
Bibliographic Negligence: A Serious Transgression

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For a long time, scientists and others have expressed the need for a "science court"—a panel that would, among other things, sit in judgment concerning matters of fraud, misconduct, and other transgressions by researchers. If such a court is ever established, I hope that cases of bibliographic negligence are among the issues that come under consideration—and I hope that proven cases of such negligence will be dealt with firmly.

As important as the need for meting out punishment to willful perpetrators in this regard, however, is the need to instruct young researchers, preventively, on the ethics and etiquette involved in proper and complete referencing. Acknowledging prior research and intellectual debts is of crucial ethical importance.

A number of senior scientists I know tell me that the current crop of young researchers is neither fully nor diligently citing the literature. If true, this is shockingly ironic, in light of the ever-increasing number of references cited these days in published articles.

Some time ago, I did a study of the literature covered in the *Science Citation Index (SCI)*. Included in my findings, subsequently published in

Trends in Biochemical Sciences (2[4]: N84, April 1977), was the fact that the average biochemistry article contains about 35 references. This is a lot; even assuming a healthy percentage of these references is directly relevant to the investigations reported, it may be that some padding of references is going on. And if this cavalier attitude has become common, then another form of bibliographic misbehavior might well be taking place: the omission of pertinent references—what Columbia University sociologist Robert K. Merton once described as "citation amnesia."

Of course, such amnesia—inadvertent or otherwise—is but one aspect of bibliographic negligence; typographical errors and other mistakes abound. Astronomer Helmut Abt recently studied citations in astronomy journals. He found that more than 5 percent of the references contained errors of one kind or another. Some might make them difficult to locate in the *SCI*. It is comforting to know that some publications—the *New England Journal of Medicine* and *JAMA*, for instance—examine the original papers for every reference cited in a submitted manuscript. Although this is a formidable task, it nevertheless

is crucial to any serious attempt at maintaining a high standard of accuracy and integrity.

I believe that journal editors should require all authors to sign a pledge attesting that they exhaustively searched the literature. In the days when literature searching was manual, scholars had to spend weeks in libraries. In those days, there might have been an excuse for oversights or errors; but with today's widespread availability of electronic databases, it seems inexcusable that such checks are not routinely done.

Certainly, no responsible scientist would file a patent application without conducting a prior search. Indeed, inventors are required to sign a statement vouching for the originality of their research; and the patent examiner's job includes searching for relevant antecedents that may disqualify the applicants' claims of originality. The same stringency should be applied in journal publishing.

Furthermore, it would be reassuring to know that referees were re-

quired to check a sampling of the literature cited—a task that electronic devices now can aid. Citation indexes facilitate a check on whether subsequent authors have published on the same subject.

At present, there is no way to document support for the assertion that bibliographic negligence is increasingly widespread. It was not unusual in the 1950s, when I first suggested the need for citation indexes. I suspect that the severity of the problem lies somewhere between two extremes: the pessimism expressed by some scholars relying on anecdotal evidence and my own belief that the large number of references cited in the literature indicates that researchers and editors are trying to be responsible in this matter.

We can always improve bibliographic practice. And the establishment of more training courses or mentoring in this area certainly would help in alleviating bibliographic negligence. ■