

Identifying the Best – Theory, Methods, Practice

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Better Practices in Scientific Publishing

It may be that less anonymity, rather than more, is the key to sustaining quality in scientific publishing. Simply acknowledging reviewers and their efforts could be just the incentive we need to attract qualified scholars and scientists to this critical task. | by Richard N. Zare

Everyone strives to do or be the best, but the state of better may be all that can be reasonably expected or hoped for.¹ Scientific publishing is extremely important to the science profession because in the scientific world, the assessment of the value of an individual's achievements depends on reputation, and wide recognition of the worth of scientific work is most effectively achieved through publications.² I suggest making a change to the manuscript review process that might make for better practice in the area of scientific publishing. This suggestion addresses the problem that there are too few qualified individuals willing to conduct reviews, which is an important obstacle in maintaining quality.³

Why do individuals accept the reviewing task? Presently, it seems to be a combination of 1) if they review others' papers, others will review theirs; 2) they learn what work their colleagues are engaged in, and this may help them in their own research; and 3) they believe that such service to the scholarly community maintains this community of scholars.⁴ Clearly, these motives are not sufficient for some.

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At present, referees reviewing a paper are asked to keep their anonymity. There is even a movement today to keep the author or authors of a manuscript anonymous in a double-blind review process.⁵ At our 9th Forum on the Internationalization of Sciences and Humanities both the editor-in-chief of Nature (Sir Philip Campbell) and the editor-in-chief of Science (Dr. Marcia McNutt) advocated the use of double-blind reviews. The argument was made that this creates a level playing field with as much opportunity for a lesser-known author as a better-known author to get a favorable review.

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The idea is to remove all identifying materials from a manuscript. Interestingly, the *Physical Review* journals of the American Physical Society ran their own double-blind experiment about two decades ago. The results did not go well. From 1993 to 2001, only 0.06% of the papers submitted requested use of this option, and of these manuscripts, only about 6% were accepted for publication – an acceptance rate roughly ten times lower than for other papers submitted to the same journal. There have even been efforts (in philosophy journals) to introduce a triple-blind system in which even the editor is anonymous. While some argue that double-blind reviewing overcomes bias against women and minority groups, the results to date do not seem to support that contention.⁵ Moreover, most research work builds on previous research work done by the same author. Consequently, it would not take much detective work to guess the identity of an author. Another objection is that by removing all identifiers, the reviewer is not able to judge appropriately how trustworthy or significant the claimed results are based on previous work from the same laboratory or research group.⁶ Indeed, I believe that the concept of double-blind reviews is moving in the wrong direction.

Incentivizing outstanding review work

I think an important obstacle to obtaining reviews from outstanding experts is that there is insufficient incentive for the reviewer to undertake this important task. A financial reward seems to be out of the question and forgets that reputation is the real currency of the scientific realm. What is needed is some mechanism to recognize the valuable service that reviewers perform in examining submitted manuscripts. My recommendation is that each journal publish a list of its reviewers once a year. A few journals, such as the journals of

the American Economic Association, explicitly acknowledge reviewers, but most journals do not. I also suggest that journals indicate the amount of reviewing done. I realize that some editors do not want it known who their workhorse reviewers are, but the number of reviews done per year could also be listed in some way, such as one, two, or many.

I think that a move to describe in more detail the contributions of reviewers would make the scientific publishing process more transparent, and it would add a more human dimension. It is my experience that anything that makes it clearer to others how science is really done benefits our field immensely. ■

References and Notes

- 1 I recommend reading the book *Better* by Atul Gawande (Picador, 2007), who describes a surgeon's notes on performance and what it takes to be good at something in which failure is so easy and so effortless.
- 2 R. N. Zare, "Editorial: Assessing Academic Researchers," *Angew. Chemie Int. Ed.* 51, 7338-7339 (2012).
- 3 From 1992-1995 I was Vice Chair of the Board of Directors of Annual Reviews, Inc., and I have been its Chair since 1995. Annual Reviews offers collections of critical reviews written by leading scientists and publishes volumes each year for 46 focused disciplines within the biomedical, life, physical, and social sciences. In the fairness of complete disclosure, it is this experience that I am borrowing from in writing this article. Let me acknowledge with gratitude discussions of this topic with Editor-in-Chief Emeritus Sam Gubins.
- 4 <http://scholarlykitchen.sspnet.org/2015/06/17/the-problems-with-credit-for-peer-review/>
- 5 See the article "Publishing: Is Double-Blind Review Better?" by Shannon Palus, which appeared in the July 4, 2015 issue of APS News.
- 6 T. E. DeCoursey, "Publishing: Double-Blind Peer Review a Double Risk," *Nature* 520, 623 (2015).