The citation culture
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M. Citation Indexing Should Be Useful

Along with development of hardware, much ingenious thought must obviously go into software; i.e., indexing and other preparation of the documents for subsequent retrieval. Of the new approaches to software, the Panel is particularly impressed with the citation index; we wish to call the technical community’s attention to this apparently powerful, though relatively little used, new searching tool.

All of us are familiar with lists of references at the end of an article. Such lists enable the reader to trace backward in time the antecedents of the article being perused. Every scientist has used such lists to delve more deeply into the subject he is studying. But reference lists only go backward in time; they give no hints as to the influence a given article has had on the development of the subject after the article appeared in print. The citation index is a list of the articles that, subsequent to the appearance of an original article, refer to or cite that article. It enables one to trace forward in time the same sort of interconnections with the literature that, by means of lists of references, one now traces backward in time. Because the indexing is based on the author’s, rather than on the indexer’s, estimate of what articles are related to what other articles, citation indexes are particularly responsive to the user’s, rather than to the indexer’s, viewpoint.

Lawyers have used a citation index, Shepard’s Citations, for more than 100 years. Each year Shepard’s lists all appellate decisions that have cited any previous cases. Since the law is unified in somewhat the same way as is science in that the rule of precedent connects what happens later with what happened earlier, it is not surprising that a bibliographic tool so useful to the lawyer could also be useful to the scientist.

The National Science Foundation is sponsoring trials of citation indexing in genetics and in statistics and probability. The genetics index, for example, will cover all the genetics literature from 1959 through 1963 and will be published in a single volume; it will be kept up to date by yearly supplements. The Panel believes that citation indexing, particularly in combination with permuted title indexing, will come to be used widely, and that its use will further alter both the way in which we think of the technical literature and the way we manage it.