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## Excessive Zeal to Publish

A small but growing number of scientists have acted irresponsibly in their zeal to appear in print. Actions have included simultaneous publication of the same material in two or more journals, dual submission of manuscripts, and repeated publication at intervals of material that is different in form but not in substance.

The drive to expand bibliographies is understandable, even if some of the methods are not forgivable. Competition for research funds is strenuous. A good publication record is important. Today, in fast-moving fields, studies are often conducted by large predoctoral and postdoctoral teams. Most of the members' names on a publication may wind up cited in the "*et al.*'s." If there are multiple publications, each member can have a turn at being first author. Another incentive for multiple submissions is the regrettable delay that occurs when a journal is slow in processing manuscripts. There is a temptation to submit papers to several journals with the plan of withdrawing from some after acceptance by one. But excessive submissions have deleterious effects.

Excessive publication hinders effective communication among scientists. It places an unfair burden on those who wish to be informed. It steals the time of conscientious reviewers. It increases the work of editorial offices and slows the processing of meritorious material. It creates excessive costs of publication which are borne by someone else, such as the government, libraries, and members of scientific societies.

Statistics on the magnitude of the problem are not available, but reviewers of papers for *Science* have repeatedly called attention to it. Incidents of duplicate submission occur, despite our printed instruction to authors that "papers are considered with the understanding that they have not been published and are not under consideration elsewhere." Other journals have similar policies. Thus far, miscreants have encountered few obvious penalties for their acts. However, reviewers for granting agencies examine the bibliographies cited in proposals and judge them not by number but by content.

Until recently, editors of journals have not penalized authors who make dual submissions other than by rejecting their papers. Editors have enough responsibilities without taking on the task of policemen. However, precedents have now been set for imposing penalties. Benjamin Lewin, editor of *Cell*, and Daniel Koshland, editor of the *Proceedings of the National Academy of Sciences*, have agreed that for a period of 3 years they will refuse to consider any manuscript submitted by a certain author who published similar articles in their journals. Penalties for other infractions will depend on the frequency of the offense. Another editor told of an incident in which it was found that an investigator had submitted the same manuscript to two journals in a particular field. As a penalty for this, all U.S. journals publishing in that field agreed never to consider any manuscript from that investigator's laboratory. These are tough sanctions which should not be invoked lightly.

Until recently, our attitude at *Science* has been perhaps too lenient. When reviewers pointed to duplicate submissions, the papers were rejected. Additional sanctions were not imposed. In the future, a sterner policy will prevail. We will amend our procedures to make the author's commitment to a single submission even more explicit and binding. We will encourage reviewers to inform us about unethical behavior of authors. Such reports will have a bearing on future submissions. In cases of duplicate publication of original research findings involving *Science* and other major periodicals, we will, after careful examination of the facts, consider joining in concerted action against the offender.

We hope that punitive actions will not be necessary. The prospect of them is disagreeable. But the integrity of scientific publication must be maintained, and offenders must be made aware that they have more to lose than to gain by their behavior.—PHILIP H. ABELSON