

Citation Frequency and Citation Impact;  
and the Role They Play in Journal Selection  
for *Current Contents* and Other ISI Services

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For more than a year I've been citing what I consider to be one of the most significant papers I've ever published. At long last it has appeared.<sup>1</sup>

The paper deals primarily with the use of our *Journal Citation Index* data bank to determine the frequency with which scientific and technical journals are cited in the journal literature. It shows that a 'large' journal that publishes many articles is, as a rule, more frequently cited than a journal that publishes fewer articles. In addition, however, through development of 'impact factors', it shows that articles in about half of these most-cited journals are cited less frequently than articles in smaller, less-cited journals.

Regretably, the editors of *Science*, where the paper has been published, could not give space to include the originally submitted list of the 565 most-cited journals that are mentioned in 75% of all references published. But we intend to make this list available, and will update it sometime in 1973. The list of 152 journals that appears in the article is now three years old.

It should be significant to our subscribers that all of the 565 journals mentioned above—indeed almost all of the 1000 most-cited journals—are covered in either the *Science Citation Index* or in *Current Contents*.

Since completion of the work reported in the article, we have been able to measure the

'impact' of a much longer list of journals. As a result, we've determined that certain 'small' journals that publish relatively few but very frequently cited articles deserve to be included in the coverage of *SCI* and *CC*.

For many years, we've included review journals in *SCI* and *CC*, and our studies show we were right to do so. Although few are among the most-cited, several are at the top of a list ranked by impact. However, review journals are very expensive to process for *SCI*. The average review article contains from 3 to 10 times the number of references as the typical research article—some contain as many as 2000 references! This must be taken into account when selecting journals for the *SCI*. It is less important, of course, for *CC*.

I hope it is obvious that we take the question of journal coverage very seriously. ISI has devoted enormous time and energy to finding objective criteria for journal selection. Unfortunately, the objective criteria alone don't solve the problem. There is more that we feel should be considered. Readers frequently recommend that we cover journals that, for one reason or another, show up poorly in citation studies. It would be courting disaster to ignore all such recommendations on the basis of citation data alone. In the process we might denigrate the just motives of those who strongly support *CC*, whether from professional self-interest, national pride, and so on. All such

decisions are acceptable provided that we diligently make certain that the *best* is always included.

Every year we go through the painful budgeting process that determines, among other things, how many journals we can add to each ISI service. It's plain that some readers imagine we can and should cover any journal that comes to our or their attention. Some seem actually shocked to learn that ISI is not some sort of inexhaustibly funded quasi-governmental agency. To expect that we cover any and every journal is almost as unreasonable as our own fervent wish that every scientist in the world subscribe to *Current Contents*. This might make it *economically* feasible for us to cover almost any journal, even if space did not call a halt at some point.

Once we have established our annual budget for journal coverage, we are invariably approached by some journal publisher or editor who wants some new journal covered immediately. What are we to do if the journal meets all important editorial requirements for selection? We can either tell the journal's sponsor to wait until next year, or we can ask him to underwrite coverage of his journal in order to help us live within the budget as we must.

It is never easy to drop a journal once it has been added to *Current Contents*. Librari-

ans especially expect a continuity of coverage, but sometimes the facts of life require that we weed out journals that no longer 'cut the mustard.' Retaining a mediocre journal means omission of another, better journal. We are a long way from zero population growth of journals. In fact, older journals not only survive, but the hard core grow in size. Their growth in articles published almost equals the number in new journals. These journal dynamics are probably a healthy phenomenon in scientific communication.

If, in spite of all the hocus-pocus about journal selection discussed here, you feel that a particular journal is improperly omitted from *CC* or from *SCI*, please let us know. But don't fail to tell the editor or publisher of the journal as well. We'll always be responsive to readers' suggestions, though we must hope that you and he will appreciate the economics as well as the 'art' of journal coverage.

1. Garfield E. Citation analysis as a tool in journal evaluation. *Science* 178:471-79, 1972. — In early citations of the article, I used the title on the MS submitted to *Science*: "Citation analysis as a sociometric tool for journal evaluation and science policy studies." Reprints are available.

**The article cited in the reference above is reprinted in this volume beginning on page 527.**