"current comments"

Citation Statistics May Help Scientists Choose Journals in Which to Publish

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In a previous editorial, we listed the 50 most frequently cited journals of science.[1] We've also published a list of the 50 most-cited articles,[2] taken from a list of the 500 articles cited most frequently during the period 1964-1967. Previously, I had also published a list of the 50 most-cited authors.[3]

Analysis shows that almost invariably the most frequently cited articles are published in the same small core of journals mentioned above. It is interesting to speculate what might have been the fate of these "super-classics" if they had not been published in the super-cited journals. In any case, the data on most-cited articles provide even further confirmation of the key role that this core of journals plays in scientific communication.

Another recent confirmation of this phenomenon was obtained by examining a sample of 20,000 "citation questions" used in profiles of the subscribers to our *ASCA*® (Automatic Subject Citation Alert) service. Whereas the 25 most-cited journals account for about 25% of all citations,[4] the same journals account for more than 45% of articles retrieved by citation questions. Since *ASCA* has been working effectively for about seven years, this tells us something important about the indexing value of such citation questions in SDI systems.

However, we have seen and reported separately[5] that the list of journals with the highest impact factors is quite different from the list of most frequently cited journals.[6] While the "elite" journals did publish most of the frequently cited articles, it is interesting to speculate on how much difference there really is between "average" journals and the super-cited journals. If one attributes to the effect of superclassics the high impact ranking of super-cited journals, it may be possible to speculate reasonably that the impact of an important article is independent of the prestige of the journal in which it is published. Indeed, an "elite" journal may actually be one with high impact rather than super-citation. H.V. Wyatt suggests,[7] in a discussion of Avery's classic work[8] on transformation, that publication in the *Journal of Experimental Medicine* may have prevented it from gaining recognition among geneticists as early as he seems to think it should have done.

How will all this help you determine the best place to publish your articles? Hopefully, citation data will help relieve anxiety in making such choices. Publishing in a high-prestige journal which has a large circulation may have less impact on the scientific community than publication in a journal with smaller circulation but high im-

pact. In particular, if the article is listed in *Current Contents*® and other announcement and dissemination media, will it really make much difference whether you publish in a super-cited journal or not? Isn't it, in fact, the quality and timing of the work which eventually determines its impact, rather than the place of publication? Is exposure in the most widely circulated journal what really matters, or should one pay more attention to the audience one is trying to reach?

If one uses requests for reprints as a guide to immediate impact, then it would be my guess that it makes very little difference where you publish, provided the journal is listed in *Current Contents*. As a matter of fact, it may be that a journal with a small contents page is the best "advertising" medium for the aspiring Nobel laureate. Certainly, the contents pages of the huge monolithic journals are formidable as announcement "copy". In the past there were economic arguments which favored publication of large journals. However, the "natural" tendency for new journals to proliferate may indicate something about scientific communication that we have been overlooking. Certainly the incredible page charges for super-cited journals indicates a need for a change. Citation statistics may help to achieve better understanding of these dynamics.

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3. ----------. Citation indexing for studying science. *Nature* 227:669-671, 1970. Reprinted in: *Current Contents*, No. 46, p. 45, November 18, 1970.
4. ----------. The *Science Citation Index*® as a blueprint of the journal literature. *Science* (in press).
5. *Ibid.*
6. ----------. & Sher, I.H. New factors in the evaluation of scientific literature through citation indexing. *American Documentation* 14(3):195-201, 1963.
7. Wyatt, H.V. When does information become knowledge? *Nature* 235:86-89, 1972.
8. Avery, O.T. et al. Studies on the chemical nature of the substance inducing transformation of pneumococcal types; induction of transformation by a desoxyribonucleic acid fraction isolated from *Pneumococcus* type III. *J. Exp. Med.* 79:137, 1944.