

Citations and Games Scientists Play,
or, The Citation Index Game

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The faculty at Purdue University doesn't limit its interests to football. Last year A. C. Leopold, a scientist from Purdue, discussed the games scientists play.¹ His article was a take-off on the more general theme of gamesmanship developed by Berne² ten years ago in *Games People Play*.

At first, Leopold was quite persuasive. Who can quarrel with the truism that "a scientist cannot readily continue to exist as a scientist unless he can communicate with other scientists." He sagely points out that some interactions between scientists fit into "repeating sets or arrays with predictable and non-constructive outcomes." These become part of either the Prestigious Scientist game, the I-Know-Best game, or the Citation Index game. Here my enthusiasm declined. If there is anyone I can't stand, it's a citation-baiter.

Leopold suggests that the object of the Citation Index (CI) game is to increase the extent to which your papers are cited. "A reasonable first step in advancing the Citation Index game is to cite your own papers as often as possible: this practice is so widespread that you can conveniently find nearly any reference by looking through the bibliography of a subsequent paper by the same author."

It sounds like it might work. But there's a Catch-22 that Leopold misses. If you cite only yourself, then a user of the SCI® can find out about you only

if he knows about you in the first place. This is a strange reason to look for you in the second place. So, painful as it may be, if you cite the work of others they will certainly find your work in the first place. Then they are apt to cite your work in the second place.

Leopold goes on. "The Citation-Index game is also seen as a common component in the remarks or questions posed after a paper at a scientific meeting where the man in the audience may add to his own Citation-Index game score by bringing to the attention of the speaker and audience that he has published a paper on this subject. The 'question' may often sound something like this: 'I published some similar experiments on peas in my 1970 paper in *Plant Physiology*, and . . .'" Presumably, Leopold expects the older generation of scientists to sit in abject silence while younger scientists blithely ignore what has been published.

After reading this I was certain that Leopold's paper was a reject from the *Journal of Irreproducible Results*.³ It's obvious that Leopold didn't carry his idea far enough. The CI game has great potential. Once its rules and strategies are worked out, it could add a whole new dimension to research. Here are just a few suggestions.

You can improve on Leopold's game plan for scientific meetings by finding a friend who needs some citations. Then you get *him* to stand up and

quote from your paper on peas. Both your names appear in the published proceedings, and you double your CI game score.

Rumor has it⁴ that the promotion of some faculty members is now based on citation frequency as determined by examining the *Science Citation Index*[®] (*SCI*). If this is true and you are ambitious you can score CI game points and advance your career by publishing a controversial letter on a subject of wide interest in a leading journal. The letter should contain several gross errors in order to elicit the maximum number of subsequent correction letters with appropriate citations. This method is guaranteed to increase impact and frequency of citation. You may want to start the ball rolling by planting several letters to the editor denouncing the errors. Score one point for each illegitimate citation, one bonus point for each expletive elicited by your article, and ten points for each salary increase you receive.

Abusing your reference list is another way to score points in the CI game which was ignored by Dr. Leopold but, fortunately, was pointed out by Dr. Ingelfinger.⁵ "Authors sometimes collect (not select) references in an apparent effort to document their erudition, not their claims . . . Some citations, moreover, are clichés used both to pad the list and to help the author get started. . . . How many references are included because an author knows that the number of times an article is cited is now scored officially in the *Science Citation Index*?"

However, some apparent cases of reference-list padding may be legitimate (no points are scored for these since they may be constructive and thus not part of the "game"). For example, an

author is justified in citing any reference he thinks a typical reader is likely to think of first and from which, through the *SCI*, he will be led to the author's paper. The most widely known paper in your field of specialization may be the right one to cite. Anyhow, it keeps you in good company. Later on, through co-citation you too may be cited with Einstein.

Those scientists with a literary inclination may want to pad their reference lists with many "appropriate" quotations, always a good excuse for citations. Now your name will turn up in "literary" listings in the *SCI*. Some humanities professor will see it and invite you to write a paper on "The Impact of the Science-Literature Interaction on Western Culture." Thus, even scientists whose papers qualify for the Oblivion Index⁶ can play the CI game. (At least 25 percent of published papers are never cited by anyone, including the author. Any reasonable scientist would agree that most of these papers should not have been published to begin with. They were by doctoral candidates who got paid for writing never-to-be-cited papers in which they cite the faculty adviser. But that gets us into another game.) Score one point for each unnecessary reference.

A variation on the CI game is played in the Soviet Union, where points are scored not by citing or by being cited, but by omitting references to the works of dissident scientists.⁷ The game is slightly unfair to scientists—like the slight advantage of the lions over the Christians. Only the censors can score points. (The Citation Censorship game opened up a whole new area of opportunity for them.)

The CI game is played mainly by conniving scientists who intentionally

manipulate citations in order to increase their own prestige. But the game is made possible by the lack of universal citation consciousness in the scientific world—what can be called citation unconsciousness. (Though it is remarkable how citation conscious some people suddenly become when they are victimized).

Scientists need to be cited. Leopold points out that scientists, just like everybody else, have a built-in need for stroking. Since bodily contact is not always feasible, other signs of acceptance or indications of professional impact on the scientific community are important. "Professional strokes are experienced when he is cited in another scientist's transactions. . . . Strokes are also felt when other scientists use your contributions as components of their own work."

There are good, non-erogenous reasons why you should care who cites your work: to find out if your theory has been confirmed or contradicted; if your method has been improved, or if your ideas have been extended or applied to a field different from your own. You might even get useful sug-

gestions for new directions in your research. If scientific communication were perfect, we wouldn't need SCI. But we do need SCI because people are tired of playing the publish-or-perish game. Now you don't have to falsify experiments. You can write one revolutionary paper and live in style forever after on your citation record. You may have to use a pseudonym but we don't hold that against movie stars. It's better than becoming an alcoholic to get your picture in a whiskey ad.

Recently I encountered a Ph.D. candidate who obviously had not used the library since kindergarten (as the accuracy of his citations showed). In my innocence I asked him if he had heard about the Citation Index game. His adviser was shocked that I could be so vulgar.

Sociologists and psychologists and others continue to be surprised that scientists are mortal, flesh-and-blood, game-playing humans. As they say in Hollywood, "I don't care what you write about me—just spell my name right." That's the first rule in the Citation Index game. It's a hard world.

1. Leopold, A.C. Games scientists play. *BioScience* 23:590, October 1973.
2. Berne, E. *Games People Play*. New York: Grove Press 1964, 192 pp.
3. Lane, E. " 'Scientific journal' plays for laughs." *The Washington Post* 2 June 74, p. F6-7. Digested in *Current Contents*®, No. 28, 10 July 74, p. 10. - The excellent *Journal of Irreproducible Results*, edited by Alexander Kohn, is available from the publisher, Society for Basic Irreproducible Research, Box 234, Chicago Heights, Ill. 60411. It is a quarterly, listed by *Ulrich's International Periodicals Directory* among journals of general science, with a concluding annotation: "Wit & humor."
4. Goudsmit, S.A. Citation analysis [a letter to the editor of] *Science* 183:28, 1974.
5. Ingelfinger, F.J. Why the citation? *New England Journal of Medicine* 290(15): 856, 1974.
6. Garfield, E. The road to scientific oblivion [A letter to the editor of] *J. Amer. Med. Assoc.* 218:886-7, 1971. Reprinted in *Current Contents* No. 51, 22 December 1971, p. 5-6.
7. Ziman, J.M. The problem of Soviet scientists. *Nature* 246:322-3, 1973.