

that suggests what the outcome would be. *Webster's Unabridged* has failed to satisfy fully 50% of my searches for well-established scientific terms and scientific usages of common terms. Failure is particularly noticeable for mathematical terms, as for example, *complex manifolds, capture-recapture models, starlike functions, convergence groups*, etc. Mathematics may be an extreme example, but the problem of the currency of dictionaries and encyclopedias is by no means confined to mathematics.

Consider what a printed dictionary really is. It is a list of words put together by an editor on the basis of study and/or intuition—usually the latter. In this way he determines just what words are most likely to be consulted for definition. I doubt that word frequency analysis is used much. Consequently, the advent of computer storage and search of scientific texts could have a profound effect on dictionary compilation and the treatment of scientific usage.⁽⁵⁾

Why are we so patient with the obsolete methods of dictionary and encyclopedia makers? Most of them make some pretense of updating and revision, but I suspect that in most cases it is all a matter of citable gesture demanded by marketing considerations for the benefit of libraries and salesmen.⁽⁶⁾

The work and the blame, however, cannot be left fully with the lexicographers and encyclopedists. Scientists must give them something to work with. Frequently, the definition of a scientific term cannot be found even in the "primordial" article which first used it.⁽⁴⁾ More frequently, even if defined, the meaning of the word may have evolved along with further research of the concept. Occasionally dictionary makers can find near-de-

finitions or definitive usages in articles and books, and these they liberally quote.⁽⁷⁾ Rarely, scientists will make a special effort to define a word exactly. Nor do editors demand it. I have seen recently two encouraging instances in which scientists see the need for new words, coin them and supply needed definitions.^(8,9)

1. Calder, R. "Communication or jargon?" In *Penguin Science Survey 1964 B*, ed. by S.A. Barnett & Anne McLaren. Baltimore: Penguin Books, 1964, 256 p; p. 232-45.
2. *The Scientist Speculates*, ed. by I.J. Good, A.J. Mayne, & J.M. Smith. London: Heinemann, 1962, 413 p.
3. Weinstock, M. *et al.* Systems design implications of the title words of scientific journal articles in the *Permuterm Subject Index*. Paper presented at the 7th Annual National Information Retrieval Colloquium, Philadelphia, May 7-8, 1970.
4. Garfield, E. *Permuterm Subject Index*, the primordial dictionary of science. *Current Contents*[®] No. 22, 3 June 69, p. 4.
5. ————. Full-text searching systems just around the corner. *Current Contents* No. 36, 5 September, 73, p. 7-8
6. Cole, D.E. Encyclopedia comparison: the characteristics of *Americana* and *Britannica*. *RQ* 12(3): 220-6, 1973.
7. I learned recently that *Webster's Unabridged* contains more than 14,000 such definitive usages. Among them is one quoted from my own work. (See page 1354 of the 3rd Edition, where, for the first definition of *macro*, Webster quotes: "the book as the *macro* unit of thought—Eugene Garfield"). Nothing else I have accomplished in my entire career has earned from my family the esteem accorded this appearance of my name in *Webster's*.
8. Vallentyne, J.R. & Tracy, H.L. Demophora and demophoric. *Science & Public Affairs* 29(5):24, May 1973.
9. Lebel, R.R. Grafting neologisms. *Nature* 242:485. 1973.