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Cost/Benefit Analysis and Core Journal Collections in Scientific Libraries

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Recently 1 referred to Bradford's Law in connection with our citation studies of the frequency with which journals are cited in the Science Citation Index® 1. Upon returning to ISI® after an extended trip through Africa and South America, I was pleasantly surprised to find in Nature a letter to the editor written by one of my coworkers. His succinct remarks reminded me of a previous discussion² of the journal evaluation and acquisition problem, about which I shall have a great deal to say in coming months. During my trip, I lectured on the subject of "core science libraries" and displayed a list of the 100 most frequently cited scientific and technical journals. Having already given you a list of the 50 most cited authors of non-journal items3, and the 50 most cited papers⁴, I hope that a soon-to-be-published list of the 50 most cited journals will prove equally interesting.

Weinstock's letter⁵ is reproduced below, and includes the closing salutation "Yours faithfully" with which the editor habitually equalizes the sentiments of all correspondents. I continue to wonder why a swinger like John Maddox insists upon this archaism when more expressive and pertinent greetings might be appropriate -- in this case perhaps "Yours for better communication" or "Yours for Bradford's Law (and Order?)".

- 1. Garfield, E. The mystery of the transposed journal lists; wherein Bradford's law of scattering is generalized according to Garfield's law of concentration. Current Contents®, #31, p. 5-6, August 4, 1971.
- 2. Decision making in libraries acquisitions; indexes or journals? Current Contents, #15, p. 4, April 9, 1968.
- frequently cited non-journal items. Current Contents, #32. p. 5-9, August 11, 1971.
- 4. -----. Citation indexing, historio-bibliography, and the sociology of science. In: Proceedings of the Third International Congress of Medical Librarianship, Amsterdam 5-9 May, 1969, ed. pp. 187-204. Reprinted in: Current Contents, #15, pp. M23-M41, April 14, 1971.
- 5. Weinstock, M. Bradford's law. (A letter to the editor of) Nature 233:434, October 8, 1971.

Bradford's Law

SIR,—In considering the application of Bradford's Law of Dispersion¹ as a

library or information centre it is pleasant to contemplate a bibliophilic Utopia of a complete collection in a library with unlimited space and acquisition funds. guide to acquisition policy in the research | Utopias are rarely found, however, and the library does have limited resources. Given this restriction, the librarian or acquisitions specialist, in even the largest and most pecunious libraries, must make choices. These choices are rational only to the extent that the library collection maximizes the timely provision of requested documents to the satisfaction of the largest number of users.

In this light, A. Faser's letter² suggesting that a library is derelict in not purchasing a specialized journal of interest to only one user treats the occasional request with the same degree of importance as the on-going demand for the heavily used journals. An inventory policy in a department or food store, part-supply depot, manufacturing concern or library, based on ignoring frequency-of-demand distributions, leads to inefficient allocation of resources. Designers of sewer and flood control systems know they cannot design economic drainpipe and culvert systems of sufficient capacity to handle the runoff from the one-in-a-thousand chance that rainfall will exceed, say, 6 inches in any 1 h period. And mass merchandisers stock only a few or no items in the extremely low and high size ranges of shoes, hats and all attire in between.

Bradford's Law promulgates that a library can supply *most* of the requests for material with a relatively modest inventory of book and journal titles,

geared to the normal pattern of demand. This demand pattern is one in which a relatively few items from among all possible items in the inventory satisfy a majority of the actual transactions. Progressively fewer transactions are satisfied from the balance of the inventory, or from further augmentation of the number of titles held. Abiding by the Bradford distribution, then, is an important factor in the library's overall success at demandfulfilment.

The most efficient way for a library to exploit its collection and maximize utilization of its document file is to share its bibliographic resources with as many patrons as possible. It cannot reasonably be expected to serve every individual request. Carried to the extreme, if the only requests were one-time requests, there could not be an economic central library. The most efficient way of handling such a situation would be for each individual to have his own private collection.

Yours faithfully,

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¹ Fairthorne, A., J. Doc., 25, 319 (1969). ² Faser, A., Nature, 227, 101 (1970).