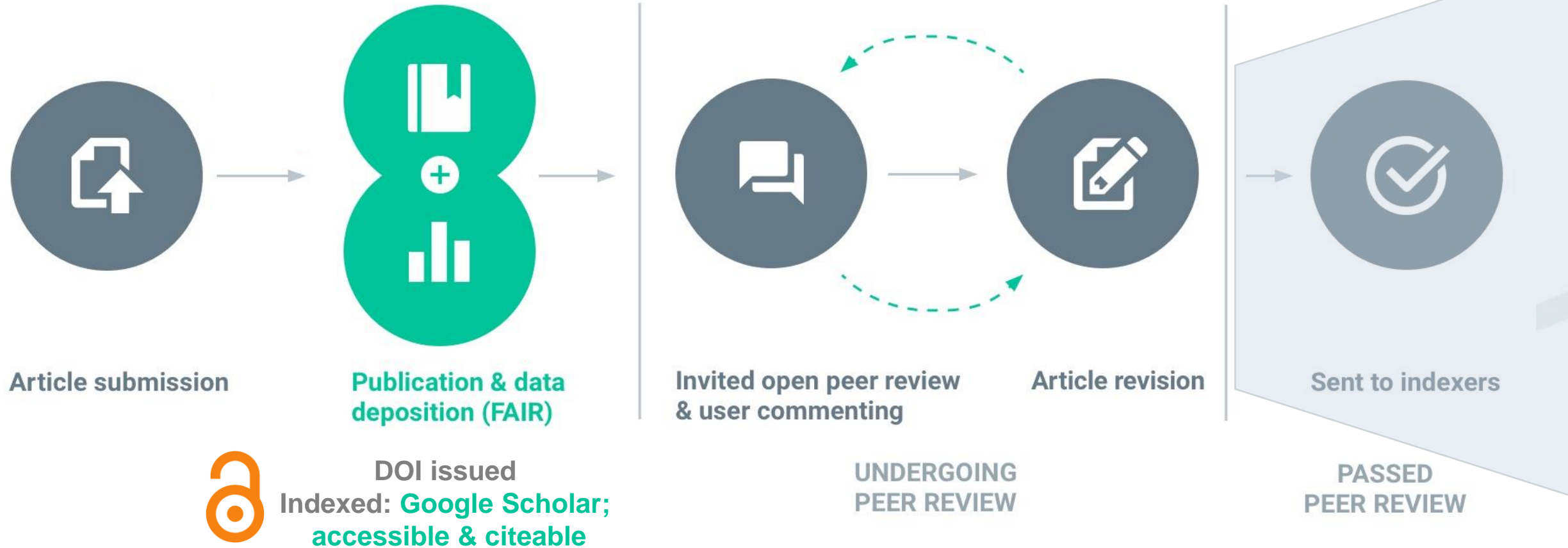
Researcher Recognition

Applauding the elite group of people behind innovative contributions to global research

Based on quantitative and qualitative results from our comprehensive, high-quality data from across the Web of Science™, our recognition programs applaud researchers for their contributions to innovation in science, social science and citation analysis.

Recognition/Credit for reviewers

F1000 model: post-publication transparent peer review



How it works at F1000: transparent peer review




- Authors can respond directly to reviewers and **discuss / debate** issues
- Readers can read and **understand different viewpoints** and added context from reviewers
- **Reviewers (including early career researchers) gain credit** for this crucial work

The screenshot displays the F1000Research interface. At the top, there is a search bar and a 'SUBMIT YOUR RESEARCH' button. Below the navigation bar, the article title is 'Studying ancient human oral microbiomes could yield insights into...'. The article is marked as 'REVISED' and has a 'Check for updates' button. The title is highlighted with a green box: 'Studying ancient human oral microbiomes could yield insights into the evolutionary history of noncommunicable diseases [version 2; peer review: 2 approved]'. The article is by Abigail S. Ganz et al. and Laura S. Weirich. It is included in the 'Genomics and Genetics' gateway and the 'Evolutionary Genomics' collection. The article is available in PDF, XML, and can be cited or exported. The 'Open Peer Review' section shows the 'Reviewer Status' as 'Approved' (two green checkmarks) and 'Reviewer Reports' for 'Invited Reviewers' 1 and 2. Reviewer 1 (Sarah Schrader) reviewed Version 1 on 30 Jan 23. Reviewer 2 (Taylor van Doren) reviewed Version 2 (revision) on 06 Apr 23. A 'Reviewer Report' for Taylor van Doren is shown, dated 23 Feb 2023, with 22 views. The report states: 'This paper reviews and synthesizes the literature linking the oral microbiome to various non-communicable diseases, and additionally provides some intriguing paths forward on how to study these connections in skeletal remains to illuminate another dimension of NCDs in past human populations. I really enjoyed this interesting, well-written, and well-researched paper, and I think the authors have significant contributions to make to the body of literature on ancient human health.' The article is also marked as 'APPROVED WITH RESERVATIONS'. A 'REVISED Amendments from Version 1' section is visible at the bottom, with a text box containing the authors' response to the reviewers.

F1000 focus on research integrity: *transparent, invited peer-review*



Open Identities

- Reviewers must provide their name & affiliation which is published alongside the article
- Conflicts of interest openly declared
- ORCID  captured & shared with ORCID record



Open Reports

- Reviewer reports published alongside the article
- Co-reviewing encouraged & named (often ECRs)
- Reviews have a DOI, are citable, & include real time viewing metrics



Open Review Status

Reviewers:

- provide a narrative report
- assign a status

✓ APPROVED

The paper is scientifically sound in its current form and only minor, if any, improvements are suggested

? APPROVED WITH RESERVATIONS

A number of small changes, sometimes more significant revisions are required to address specific details and improve the papers academic merit.

✗ NOT APPROVED

Fundamental flaws in the paper seriously undermine the findings and conclusions

Summary



- 1. Discoverability and access to all the components of research are integral to Open Science**
- 2. Peer review ripe for reinvention and in the context of Open Science**
- 3. Peer review is part of the scholarly record: *how can we make reviews work best for science?***
- 4. Burgeoning research integrity issues support the case for more transparency throughout the publishing process**

Thanks!

Any Questions?

For more information contact:
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