

Improved system of anonymous peer review of manuscripts

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The peer review of scientific manuscripts is a process of subjecting one author's scholarly work or ideas to the scrutiny of others who are experts in the field. This process is used primarily by editors to select and screen submitted manuscripts¹. The peer review process aims to make authors meet not only the standards of their discipline in particular, but also of science in general. Thus the review is expected to be factual, timely and constructive. This does not always happen and hence it has seemingly become imperative that the peer review process be scrutinized and revamped.

Do we really need a peer review, especially when many classical papers about 50 or more years back were published without it¹? It is not always possible for an individual author or research team to spot every mistake or flaw in their own work. If the manuscript is written by authors who are new entrants to the R&D area in question, it will always be constructive for them to have an established expert review their manuscript. The process of peer review is probably essential for not only identifying benchmark quantity and quality of the research but also for upholding this benchmark. Reviewers' evaluations usually include an explicit recommendation of what to do with the manuscript, often chosen from a menu provided by the journal, and include final decisive conclusions such as (i) to unconditionally accept the manuscript, (ii) to conditionally accept it subject to its authors improving it in indicated ways, (iii) to reject it for specified reasons, but encourage revision and invite resubmission, and (iv) to reject it outright. The role of the reviewers is purely advisory, and the editor is under no obligation to accept their opinions and conclusions. The multiple reviewers of a given manuscript do not communicate with each other, with the expectation that the reviewers achieve consensus about their conclusions independently and this 'independent conclusion' can then be used as being equivalent to the jury verdict. In situations where the reviewers disagree, the editor, as the tie breaker, may have to either solicit one or more additional reviews or cast a decisive verdict on the manuscript.

In the entire review process, the reviewers remain anonymous to the authors, but the authors are not always so, because very few journals hide the identity of the authors and their affiliations. The peer reviewer is sheltered by this anonymity and there are numerous examples, both published as well as personal to a vast majority of the authors, where the reviewers have not been justifiably correct in their recommendations about the fate of a manuscript, so that the authors are left with an ever burgeoning thought in their minds that they have been short-changed by the reviewer. In a few instances, crosstalk of outright bias or of a conflict of interests between the authors and the reviewers is also reported. This is not a mere conjecture; faulty reviews of manuscripts do occur when both the author and reviewer are competing for the same R&D work or when there is a power tussle or when the two belong to 'opposing schools of thought'. In almost all cases, such reviews have been attributed to anonymity of the reviewers. According to some, peer review is not very different from elitist control of the multitudes while others invoke a stronger sentiment, namely, personal jealousy and ostracism that may determine the fate of the manuscript at the hands of such anonymous reviewers or it may suppress 'dissent' since the reviewers tend to be especially critical of conclusions that contradict their own views¹.

The problematic review manifests itself in one of several ways, ranging from an inordinately delayed review to a summary rejection of the manuscript on less than well reasoned grounds such as 'not in the scope of the journal' or 'nothing new in the manuscript, except the organism that was studied' or 'paper of limited or local importance as opposed to the vast mandate and scope of the journal', etc. It is difficult to imagine that the authors have been naive as to have prepared a manuscript that does not conform to the scope and mandate of the journal. Yet the learned reviewers are often eager to dismiss a manuscript for such a reason. More often than not, the reviewer is already having a pre-conceived opinion about either the institution from where the manuscript is submitted or about one

or more of its authors. A minor reasoning or motive could be an over-zealous and a perfectionist reviewer, or a reviewer whose specialization and expertise is not aligned with the subject matter of the manuscript. It is for such reasons that there is an increasing dissatisfaction with the peer review process, especially with respect to the anonymity of the reviewer.

This trend is now changing and a few journals offer the reviewer the option of remaining anonymous or actually insist on disclosing the identity of the reviewer. One of the pioneer trials of the open peer review concept in the biomedical field of research was in 1999, when the *British Medical Journal (BMJ)*² moved to an open peer-review system, revealing reviewers' identities to the authors, and in 2000, the medical journals in the open access published by BioMed Central³, were launched using open peer review. As with the *BMJ*, the reviewers' names are included on the peer-review reports. In addition, if the article is published the reports are made available on-line as part of the pre-publication history³. Recently, in February 2006, the journal *Biology Direct*⁴ was launched by Eugene Koonin, Laura Landweber and David Lipman, providing another alternative to the traditional model of peer review. If authors can find three members of the Editorial Board who will each return a report or will solicit an external review, then the article will be published. Reviewers cannot suppress publication, no reviews are anonymous and no article is published without being reviewed. Authors have the opportunity to withdraw their article, revise it in response to the reviews, or publish it without revision. If the authors proceed with publication of their article despite critical comments, readers can clearly see any negative comments along with the names of the reviewers.

In another scenario, a recent article in *Current Science*⁵, while discussing different models of the peer-review system, has offered the suggestion that the authors must acknowledge the reviewer's contributions. Many other aspects of peer review of manuscripts have also been discussed earlier⁶⁻⁸, including a recent call for an International Standard Peer Review system. However, none of these

articles has proposed any amelioration of the problem of peer review. That such problems, in numbers far more than by mere random chance, exist in the present system of peer review is undeniable. Has anyone considered the manifold harmful effects of such a review process that causes frustration amongst the authors to outright disgust? For a young R&D group, especially if the paper happens to be the first output from its efforts, it can be a severely demoralizing experience to be the victim of a faulty review of the manuscript that results in its summary rejection. So how does one improve the review process?

There have been calls for the removal of reviewer anonymity and for the introduction of author anonymity¹, and we emphasize this. We propose that the authors, their affiliations and their acknowledged support structures should be completely hidden from the reviewer, so that the reviewer gets only the manuscript in its totality without the addition of a mental baggage of his/her own preconceived notions and opinions. This will compel the reviewer to actually read the text of the manuscript, understand the rationale and experimentation or hypothesis involved and then assess whether or not the results are adequate and the discussion appropriate and warranted to justify the final decision on the manuscript. Starting with the premise that the scientific R&D involved in a manuscript actually follows a scientific reasoning and rationale, the above approach to reviewing will ensure that here also the same scientific rationale is invoked in deciding upon the fate of the manuscript. To enable this, the journals have to request the authors to re-structure their manuscript by including an explicitly detailed title page with all affiliations, manuscript identifiers and acknowledgements and any other syntax that may tend to indicate the identity of the authors and/or their affiliations as the first page of the manuscript. The second page must contain only the title of the paper fol-

lowed by the abstract and keywords, that are in turn followed by the rest of the manuscript minus ofcourse the acknowledgements. The version sent to the reviewer will therefore be the manuscript minus its first page. The editorial office can surely add in their manuscript tracking, reference or numbers to both the first page as well as the abstract page of the manuscript so as to crossmatch the different manuscripts and their reviews. The journals must also insist that the reviewer sticks to or negotiates a reasonably fixed time period within which the manuscript review is to be completed. The journal should, as a matter of rule, start with two reviewers and in the eventuality that there is a conflict of review verdicts between the two reviewers, appoint either a third reviewer or have the concerned editor use his/her casting vote. Whichever course is to be selected must however be pre-stated in the guidelines to the authors. Finally, the most important criterion that we propose and which probably will be the fulcrum about which the success or failure of the review system will revolve, is that the reviewers must not be anonymous to authors unlike the authors, and their institutions who must remain anonymous to the reviewers. This may sound harsh, but the very nature of a judgmental role that the reviewers perform provides them an enormous authority to impose on the authors, and it would be sheer complacency to assume that this authority is 'always' imposed unbiased. In this context, it is also pertinent to note that the authors have expended more time and effort besides, of course, the money spent in their R&D work that gets summarily rejected by a reviewer for criteria that are at variance with the actual merits of a paper that has culminated from the author's efforts and expenditure.

Several controlled studies have been carried out by the periodicals themselves especially in biomedical R&D areas, in seeking ways and means to eliminate flaws in the manuscript review pro-

cesses⁹⁻¹². We wonder if any of the Indian periodicals have ever carried out such an exercise of evaluating their manuscript review and publication decisions as well as author satisfaction criteria. Can we make a case for at least our Indian periodicals to strive for an honest, explicit and unambiguous yet non-parochial or non-partisan review of the manuscripts by not only disclosing the reviewer's identity, but also having authors remain anonymous to the reviewers? In fact, such a model can also be extended to include evaluation of R&D grant applications as well as the performance appraisal of scientists, though a full discussion of these aspects is beyond the scope of this note.

1. http://en.wikipedia.org/wiki/Peer_review (last accessed on 27 November 2007).
2. <http://www.bmj.com/> (last accessed on 27 November 2007).
3. <http://www.biomedcentral.com/info/authors/bmcseries> (last accessed on 27 November 2007).
4. <http://www.biology-direct.com> (last accessed on 27 November 2007).
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