

Double-blind peer review

***Nature Biotechnology*, together with *Nature* and its sister journals, is now offering anonymity to authors during the peer-review process.**

Starting in March, *Nature Biotechnology* will experiment with an alternative to its existing method of peer review. Instead of the traditional single-blind method, in which reviewers are anonymous but know the authors' identity, authors will now be able to choose double-blind peer review, in which both authors and reviewers are unknown to each other.

Several alternatives to the traditional single-blind peer-review process have been proposed. Chief among them are double-blind and open peer review, two apparent opposites, as in the latter both the authors and reviewers are known to each other. But the reasons cited in favor of these two alternatives are different. On one hand, proponents of open peer review see its transparency as a way to encourage more civil and thoughtful reviewer comments. On the other hand, advocates of double-blind peer review suggest that it eliminates *ad hominem* biases, such as those based on gender, seniority, reputation and affiliation. How effectively either method can meet these aspirations while maintaining the necessary level of criticism remains a matter of debate; for example, open peer review may promote a less critical attitude from young reviewers fearful of possible repercussions when they critique the work of senior colleagues.

Our sister journal *Nature* experimented with open peer review in 2006 (<http://bit.ly/1G9RLoV>), but at the time, despite interest expressed by the community, the uptake from both authors and reviewers was low, and the open reviews were not technically substantive. Views about open peer review are probably still evolving, as several journals continue to experiment with variations on this practice. Opinions about double-blind review, however, are remarkably consistent.

In one of the largest studies on peer review—a 2009 international and cross-disciplinary survey of more than 4,000 researchers (*J. Am. Soc. Inf. Sci. Technol.* **64**, 132–161, 2013)—76% of respondents indicated that double blind was an effective peer-review system. (By comparison, open and single-blind peer review were considered effective by 20% and 45% of respondents, respectively.) More recently, Nature Publishing Group ran a survey that confirmed the desire of respondents to have double-blind peer review as an option. Importantly, this sentiment is widely echoed in conversations with young scientists worldwide. These conversations illustrate a widespread perception that biases based on authorship affect the traditional single-blind peer review, and they have contributed greatly to making the editorial team at *Nature Biotechnology* and their colleagues at other Nature journals reconsider the proposition.

One argument sometimes put forward for not embracing double-blind peer review is that in some situations, an author's identity may already be an open secret due to awareness of their work through conference talks and posters. What's more, in some cases, referees may be able to ascertain an author's identity by 'scrutinizing' their writing style or by perusing the reference list and seeing whether papers from that laboratory predominate. Clearly, this latter argument is something of a

straw man—in double-blind review, referees can never be sure that they have identified the author, whatever their suspicions.

Another reason sometimes given for not adopting double-blind review is that editors should be able to mitigate the biases in a single-blind review process. Certainly, for any paper under review, *Nature Biotechnology* editors will continue to maintain awareness of any potential predispositions when selecting reviewers and considering their comments. We will also continue to honor reasonable requests to exclude particular reviewers, regardless of the chosen method of peer review. Even so, by definition, unconscious biases may be difficult to identify and to control. Several studies have detected involuntary biases, notably on the basis of gender, in other areas of the scientific enterprise, such as the hiring of laboratory staff, citation habits and speaker lineups at conferences. It is therefore difficult to guarantee a bias-free process.

At this journal, one of our major reservations about double-blind peer review has been whether it would dissuade experts from reviewing for the journal. In some cases, the reputation of the laboratory of a paper's corresponding author can be enough to persuade a busy referee to take a look at a paper, whereas for other papers they would not. The potential disincentive as to whether to agree to review a blinded paper is not a trivial concern, particularly in a world where new journals are proliferating and the demand for referees' time is greater than ever. But this problem hasn't surfaced in two pilot studies that have been recently carried out at *Nature Geoscience* and *Nature Climate Change*.

Since June 2013, *Nature Geoscience* and *Nature Climate Change* have given authors the option of choosing between double-blind and single-blind peer review at submission. A year or so on from the beginning of that pilot, the uptake of the double-blind method has been much lower than the enthusiasm expressed in surveys would have predicted—no more than a fifth of monthly submissions are going the double-blind route (*Nat. Nanotechnol.* **9**, 871–872, 2014). However, the test has also shown that double-blind peer review does not affect the quality of reviews; in addition, authors who have opted into the pilot have been overwhelmingly positive about their experience.

On the basis of these positive reactions, *Nature Biotechnology* has now decided to join the double-blind experiment. Authors submitting their papers to this journal will now have the opportunity to opt for double-blind peer review. Responsibility for rendering a manuscript anonymous falls to the authors.

Going forward, this journal will continue to promote policies that support researchers who wish to release data early and to discuss their work with their peers before publication, at conferences or on preprint servers. Some will choose the double-blind option to assuage concerns about biases, others purely by principle. We are pleased to offer this new service and will keep the initiative under review. *Nature Biotechnology* welcomes comments from authors and reviewers. 