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## Letters to the Editor

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## The Importance of Reviewers

Floyd E. Bloom

The advent of the World Wide Web and other forms of digital information sharing have led to predictions of the imminent demise of printed journals. Indeed, high-quality all-digital publications are being produced by established journals such as *Pediatrics* and the *Journal of Neuroscience*, among others. *Science* fully believes that high-quality print journals will remain the preferred scholarly venue for authors' best works, although it recognizes that even for print-only journals the process of reviewing, revising, and disseminating scientific articles unquestionably benefits from digital documents. However, regardless of the form in which manuscripts are transmitted between authors, editors, and reviewers, the integrity of the scientific review process requires that the performance of reviewers be appropriately rewarded.

Authors and readers judge journals on quality of content, breadth of readership, quality of publication, and method of delivery. The speed with which submitted papers are rejected or accepted for eventual publication is certainly an important selection factor. Wise editors select reviewers with great care, recognizing certain critical decisions. Who is a peer of this author, in content area, in technique, and in experience? Which reviewers should be avoided because of competitive conflicts and past disputes? In short, what does the editor need to know in order to decide whether to accept or reject a submittal?

To maintain journal quality, editors and grant review committee coordinators seek the "best" reviewers, based on their scientific reputation and past performance as reviewers. Often reviewers in "hot" areas of science may be in great demand by several journals. Reviewers working in other research fields may be in equally intense demand because the pool of qualified reviewers is quite small. Only the most dedicated scholars will agree to review frequently, given the pressures they face from research, grant proposals, and their own papers. So why be a reviewer? Some reasons may include passionate dedication to the scientific process or to the quality of journals one admires, as well as hopes for future authorship there. Reviewing also gives one a chance to take an advance look at new developments in the field.

No matter how quickly manuscripts can be digitally exchanged between editors and reviewers, the major temporal sink in the review process remains the delays in the return of useful reviews. Those delays in turn delay decision-making, which affects the journal's aggregate reputation. Prompt high-quality reviewing is the essential element of the scientific manuscript review process, and the one most vulnerable to the vagaries of editor-reviewer interactions. However, promptness without accurate criticism and open-mindedness is the editor's nightmare. As the attractiveness of a journal grows, submittals increase, straining the review process even more as an increasingly smaller fraction of papers is accepted.

Given the importance of reviewers in the scientific manuscript review process, how can editors and publishers reward exemplary performance? Some journals provide free subscriptions to reviewers, which is especially effective for expensive journals worthy of the subscription charge, but still underprices the time and effort required to review frequently. At some journals, editors offer reviewers insight into their decision-making process by sending them copies of the decision letters sent to authors after all reviewers' comments were digested. Such sharing in confidence can also help editors shape future reviewer performance. Editors can also offer limited numbers of reviewers the prestige of visible editorial positions or inclusion in long annual lists of reviewers. However, that recognition may be invisible to promotion committees. Rarely do editors have time to write to department chairs to praise a faculty member's performance as a reviewer.

Whether any of these possible rewards will be appreciated is an experiment in progress. What is clear is that the reviewer is the most critical and often most undervalued element of the scientific manuscript review process. Rewarding good reviewers for excellent performance is essential for maintaining the quality of the review process, no matter how quickly manuscripts are moved from authors to editors to reviewers. We do thank you.

Adapted from a virtual Keynote Address to the 5th Internet World Congress for Biomedical Sciences (see <http://www.mcmaster.ca/inabis98/>).

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the most critical  
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