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Peer Review of Peer Review

Peer review is once again under review. That is appropriate in one sense, as any policy that continually affects many lives and large amounts of money should be appraised periodically. A committee of the National Science Foundation is evaluating peer review; the president of the National Academy of Sciences has mentioned the need for reform; the anguished recipients of "approved but not funded" notices have cried for reform.

Undoubtedly some reforms are needed, but they must be evaluated against the backdrop of the decision-making system that has in the main been responsible for the spectacular developments of modern science. Some of the current demands for reform are activated by a crisis that peer-review committees cannot solve—that is, lack of money. One of the complaints is that in the "good old days" the review committees were more distinguished than they are today. Perhaps so. The members of those old review committees, however, have had time to become well known; the current members have not. Even if they were more distinguished, the old committees were evaluating grants in an era in which the competition was not as severe as it is now, and priority scores for funding were reasonable. With quality as high as it is today, and funding low, a committee of Solomons would have difficulty distinguishing between grants that should and should not be awarded.

Science has done quite well in annual budgets in recent decades. What, then, is causing the current crisis? Not only is there inflation in the cost of materials, but the information needed to prove a point has expanded because more complex problems are being approached. Scientists need more dollars to solve problems because of the advancing sophistication of research. Another factor is that university overhead has taken a higher percentage of the total research money. Finally, and probably most important, there are many more investigators. The general impression of the granting agencies is that current researchers are better trained than were their predecessors. The sheer size of the competition means that each investigator, understanding the law of mass action, applies for multiple grants, thereby increasing the work load of the peer reviewers.

Do scientists think they are writing too many grant proposals? Of course not. Do university presidents think they are asking for too much overhead? Of course not. Do editors think they are requiring too much data for an acceptable article? Of course not. It follows as the night the day that peer reviewers are at fault.

Are peer-review procedures beyond criticism? Again, of course not. Procedures that worked when funding levels were higher certainly deserve reexamination when conditions change, but it is appropriate to reexamine all aspects—university overhead, policy matters that affect the distribution of grants, appropriate levels of total support, and so on, as well as peer review.

The agencies with the most distinguished records of funding fundamental research, the National Science Foundation and the National Institutes of Health, have had peer-review procedures that their constituents respect and defend. When "czars" have been placed in charge of distributing money, unfortunate results have ensued. Those who would like a "spoils system" would like to eliminate peer review. Scientists who are correctly raising a question in regard to improvement in peer-review procedures must take care to emphasize that they want evolution and not revolution, lest others in legislative or administrative circles demand abolishment of a system that has served science and the country so well.—DANIEL E. KOSHLAND, JR.