

LETTERS

A Peer Review How-To

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As a member of three editorial boards, author of 90-some scientific papers, and reviewer of over 900 manuscripts in the past 30 years, I have seen my share of scientific reviews. Reviews have become increasingly critical and demanding. This trend has doubtless contributed to high standards, but carried too far it can become counterproductive and frustrating for authors, editors, and reviewers alike.

A reviewer's chief responsibility is to advise the editors on whether a manuscript with suggested revisions would be acceptable for publication. Reviewers should highlight a paper's strengths and weaknesses, but they need not delineate strengths in very weak papers nor stress minor weaknesses in strong papers. Reviews should be prompt and thorough and should avoid sharp language and invective.

Reviewers make two common mistakes. The first mistake is to reflexively demand that more be done. Do not require experiments beyond the scope of the paper, unless the scope is too narrow. Avoid demanding that further work apply new techniques and approaches, unless the approaches and techniques used are insufficient to support the conclusions. There is no need to require more tests of conclusions that have been demonstrated beyond reasonable doubt, and conversely, authors need not exclude every possible explanation for their results. Suggest an additional experiment, further analysis, or altered interpretation, but do not make publication contingent on these changes. If the conclusions cannot stand without additional work or if the evidence does not distinguish between reasonably likely alternatives, recommend that the editor reject the manuscript.

The second mistake often made by reviewers is failing to consider all of the journal's goals and requirements, including standards and guidelines stated in the editorial policy and gleaned from its articles. Do not reject a manuscript simply because its ideas are not original, if it offers the first strong evidence for an old but important idea. Do not reject a paper with a brilliant new idea simply because the evidence was not as comprehensive as could be imagined. Do not reject a paper simply because it is not of the highest significance, if it is beautifully executed and offers fresh ideas with strong evidence. Seek a balance among criteria in making a recommendation.

Finally, step back from your own scientific prejudices in order to judge each paper on its merits and in the context of the journal that has solicited your advice.

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