"""""current comments"

Jabberwocky, the Humpty-Dumpty Syndrome and the Making of Scientific Dictionaries!

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In the early years of the SCI[®], I gave hundreds of lectures to explain the what and the why of citation indexing to skeptical scientists and librarians. Nowadays, ten years after, that job falls primarily to ISI[®]'s representatives around the world, and to an increasing number of instructors in library schools and information centers.

One of the hardest jobs in those early lectures was explaining briefly how easily the SCI gets around the vocabulary problem in retrieving information—I called this the scientific jabberwocky problem. I said that traditional indexers suffered from the Humpty-Dumpty syndrome.

I was reminded of those early lectures when I ran across a delightful essay by Richie Calder on jargon in science.(1) Calder gives interesting examples of both jabberwocky and humpty-dumptyism in science. The first invents a word, but doesn't explain what it means. The second uses an old word with a new and precise meaning, but doesn't explain what the new and precise meaning is. The author (or indexer) in either case is content in his own knowledge of what he meant--he has after all controlled his vocabulary-and doesn't bother about confusion elsewhere.

I have nothing against new words or new uses for old words. I insist, however, that their use should be accompanied by an exercise of responsibility. Every scientist who uses a new word or reshapes an old one should be required to supply a definition suitable for a dictionary or encyclopedia. In areas of such concern, I incline toward coercionthe idea of legislating such a requirement appeals to me. But when push comes to shove, I should be concerned lest such a requirement stifle free expression of ideas that are not completely "well-formed," as they say in linguistics, or when they are still only "half-baked," as they say elsewhere. (2)

Scientific vocabulary like all natural language is a living thing. Jargon, jabberwocky, and humpty-dumptyism are all quick-and-dirty attempts to keep up with causes of change, or to circumvent the work required to deal with change properly. The rate of change is reflected in our Permuterm ® Subject Index, (3) which reports the approximate frequency with which words, new and old, are used in science. I have suggested previously that the PSI provides, for the first time, a tool for properly updating general and scientific dictionaries, but it has yet to be used for that purpose(4).

It would be an interesting exercise to look up the 10,000 words most frequently indexed in the PSI and determine how many of them are defined in one of the unabridged dictionaries. I have some experience

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)

- 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.
- The Scientist Speculates, ed. by 1.J. Good, A.J. Mayne, & J.M. Smith. London: Heinemann, 1962, 413 p.
- 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.
- Garfield, E. Permuterm Subject Index, the primordial dictionary of science. Current Contents® No. 22, 3 June 69, p. 4.
- Full-text searching systems. just around the corner.
 Current Contents No. 36, 5 September, 73, p. 7-8
- 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.
- 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.