

Peer Review

In 1993, the Supreme Court of the United States ruled that the peer review literature is no more valid in a court of law than the opinion of a single expert¹. Rather than rely on the concept of “generally accepted” medical opinion, the court ruled that “the trial judge . . . must make a preliminary assessment of whether the testimony’s underlying reasoning or methodology is scientifically valid and properly can be applied to the facts.” Isn’t that what the peer review process is suppose to do? Why then, did the court not simply accept the peer review process in the first place, rather than give equal credence to one expert? The reason is clear, the peer review literature, as a whole, does not adhere very well to its own mission. Recent editorials in this and other journals have criticized the peer review process for not being selective enough. Coupled with the glut of peer review scientific publications (there are over 3,000 according to ISI??); if an author is determined enough, it is almost certain that his article will be published somewhere no matter how bad the science.

Solving this problem is a difficult task. World renowned experts who serve as peer reviewers for this and other journals often come to vastly different conclusions about the acceptability of submissions. A recent article that evaluated referees with respect to acceptance or rejection found that the correlations between their recommendations were no better than chance alone. They also found that 80% of the variability between reviewers was based on factors other than the scientific validity [Rothwell and Martyn, 2000]. Presumably these factors included such things as whether or not the reviewer agreed with the conclusions, political considerations and even interpersonal rivalries. Further, unpublished data from this journal found that 43% of the time one referee recommended acceptance while the other recommended rejection!

Whilst everyone seems to agree that the review process should be based on vigorous scientific criteria, there are no well accepted standards that define such criteria. Even when there are established criteria, such as ICS terminology, some reviewers do not adhere to them. In addition, aside from the few studies cited above, the review process itself has not been subjected to very much scientific scrutiny.

Perhaps the biggest problem of all is a paucity of available referees. In my experience, most referees are extremely conscientious but overwhelmed by all of their professional obligations. They tell me that they spend as much as 1–2 hr reviewing a single article—a thankless, anonymous, and unpaid task.

Those are the problems. What are the solutions? Here are mine:

- (1) Establish minimum standards for accepting articles. Some think this would stifle creativity and innovation. I do not.
- (2) Establish scientific criteria for evaluating the reviewers and review process itself. With the advent of electronic manuscript submission, review and tracking systems that this and other journals have instituted, this process can be greatly simplified.
- (3) Expand the expert reviewer pool itself so that so few are not so burdened by so much
- (4) Acknowledge all referees and thank them.

REFERENCE

Rothwell PM, Martyn CN. 2000. Reproducibility of peer review in clinical neuroscience: Is agreement between reviewers any greater than would be expected by chance alone? *Brain* 123:1964–1969.

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¹Daubert v. Merrell Dow Pharmaceuticals (92–102), 509 U.S. 579 (1993).