Statistics, authors, and reviewers: the heart of the matter

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In 2004, when we proposed guidelines for reporting statistics (3), we did so from the sole perspective of an author.1 But we recognize that all of us—authors and reviewers alike—must strive to use and report statistics in ways that are consistent with best practices (4). We also understand there is longstanding inertia that must be overcome before standard deviations, confidence intervals, and precise P values are reported routinely in journals published by the American Physiological Society (APS). In his article (8), Morton recounts his encounters with this inertia.

Although the guidelines (3–5) continue to provoke discussion at APS Editor meetings, there remains a lack of consensus among the Editors and the Publications Committee about endorsing the guidelines as formal reporting requirements for APS journals. At least one Editor, however, has recommended to his Associate Editors that the guidelines be followed.

It would simplify the lives of authors who are comfortable with our guidelines, but it might be detrimental if, at present, APS Publications required authors and reviewers to follow them: it is risky to mandate reform, especially reform that may be unfamiliar. Instead, we believe authors must bear the responsibility of advocating for some statistic2 or for some rare statistical procedure. Why should the reporting of the statistics differ from the reporting of the science? It is this notion of communication that is the heart of the matter.

The question now becomes, how does an author communicate effectively with a reviewer?

Address an issue before a reviewer can ask about it. In the first version of your manuscript, explain and support with references anything you suspect will draw the attention of a reviewer. You want to help a reviewer understand why you did what you did. And you want to anticipate and address an issue before it creates a question.

Argue for what you believe in. A reviewer makes a comment for some reason, but not all comments obligate you to revise your manuscript. Most reviewers realize that disagreements are part of science. If you disagree with a reviewer, justify your stance.

If a reviewer is intractable or unreasonable, involve the Associate Editor. Most reviewers comment or question to help you justify something or to help you improve your paper. Some reviewers, however, may be unwilling to listen to your considered responses. If you present evidence and references that support your case but a reviewer refuses to hear the evidence, then summarize the facts of the case to the Associate Editor. It is the responsibility of the Associate Editor and—if necessary—the Editor to supervise the process of review and to arbitrate disputes.

As we have written before (4), all of us gravitate toward the familiar. In science, the familiar may escape our notice, but the novel most certainly grabs our attention. Some reviewers may challenge our guidelines for reporting statistics simply by virtue of the apparent novelty of those guidelines. But it is difficult for even the most recalcitrant reviewer to direct an author to dismiss guidelines that embody fundamental concepts in statistics (6), that are consistent with Scientific Style and Format: the CSE Manual for Authors, Editors, and Publishers [the style manual used by APS Publications (2)], that are consistent with the Uniform Requirements for Manuscripts Submitted to Biomedical Journals [reporting guidelines used by 650 biomedical journals (7)], and that reflect mainstream statistical concepts and accepted statistical practices (5).

REFERENCES

1. American Physiological Society. Instructions for Preparing Your Manuscript (online). http://www.the-aps.org/publications/i4a/prep_manuscript.htm#manuscript_sections [5 January 2009].

1 These guidelines can be accessed through the American Physiological Society Information for Authors (1).
2 For example, a standard deviation, confidence interval, or precise P value.

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