communications physics

EDITORIAL

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Transparent peer review: the value is clear

In January 2019, we announced to our authors and referees that *Communications Physics* would adopt Transparent Peer Review (TPR). What does this mean and how has it been received?

Peer review, the process of evaluation of scientific, technical or academic work by others working in the field, was introduced in the 18th century. However, it is only in the 20th century that it has become a standard practice in the publishing industry. Peer review is in essence a "discussion" between authors and their reviewers. It aims at improving scientific output while also providing the evaluation and verification of the technical content of research.

Peer review represents an important part of scientific progress, yet most of its value remains behind closed doors. As editors, we see the evolution of manuscripts from initial submission to the final decision, resulting in a publication or a rejection. Regardless of the outcome, editorial decisions on articles selected for peer review are informed by the input provided by our expert referees. From January 2019 to June 2021, we received almost 2000 reviews for our submitted manuscripts. This is a lot of valuable information that may help the scientific discourse, but that is not usually available to the wider scientific community.

In 2019, a year since the launch of the journal, we made the decision that this important information should be made available to all interested readers. This is why we offered our authors the opportunity to publish the reviewer reports, and their response, alongside the article. Such a practice is known as "transparent peer review" (TPR). All reviewers contacted after the first of January 2019 were informed that their report could be published alongside the article, if the authors opted for TPR. Anonymity is maintained unless the reviewer chooses to sign their report.

From the start, we had a strong belief that this opportunity would serve two main purposes: (i) transparency in the process of peer review, and (ii) build a library of "reviewer reports" for others to browse through, particularly early career researchers, who can benefit from having a clear idea of the opinion and approach of their more experienced peers.

The word "transparency" in this case implies not only the more classical meaning of making it easy for others to see what actions are performed, but also giving credit, albeit anonymously, to the vast amount of work done by our referees. Transparency also implies openness and accountability, so that more clarity in what leads to a decision on a paper can be drawn by the practice of publishing the content accumulated during peer review.

So, how have our authors and referees reacted to this practice in the past three years?

We have looked at the number of authors from papers published in the journal who have opted in TPR in 2019, 2020 and in 2021 (to the end of June). In 2019, *Communications Physics* published 158 articles, and more than 70% of our authors opted to have their discussion with peer reviewers published with their article. This percentage remained high in 2020, with 65% opt-in. Data for 2021 are only partial, as not all papers submitted last year have received a final decision yet, but the trend seems to indicate that fewer authors (just over 50%) have adopted TPR.

Different communities seem to embrace transparency in peer review in different ways. This was already shown by data accumulated during the original trial done at Nature Communication [1].

At *Communications Physics* we found that applied physicists and mathematical physicists have opted-in for TPR more willingly than biophysicists or nuclear and particle physicists (although for the latter numbers are low), see Fig. 1. However, in the vast majority of subfields, at least half of the authors shared the reviewer reports they received, and their replies, with the readers.

We have also noticed some variation in the rate at which authors embrace TPR depending on where they are in the world (see Fig. 2 for a few representative geographical areas).

According to our data, experimental researchers are slightly (67%) more inclined to transparency than theoretical physicists

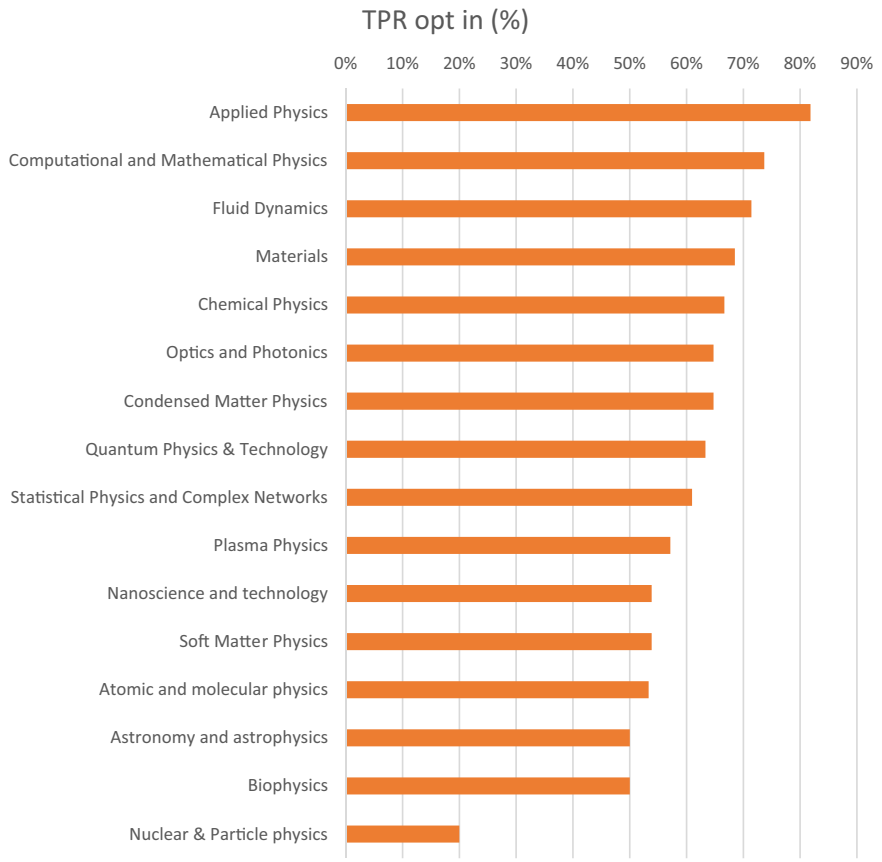

Fig. 1 Subject distribution of distribution of transparent peer review (TPR) opt-in. Distribution of TPR opt-in across sub-disciplines of articles published in *Communications Physics*.

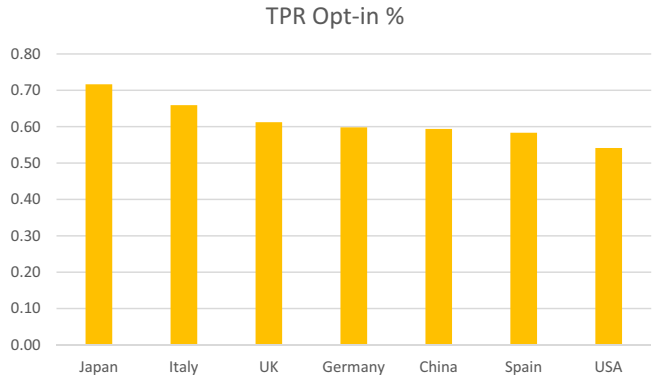

Fig. 2 Geographical distribution of transparent peer review (TPR) opt-in. Representative countries have been selected depending on the number of papers published where the corresponding author was associated with an institution in each country.

(61%), which is encouraging for the move of research towards reproducibility.

These data are encouraging, and TPR will continue at *Communications Physics*. One question that may arise is whether the publication of peer review information should be compulsory, and not at the discretion of authors. For the time being, we believe that this should be left for the authors to decide, but perhaps in the future, when the practice of sharing reviewer reports will be more widespread across communities, we could opt for making it the new gold standard.

We had very few reviewers disagreeing with this practice. There may be many reasons for this position, but we also found that often it was the result of misunderstanding, and has in fact been the opportunity to open a conversation on editorial practices. Here we wish to clarify that we will never publish the name of a reviewer, unless they decide to reveal their identity themselves. If any reviewers have strong reasons against TPR, we are interested in a dialog, while of course accepting that they might not be willing to provide a review for the journal.

Another comment that may arise is that the option of revealing the reviewer reports is on offer only for manuscripts that end up being accepted, and hence published in the journal. However, reviewers report also on manuscripts that result in a rejection, and one may argue that a lot of information is also stored there, without even accounting for transparency of the process and the "story behind closed doors" that yields to a "reject" decision. We agree. At the same time, it is not obvious how to share this information. Perhaps the physics community has some recommendations and suggestions on how to improve our practice of transparent peer review and we will be happy to hear them.

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Reference

1. Transparent peer review one year on. *Nat. Commun.* 7, 13626 https://doi.org/10.1038/ncomms13626 (2016).