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The Process of Publication

Interest in the process of scientific publication has most recently been kindled by the investigation of a paper that appeared in *Science* (see News & Comment, 14 July, p. 120, and 28 July, p. 349). The investigation, by a panel of the National Institutes of Health, concluded that the paper was plagiarized. A question was then raised by a congressman of whether the journal should have accepted the paper, which was later judged to have been flawed. Perhaps this is a good time to clarify how acceptance and publication of manuscripts proceed at *Science*.

When a manuscript arrives at *Science* it is given a "received" date and starts through the review process. The decision to publish or reject the paper is based on its merits and editorial criteria. If the manuscript is found to be outdated by information published before our received date, it is rejected. If a paper published elsewhere reporting the same results appears while our manuscript is under review, that published paper cannot be a factor in our decision-making. We expect the competing work to be cited for completeness and accuracy, but we treat the two papers as independent discoveries of the same finding.

There was no charge of plagiarism before publication of the manuscript in question, and the author did include a reference to the competing work. Our retrospective analysis does not indicate that any change in procedures is needed (unless editors could be granted precognition). Had a charge of plagiarism or fakery been made before publication, we would have responded in a different manner. However, we do not routinely assume that arguments over proper credit (a not infrequent event) are evidence of plagiarism (a rare event).

If charges of fraud, backed by documentation, were made against a manuscript under review, *Science* would cooperate in bringing the allegations to the attention of those better able to investigate them. This must always be done with care because journals have limited investigative capabilities as well as a clear responsibility to preserve confidentiality in the peer-review process. Our reviewers include some of the best and busiest scientists in the world, who generally act with honor and altruism. If we cannot protect the privacy of their written and verbal statements, we cannot perform the kind of selection that the readers of *Science* expect. Therefore, we find ourselves in difficult territory when asked to give detailed information to our readers, university committees, or others who may need the information. It would be comforting to say we have precise policies that are activated instantly like computer programs, but our experience indicates that each case is different and involves a tortuous pathway through a mine field of unpleasant alternatives.

At a recent hearing of the House of Representatives Science, Space and Technology Subcommittee on Investigations and Oversight, the possibility of granting some degree of immunity from libel litigation to journals and investigative committees was discussed. Immunity is a double-edged sword and, therefore, some safeguards will be necessary. However, if journals are asked to publish retractions in controversial situations in which some coauthors are willing to retract and others are not, they face legal problems. A university investigative committee that reaches controversial conclusions that need to be presented to relevant parties faces similar problems. Because the cost of a libel suit can approach $1 million even if the journal or panel is vindicated, cautiously worded libel legislation seems needed if scientific organizations are to make improvements as rapidly as some would like.

The incidence of fraud in scientific publishing is far too low to warrant the introduction of procedures that would undermine a system of publication that has served science and the public well for many years. *Science* will continue to expose misconduct when it occurs, but it will also assume good faith unless presented with evidence to the contrary. We will continue to publish research at the forefront and exciting news of science, warts and all—which means there may be the need for corrections at times. We must honor our obligations to authors, to readers, to reviewers, and to the public. Underlying all, we continue to believe that the overwhelming majority of scientists are honorable men and women, and certainly all of them deserve to be considered innocent until proven guilty—DANIEL E. KOSHLAND, JR.