

# Reimagining Peer Review Needs Publishers and Institutions to Collaborate More

Stuart R F King

eLife Sciences Publications, Ltd., Cambridge, UK

Correspondence: [s.king4@lboro.ac.uk](mailto:s.king4@lboro.ac.uk)

Twitter/X: [@StuartRFKing](https://twitter.com/StuartRFKing)

ORCID: [0000-0003-4374-3587](https://orcid.org/0000-0003-4374-3587)

**Editorial review:** This article has been subject to an editorial review process.



**Copyright notice:** This article is issued under the terms of the **Creative Commons Attribution License**, which permits use and redistribution of the work provided that the original author and source are credited.

You must give appropriate credit (author attribution), provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

<https://creativecommons.org/licenses/by/4.0/>

## Abstract

*Collaboration between academic institutions and publishers is essential for advancing ongoing peer review reform. Despite being an important process in scientific publishing, the flaws of the current models of peer review used by most publishers are increasingly recognised, and include inefficiency, inconsistency, bias and a lack of transparency. Fortuitously, numerous journals and related organisations have leveraged the transformative potential of preprints to already initiate positive changes. However, active support from academic institutions, influential in shaping researchers' careers and cultures, is crucial too. This potential collaboration would offer mutual benefits, foster more responsible research assessment, help reimagine peer review, and ultimately promote a healthier research culture.*

**Keywords:** peer review; preprints; research assessment; research culture; reviewed preprints

Peer review is undergoing a much-needed reform; yet there is still far to go before the research community can benefit from its full potential. After attending the International Research Culture Conference in 2023 to discuss this very topic, I was surprised to find myself as one of only a few publishing representatives at the event. Research cultures reflect the values of research communities, and shape how research is both conducted and communicated. While there is a growing trend towards recognising a broader range of outputs, publications continue to hold much significance for many working in academia. This means that publishers still wield substantial influence in this space. Hence, I had expected there to be more publishers present at the conference, ready to glean insights and share initiatives. The absence of other publishers at the conference, however, convinced me that achieving peer review reform will require both research institutions and publishers to collaborate much more than they have up until now.

Peer review, the process whereby experts evaluate and comment on the work of others, has been a cornerstone of scholarly publishing since roughly the middle of last century (**Horbach & Halfman, 2018**). The practice, however, greatly needs overhaul due to many widely acknowledged issues (**Smith, 2010; Heeson & Bright, 2021**). Peer review requires much time and effort. For example, it is estimated that reviewers spent over 100 million hours working on peer reviews in 2020 alone (**Aczel et al., 2021**). However, all too often there is little to show in return. Rejected articles may be submitted to another journal unchanged without readers being made aware of the initial concerns, while publishers rarely reveal the factors influencing the decision to publish a specific article accepted into one of their journals. Furthermore, while peer review aims for an unbiased assessment of scientific merit, bias has been documented in all methods of peer review (**Lee et al., 2013**). This is because, being based on decisions made by individual reviewers and editors, peer review is inherently susceptible to conscious or unconscious biases. Research indicates that these biases can perpetuate a power imbalance that disproportionately affects those already disadvantaged in academia, such as scholars from underrepresented backgrounds and early-career researchers (**Silbiger & Stubler, 2019**).

Because of these issues, conversations across the research ecosystem often reveal a strong desire to reform peer review. This was evident in my discussions with other attendees at the International Research Culture Conference, where many expressed hopes for such a change. A similar sentiment was revealed by eLife's latest Perception Survey. In this survey, 41% of the more than 2,500 respondents listed 'reducing bias in peer review' as something they would 'most like to see more of in publishing'. Additionally, over one-third of respondents most wished to see 'more

transparent reviews' (37%). Conducted online, the 2023 Perception Survey ran for three weeks in May, with the majority of responses coming from researchers active in the life sciences who have either read, published in, or reviewed for the eLife journal.

Fortunately, positive changes are already in motion. Increasing numbers of journals are making peer review more open and accountable by publishing their reviewers' comments alongside the relevant articles (Polka et al., 2018). However, these journals conducting 'transparent review' remain the exception to the rule. Peer review also remains slow (Huisman & Smits, 2017), with new publications sometimes taking months or even years to wind their way through the process, delaying the dissemination of new findings.

This is where preprints are making a difference. A preprint is a complete version of a scholarly manuscript that has been openly shared without undergoing formal peer review or having been published in a traditional journal. Since journal peer review can be slow, posting a preprint to a preprint server lets the author share their work as soon as they think it is ready, allowing them to potentially get instant feedback and more quickly make an impact. Preprint servers have expanded in recent years, especially in the life sciences (Kaiser, 2017), driven by the demand for quicker sharing of information. Notably, works published on preprint servers also fulfil the open-access requirement set by many funders, falling under the category of 'green OA' as they are freely available online (Open Access Network, 2024).

Preprints, however, have their own issues. While peer review is not without its flaws, exposing research findings to scrutiny remains a vital step in the scientific process. Asking peer reviewers to identify any shortcomings in the authors' methods, data and reasoning will always be valuable. Yet posting a preprint does not inherently require this level of scrutiny, and there is also a greater risk for preprints to be used by those wanting to spread misinformation (Sheldon, 2018).

There are fortuitously changes in motion to address these issues too. By effectively decoupling the review and dissemination stages inherent in traditional journal publishing, preprints have presented both the impetus and opportunity to reimagine peer review (King, 2023). Specifically, journals like eLife, along with initiatives such as Review Commons<sup>i</sup> and PReview<sup>ii</sup>, have seized the momentum around preprints and built upon the foundation of transparent review to offer new models of peer review, where the output of the process are 'reviewed preprints' (or 'refereed preprints'). These are versions of a preprint that are accompanied by their reviewers' comments, which have been made publicly accessible independently of journal publication (Eisen et al., 2022; Brainard, 2022).

A reviewed preprint combines the time-saving advantages of posting a preprint with the scrutiny offered by peer review, and swiftly provides readers with a public assessment of the specific strengths and weaknesses of a given piece of scholarly work.

But change takes time, and much work is needed for these newer, more open and efficient, models of peer review to become commonplace. Despite a growing number of discipline-specific or region-specific preprint servers being launched, only a fraction of articles in peer-reviewed journals are initially shared as preprints (**Puebla et al., 2021**). Even fewer of those are shared as reviewed preprints, despite their being online platforms – such as Sciety<sup>iii</sup> – where this activity can now readily take place. It is thus clear that the remaining obstacles to the ongoing reform of peer review are now not technological but cultural (**King, 2023**).

As with many issues related to research culture change, the lack of uptake of new models of publishing and peer review likely stems from a lack of incentives across the academic research environment. The system is not set up to reward researchers who adopt these new models when it comes to decisions related to getting jobs or grants. Instead, many researchers perceive, rightly or wrongly, that they are only rewarded by publishing as many articles as possible within a narrow range of journals (**Binswanger, 2014**), even if doing so perpetuates the current flawed system of peer review. Fortunately, academic institutions are a part of the system that can work to change this.

Academic institutions exert significant sway in shaping researchers' careers and the norms and cultures of their researcher communities. Their increasing acknowledgment of this influence and the need for more positive research cultures – demonstrated by their diverse representation at the conference – signals a positive development. Despite challenges tied to differences in scale, geography and specialism among institutions, it suggests a willingness for different institutions to align their policies and initiatives with existing efforts being developed elsewhere. In this context, there would be many potential benefits if decision-makers at academic institutions looked at what they can do to champion the current reform of peer review as well, including engaging more closely with publishers.

To advance the reform of peer review, it is crucial that more institutions firstly recognise preprints and reviewed preprints as valued research outputs. Researchers, eager to leverage these open and efficient publishing methods, need assurance that their works will be fairly considered in funding and career decisions. And while there are examples of where this is happening (**eLife, 2022; EMBO, 2022**), unfortunately, many researchers often report that is not the case, perhaps due to institutions lagging behind the evolving publishing landscape. In eLife's 2023

Perception Survey, for example, the majority either reported their institutions lacked policies recognising preprints as records of productivity (40%) or were unaware if their institution had such policies (36%). For reviewed preprints, 44% stated their institutions do not equate them to traditionally peer-reviewed articles, while 47% were again unaware if their institutions had such a policy.

Institutions should adopt policies that endorse transparent peer review focused on the merits of the work more generally. This could include transparent review via reviewed preprints, or via reviewers' reports being published alongside traditional journal articles. It might involve institutions simply allowing researchers to include all works have been publicly reviewed within their applications for new roles or promotions, and not only those that have been published within traditional journal models. Alternatively, it could see institutions actively prioritising applications that include transparently reviewed works, liked reviewed preprints, over those reviewed at venues where the peer-review materials are not made available (assuming that those reports attest to the work's quality and rigour). Academic institutions should consider these changes to demonstrate their commitment to move beyond the flawed practice of relying on journal titles or Impact Factors as proxies for research quality; a change that is advocated in the principles of the Declaration on Research Assessment (**DORA, 2013**). Embracing transparent reviews would also allow institutions access to more nuanced assessments that could support better hiring or promotion decisions, while avoiding the redundancy of re-evaluating previously reviewed works in each application process.

In parallel, an increasing number of academic institutions are putting in the work to articulate what it is that they want to value in their research communities, from creativity to collegiality, openness, inclusiveness or rigour (**University of Glasgow, 2024; University of Leicester, 2024; University of Warwick, 2024**). This includes defining criteria for assessing often previously poorly defined elements like 'research excellence' (**University of Sheffield, 2024**). Collaboration between institutions and publishers can bolster these efforts too. If consensus about what is valued emerges among institutions or within specific disciplines, publishers with journals that serve those communities can lend their support. For those values that can be demonstrated through research articles, a society publisher could update its guidance to reviewers such that they ask them to consider and comment on those specific values when writing the assessments of new articles. For instance, reviewers might explicitly be asked to comment on the 'creativity of the author's experimental approach' or the 'rigorousness of their methods'. Then, if those reviews are made public via some form of transparent review, publishers would be providing institutions with ready access to evaluations of their

researchers' work that are focused on the values that those institutions have identified as most important to them.

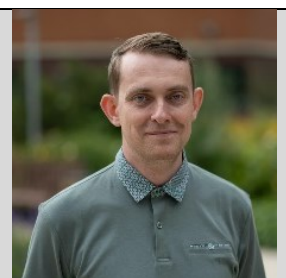
Being more explicit about the qualities that journals want reviewers to assess during peer review would benefit publishers too. For example, it would help make their peer reviews more consistent and reduce the scope for biases to influence decisions, and thus make their journals more appealing to authors. Public peer reviews, either via reviewed preprints or transparent review of traditional journal articles, could then also help publishers to more clearly demonstrate the value that they provide. They would help traditional publishers to remain relevant in a publishing landscape that is moving towards being increasingly open and in which more and more manuscripts are first published as preprints. At a time when research credibility is being questioned (**McKie, 2024**), and concerns around predatory journals continue (**Boukacem-Zeghmouri, 2023**), making peer reviews could also help to actively reassure authors, readers, institutions and funders of the quality of a given journal's peer-review processes.

Although these actions would help publishing in the long run, change will take time. The publishing industry has often faced criticism for being slow to adapt (**Khan et al., 2014**). However, the responses of publishers to changing pressures, such as from funders through open-access initiatives like 'Plan S' (**Liverpool, 2023**), and reactions to global events like COVID-19 (**Wellcome, 2020**), indicate their ability to evolve when suitably incentivised. This suggests that with increased engagement and collaboration between publishers and the wider research community, including academic institutions, meaningful change will be possible.

Researchers at the earliest stages of their careers would also be among those with the most to gain from these changes to the system. Early-career researchers, especially those from underrepresented groups or on fixed-term contracts, face significant disadvantages due to flaws inherent in the current peer review process, including its slowness and bias (**Huber et al. 2022**). Convincing more senior colleagues, who typically hold the positions of power and who have succeeded in this system, about these issues can often be challenging. However, there are positive signs that leaders in influential positions, whether in institutions, funding bodies, or publishing, are acknowledging these problems and showing a willingness to take corrective actions. This includes through their engagement with events such the International Research Culture Conference, which, to me, indicates that early-career researchers should feel empowered to engage more with their academic institutions and the publishers serving their communities, to highlight their appetite for reform in peer review.

In conclusion, reshaping research culture hinges on transforming peer review through collaboration between academic research institutions and publishers, and the researchers of all career stages who engage with them. Institutions recognising the value of preprints, emphasising balanced appraisals, establishing clear policies and actively engaging with publishers are pivotal steps. Concurrently, publishers accepting their role in supporting efforts to improve working cultures in which research is conducted is crucial too. Together these changes would not only support more responsible research assessment but also foster a more positive experience for future generations of researchers, with benefits for research in general and wider society.

Stuart King is the Research Culture Manager at eLife, an open-access journal that reviews preprints in the life sciences and medicine. Based in Cambridge, UK, his role supports eLife's ambitious agenda to reform how research is reviewed and communicated and promote openness, integrity, equity, diversity and inclusion in research and publishing. Since 2019, he has been a Steering Committee member for DORA, championing responsible research assessment internationally.



## References

Aczel, B., Szaszi, B., Holcombe, A.O. 2021. A billion-dollar donation: estimating the cost of researchers' time spent on peer review, *Research Integrity and Peer Review*, 6(14). DOI: [10.1186/s41073-021-00118-2](https://doi.org/10.1186/s41073-021-00118-2) [Accessed: 14 February 2024].

Binswanger, M., 2014. Excellence by Nonsense: The Competition for Publications in Modern Science. In: Bartling, S., Friesike, S. (Eds.), *Opening Science*. Springer, Cham. DOI: [10.1007/978-3-319-00026-8\\_3](https://doi.org/10.1007/978-3-319-00026-8_3) [Accessed: 16 February 2024].

Boukacem-Zeghmouri, C., 2023. Predatory journals entrap unsuspecting scientists. Here's how universities can support researchers, *Nature*, 620:469. DOI: [10.1038/d41586-023-02553-1](https://doi.org/10.1038/d41586-023-02553-1) [Accessed: 16 February 2024].

Brainard, J., 2022. Researchers push preprint reviews to improve scientific communications, *Science*, 378:6626. Available at: <https://www.science.org/content/article/researchers-push-preprint-reviews-improve-scientific-communications> [Accessed: 12 January 2024].

DORA, 2013. *San Francisco Declaration on Research Assessment*. Available at: <https://sfdora.org/read/> [Accessed: 14 February 2024].

- eLife, 2022. *eLife's New Model: Funders support use of reviewed preprints in research assessment*. Available at: <https://elifesciences.org/inside-elifesciences/ebadb0f1/elifesciences-new-model-funders-support-use-of-reviewed-preprints-in-research-assessment> [Accessed: 16 February 2024].
- EMBO, 2022. *Refereed preprints in applications for EMBO Postdoctoral Fellowships*. Available at: <https://www.embo.org/features/refereed-preprints-in-applications-for-embo-postdoctoral-fellowships> [Accessed: 16 February 2024].
- Eisen, M.B., Akhmanova, A., Behrens, T.E., Diedrichsen, J., Harper, D.M., Jordanova, M.D., Weigel, D., Zaidi, M., 2022. Scientific Publishing: Peer review without gatekeeping, *eLife*, 11:e83889. DOI: [10.7554/eLife.83889](https://doi.org/10.7554/eLife.83889) [Accessed: 12 January 2024].
- Heesen, R, Bright L.K., 2021. Is Peer Review a Good Idea?, *The British Journal for the Philosophy of Science*, 72(3). DOI: [10.1093/bjps/axz029](https://doi.org/10.1093/bjps/axz029) [Accessed: 12 January 2024].
- Horbach, S.P.J.M.S., Halffman, W.W., 2018. The changing forms and expectations of peer review, *Research Integrity and Peer Review*, 3(8). DOI: [10.1186/s41073-018-0051-5](https://doi.org/10.1186/s41073-018-0051-5) [Accessed: 12 January 2024].
- Huber, J., Inoua, S., Kerschbamer, R., König-Kersting, C., Palan, S., Smith, V.L., 2022. Nobel and novice: Author prominence affects peer review, *PNAS*, 119(41) e2205779119. DOI: [10.1073/pnas.2205779119](https://doi.org/10.1073/pnas.2205779119) [Accessed: 16 February 2024].
- Huisman, J., Smits, J., 2017. Duration and quality of the peer review process: the author's perspective, *Scientometrics*, 113, pp. 633–650. DOI: [10.1007/s11192-017-2310-5](https://doi.org/10.1007/s11192-017-2310-5) [Accessed: 14 February 2024].
- Kaiser, J., 2017. Are preprints the future of biology? A survival guide for scientists, *Science*. Available at: <https://www.science.org/content/article/are-preprints-future-biology-survival-guide-scientists> [Accessed: 14 February 2024].
- Khan, R., Goodman, L., Mittelman, D., 2014. Dragging scientific publishing into the 21st century, *Genome Biology*, 15(556). DOI: [10.1186/s13059-014-0556-2](https://doi.org/10.1186/s13059-014-0556-2) [Accessed: 16 February 2024].
- King, S.R.F., 2023. Preprints mean peer review can be reimagined as it should always have been, *Against the Grain*, 35(1) Available at: <https://www.charleston-hub.com/2023/03/preprints-mean-peer-review-can-be-reimagined-as-it-should-always-have-been/> [Accessed: 12 January 2024].
- Lee, C.J., Sugimoto, C.R., Zhang, G., Cronin, B., 2013. Bias in peer review, *Journal of the American Society for Information Science and Technology*, 64(1), pp. 2-17. DOI: [10.1002/asi.22784](https://doi.org/10.1002/asi.22784) [Accessed: 14 February 2024].
- Liverpool, L., 2023. Open-access reformers launch next bold publishing plan, *Nature*, 623:238-240. DOI: [10.1038/d41586-023-03342-6](https://doi.org/10.1038/d41586-023-03342-6) [Accessed: 16 February 2024].



McKie, R., 2024. 'The situation has become appalling': fake scientific papers push research credibility to crisis point, *The Observer*. Saturday, 3rd February. Available at: <https://www.theguardian.com/science/2024/feb/03/the-situation-has-become-appalling-fake-scientific-papers-push-research-credibility-to-crisis-point> [Accessed: 16 February 2024].

Open Access Network, 2024. *Green and Gold*. Available at: <https://open-access.network/en/information/open-access-primers/green-and-gold> [Accessed: 16 February 2024].

Polka, J.K., Kiley, R., Konforti, B., Stern, B., Vale, R.D., 2018. Publish peer reviews, *Nature*, 560:545-547. DOI: [10.1038/d41586-018-06032-w](https://doi.org/10.1038/d41586-018-06032-w) [Accessed: 12 January 2024].

Puebla, I., Polka, J., Rieger, O.Y., 2021. Preprints: Their evolving role in science communication, *MetaArXiv Preprints*. DOI: [10.31222/osf.io/ezfsk](https://doi.org/10.31222/osf.io/ezfsk) [Accessed: 12 January 2024].

Sheldon, T., 2018. Preprints could promote confusion and distortion, *Nature*, 559:445. DOI: [10.1038/d41586-018-05789-4](https://doi.org/10.1038/d41586-018-05789-4) [Accessed: 16 February 2024].

Silbiger, N.J., Stubler, A.D., 2019. Unprofessional peer reviews disproportionately harm underrepresented groups in STEM, *PeerJ*. 7:e8247. DOI: [10.7717/peerj.8247](https://doi.org/10.7717/peerj.8247) [Accessed: 12 January 2024].

Smith, R., 2010. Classical peer review: an empty gun, *Breast Cancer Res*, 12(Suppl 4):S13. DOI: [10.1186/bcr2742](https://doi.org/10.1186/bcr2742) [Accessed: 12 January 2024].

University of Glasgow, 2024. *Statement on Research Culture*. Available at: <https://www.gla.ac.uk/myglasgow/ris/researchculture/researchculturestatement/> [Accessed: 16 February 2024].

University of Leicester, 2024. *Our research culture*. Available at: <https://le.ac.uk/research/culture> [Accessed: 16 February 2024].

University of Sheffield, 2024. *Priority one: Excellence*. Available at: <https://www.sheffield.ac.uk/vision/our-pillars/research/excellence> [Accessed: 16 February 2024].

University of Warwick, 2024. *Research Culture at the University of Warwick*. Available at: [https://warwick.ac.uk/research/research-culture-at-warwick/research\\_culture\\_brochure\\_a4\\_2024\\_final.pdf](https://warwick.ac.uk/research/research-culture-at-warwick/research_culture_brochure_a4_2024_final.pdf) [Accessed: 16 February 2024].

Wellcome, 2020. *Publishers make coronavirus (COVID-19) content freely available and reusable*. Available at: <https://wellcome.org/press-release/publishers-make-coronavirus-covid-19-content-freely-available-and-reusable> [Accessed: 16 February 2024].

**To cite this article:**

King, S.R.F., 2024. Reimagining Peer Review Needs Publishers and Institutions to Collaborate More. *Exchanges: The Interdisciplinary Research Journal*, 11(3), 13-22. Available at: <https://doi.org/10.31273/eirj.v11i3.1519>.

---

**Endnotes**

---

<sup>i</sup> <https://www.reviewcommons.org/>

<sup>ii</sup> <https://prereview.org/>

<sup>iii</sup> <https://society.org/>