

## The value of journals



**As *Nature Neuroscience* celebrates its 25th anniversary year, we thought this would be a good time to reflect on the value that our journal, and other peer-reviewed journals, provide to our authors, our readers, and society.**

Since 1998, when the first issue of *Nature Neuroscience* came out, not only has science changed dramatically, but the world of publishing, and communication in general, has also transformed. We now have access to an unprecedented volume and diversity of information, and at unprecedented speed. This changing landscape has led some to question the merits of more traditional forms of media, including scientific journals. As we mark our 25th anniversary, we thought it would be a good time to reflect on the role that journals play in science and society, and the benefits we provide to our communities.

One of the journal's most important functions is the first step in the editorial process: selecting which papers submitted to our journal are interesting and rigorous enough to be sent for peer review, and thus curating content to ensure the final product is of the highest quality. At *Nature Neuroscience*, for example, we receive over 2,000 submissions per year, which vary considerably in subject area, novelty, mechanistic detail and data quality. At our journal, these submissions are assessed by full-time professional editors, who are trained scientists with over 50 years of combined editorial experience. Each of our editors has cultivated a depth and breadth of knowledge of the numerous subfields of neuroscience that they handle and has a keen eye for the advances that will be most compelling to our readers. In many cases, making an initial decision about a paper requires the editor to process an intriguing but incomplete set of findings and recognize a germ that can develop in the revision process, and the editor may discuss the paper's strengths and weaknesses with other members of the editorial team. Curation of

content is particularly important for a highly selective journal such as *Nature Neuroscience*, but all journals, including those with academic editors, perform this function to some extent.

While we recognize the importance of open science and [encourage deposition of submitted manuscripts on preprint servers](#), we feel this initial editorial filter serves a complementary function. Preprint servers enable speedy and frictionless communication of all types of scientific findings, a bit like listing an item on the auction site eBay. Browsing content on preprint servers is a bit like shopping on eBay, too. With such a wide array of papers, a scientist is bound to find some that are of interest. But, in the absence of an editorial filter, one may have to spend time wading through irrelevant or lower quality offerings.

Such an 'unfiltered' approach also omits the value added by the peer review process. As we have learned during the COVID-19 pandemic, rapid and open scientific communication is valuable, but peer review is also critical to ensure the quality of the scientific record. For papers that are peer reviewed at *Nature Neuroscience*, editors carefully select the panel of reviewers who evaluate the paper, taking into account the variety of technical expertise required, the need to incorporate both new, early-career and more experienced, calibrated reviewers, and the importance of gender, ethnic and geographic diversity. Peer reviewers help editors to understand a paper's advance relative to the context of the field, assess whether a paper's conclusions are adequately supported by the data, carefully vet the data and analysis for potential technical flaws, and recommend ways to improve the paper. Editors put great care into interpreting reviewers' comments, highlighting priorities for the revision process (and determining which requests can be disregarded) or rejecting papers for which successful revision may be untenable. Every paper we publish is improved as a result of peer review, and we believe strongly that peer review is an essential step of the scientific process.

Once peer review and revisions are complete, our editors work closely with authors of

provisionally accepted papers to ensure that the text is accurate and concise, all necessary information is reported, and data and code are shared appropriately. Accepted papers at our journal also benefit from the work of numerous additional professionals, including our editorial assistants, copy editors, production staff, art editors and in-house press officers, who help the final product to shine and receive the attention it merits.

As institutions that operate over the course of many years, journals build reputations that can be useful to readers. Because of the high quality of work that we are privileged to have submitted to our journal and our editorial processes of curating, refining and amplifying science, *Nature Neuroscience* has earned a reputation for publishing the most interesting and highest quality neuroscience research. This reputation may help to guide readers as they select which paper is worth a closer look or a thorough read. It can also be useful when interacting with papers more superficially – for example, when scrolling through a social media feed or a table of contents. This can be a reasonable way of staying up-to-date with the breadth of the field, but these superficial interactions require some degree of trust, and a journal's reputation can be a factor in choosing how to bestow this trust.

Finally, journals have been and will continue to be catalysts for positive change. *Nature Neuroscience*, for example, originated the reporting checklist for published papers to promote transparency and reproducibility of research. We have also supported code and data deposition and recently have begun offering open access publishing. Through our editorial process, we are also able to help to raise the bar in specific fields – for example, by championing improved technical approaches, larger sample sizes or higher ethical standards. We look forward to working together with the neuroscience community to continue this tradition of innovation for years to come.

Published online: 6 July 2023