

Uncitedness III—The Importance of
Not Being Cited

February 21, 1973

I have written frequently about the importance of being cited, and about the significance of being frequently cited. I have also written, in seriousness and in jest, about the uncited paper and the uncited author, and even about the stratagems some men will use to avoid the uncited state.¹⁻⁴

I have not, however, mentioned an important type of uncitedness discussed recently by Professor Albert Wollenberger of the German Academy of Sciences in Berlin.⁵

There is uncitedness and uncitedness! First, there is the uncitedness of the mediocre, the unintelligible, the irrelevant, the eccentric—that which leads to the *Index Oblivionis*.⁶ Second, there is the uncitedness of the meritorious but undiscovered or forgotten, the uncitedness of the “village Miltons” of scientific research. (I have my doubts about these. Mendell is too often and unwarrantedly used in proof of their dubious existence.)⁷ Finally, there is the uncitedness that I will here name *Uncitedness III*. It is an uncitedness *par excellence*, the uncitedness of *distinction* that comes to those whose work has become so well known (and presumably been previously so heavily cited) that one finds it at first tedious, then unnecessary, and finally actually gauche to cite such men at all.

I have learned, for example, that at least one article by Professor Wollen-

berger may be lifting him onto the plane of *Uncitedness III*. The *Science Citation Index*[®] shows that his 1960 article on a technique for rapid cooling of large tissue sections⁸ has been cited with increasing frequency since it was published: respectively 5, 9, 9, 18, 23, 21, 28, 30, 37, 49, 46, and 54 times in the years 1961 through 1972. Since the “average” article is most heavily cited in the two years following publication, and since the “average” cited article is cited only 1.7 times per year,⁹ there is obviously something unaverage about this article. Despite this impressive citation record, I suspect that the article is now more often cited *implicitly* than *explicitly*.

An explicit citation ends up in a footnote or reference and gives author, title, journal, volume, page, and year. An *implicit* citation, made by incomplete, casual, or mere last-name reference in the text, indicates that the author assumes the reader will know that the theory, the method, or the technique referred to is part of their common working knowledge and need not be explained or verified. Thus, this article is probably much less explicitly cited than it could be because people now refer simply to the “Wollenberger technique,” or may casually mention the “use of quick-frozen sections.”

The road to *Uncitedness III* varies in difficulty from discipline to discipline.

It is claimed that biomedical research workers are comparatively relentless in their explicit citation of methods. Presumably their physical-sciences colleagues are much more relaxed about the matter. Thus, one might conclude that it is easier for a physicist to achieve Uncitedness III than for a biologist. Further, a *device* will probably get you quicker to Uncitedness III than a *method*. However, the chemical literature abounds with reaction mechanisms and methods of synthesis that are no longer explicitly cited, so the assumption warrants careful appraisal.

Implicit citations undoubtedly occur with equal frequency in the case of any highly cited article or book, especially where methods are involved. I doubt that this phenomenon should cause concern when using citation data to forecast Nobel Prizes.¹⁰ Uncitedness III applies primarily to people who are already so heavily cited that their eminence is universally appreciated by their peers. However, to the extent that citation analysis is used as a continuing measure of certain types of scientific activity, the implicit citation practice is unfortunate. The extent to which people use quick-frozen sections may not be accurately reflected thereby. However, a year-by-year analysis of such citation frequency might show us the "decay" rate of explicit citation from which one might conclude inversely that the method was in fact being used more but cited less. All this is interesting theory but the case of the Lowry method¹¹ seems to disprove it, and I suspect that one might find that as an important method is increasingly cited explicitly it is being cited implicitly on an exponentially larger scale!

1. Garfield, E. Uncitedness and the identification of dissertation topics. *Current Contents* No. 15, 12 April 1972, p. 5.

2. ----- . When is a negative search result positive? *Current Contents* No. 32, 12 August 1970, p. 4-5.
3. ----- . Citation measures used as an objective estimate of creativity. *Current Contents* No. 34, 2 September 1970, pp. 4-5.
4. ----- . Publication counting vs. citation counting in evaluating research. *Current Contents* No. 22, 2 June 1971, pp. 5-7.
5. Wollenberger, A. Personal communication, 28 March 1972.
6. Garfield, E. How *SCI*® bypasses the road to scientific oblivion. *Current Contents* No. 45, 10 November 1971, pp. 5-6.
7. ----- . Would Mendel's work have been ignored if the *Science Citation Index* was available 100 years ago. *Current Contents* No. 47, 25 November 1969, pp. 5-6. As I have pointed out, Mendel can scarcely be regarded as one of the *héros manqués* typified by the "village Miltons" of Gray's *Elegy*. Village Miltons don't get cited, as was Mendel, by contemporary editions of the *Encyclopedia Britannica*.
8. Wollenberger, A. Eine einfache Technik für extrem schnelle Abkühlung grösserer Gewebestücke. *Pflugers Arch. ges. Physiol.* 270:399-412, 1960.
9. *Science Citation Index 1971 Guide & Journal Lists*, 10 vols. (Philadelphia: Institute for Scientific Information, 1972). See pp. 16-17 of the introductory matter in vol. 5.
10. Garfield, E. Citation indexing for studying science. *Nature* 227: 669-71, 1970.
11. Lowry, O.H. *et al.* Protein measurement with the Folin phenol reagent. *J. Biol. Chem.* 193: 265, 1951.