

# Enigmatic medical citations

During my last 30 years as a student, examiner, opponent, peer or as a normal inquisitive reader of academic texts, I have come across a number of puzzling things. What is «puzzling» will of course depend on the observer. Here, I will restrict my viewpoint to a phenomenon that most readers, in some way or to some extent, will perceive as strange or perplexing: citations that fail to identify where the source can be found, or fail to point out where one should look in the source referred to.

**Ole Bjørn Rekdal**

*obr@hib.no*

Faculty of Health and Social Sciences  
Bergen University College

The basis for this conundrum is fairly simple: When I read a paper with a more or less scientific content (A) I sometimes take an interest in a source (B) referred to in A. There may be various and good reasons for this interest, and if it warrants it, I obtain the source. The background to my interest tends to be that the facts claimed by A with reference to B indicate that I can learn something from B, and that this could possibly prove useful in some context or other. In other cases, I may harbour some doubts. Is it true that what A claims to be found in B in fact is found in B? Is it possible to interpret B differently from how A has?

Regardless of the background to the interest, it is essential to get hold of B to find out what it says. In this process some problems and challenges may occur. The most serious one occurs when the citation is so erroneous or incomplete that finding source B is impossible. There is no reason to dwell on this type of citation, since most readers would agree that this is bad form. Neither is it worth wasting time and valuable column space on the unwillingness of some medical professionals to search for primary sources, as well as on editors who in their failure to crack down on this practice let their journals be turned into playgrounds for urban myths and parlour games. The «whispering game» is a prime example of what may happen when a message passes through several links in a chain, and is thereby also an excellent illustration of why academics should strive to use primary sources.

Even though most medical professionals have grasped the point that the use of secondary sources is fraught with risk, this does not mean that the opportunities for games and tomfoolery are gone. When referring to a book or another comprehensive or com-

plex source document, many authors take the opportunity to introduce enigmas of varying difficulty into their citations.

## Enigmatic citations

The main point in this game consists in attempting to guess where in the book one can find the material that has inspired the author. You see, the author has left out the page number in his citation, and the reader is left to his own devices in solving the riddle. Nobody is there to say «you're getting warmer», nor is the solution given in small print at the bottom of the page, such as the historians tend to provide. Nor is the solution provided in the next issue of the journal, as tends to be expected by

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men and women of my generation, with their experience of cartoons and weeklies. In other words, if you fail to solve the riddle it remains unsolved forever – unless drastic steps are taken.

In the age of e-mail it has become far easier to contact the author directly to ask politely for further clues that can help in the search for the matter hinted at by the citation. If you are really lucky, you will meet a friendly author with a good memory or an orderly archive, who will quickly and expediently provide the missing element of the address – in this case the page number. In fact, we should all be better at using this opportunity, and not only because we wish to locate knowledge and interesting items in sources that we come across. An author

who is inundated by such requests – perhaps with a copy to the editor – will most likely learn an important lesson about citations, and will probably think twice before sending his/her readers on a wild goose chase again.

Another solution to the problem of missing page numbers is to use a knife – not on the creator of the riddle, but on the book that he/she refers to. You can cut the spine off the binding and run the loose pages through a scanner with a sheet feeder. Then you can apply so-called OCR (Optical Character Recognition) software to the resulting digital file, and hey presto, you have the opportunity to use various search terms to locate the place you are looking for.

To be honest, I have used this strategy in several cases of frustration, not to mention desperation. This obviously implies that I have mutilated books that had cost me a fair amount of money, but it is still a case of appropriate resource management when compared to the number of hours I would have needed to spend on leafing back and forth.

This is not only a matter of irritating negligence, resulting in a waste of the readers' time and energy. When such riddles remain unsolved, they also represent effective obstacles to key forces of scientific progress: cumulative knowledge production and testing of arguments and interpretations.

## Size matters

There is an ample body of literature indicating that medical researchers occasionally cut some corners when they compose their citation lists and references. To be honest, I am neither surprised, nor shocked by the voluminous literature on «reference accuracy» or «citation errors» in the field of medical science, other than by the fact that so many find it worthwhile to chase stray commas or erroneous abbreviations instead of concentrating on a far more interesting issue: whether the facts that A claims to find in B in fact are found there. A prerequisite for being able to decide this key question is that source B can be obtained



Illustration: Stein Løken

with a reasonable effort, and the section of B that is the nub of the matter.

The sources that medical researchers mostly base their work on tend to be small articles that are easy to look through, even though the page number may be missing in the references. However, many medical researchers still read books, and occasionally even refer to them as sources. Here, the problem arises, especially when B is a large, weighty tome and A does not provide the readers with a clue to where he should start looking or reading. In brief, A refers to something in B without providing what is known as a «locator», for example the page number, the chapter or the section in question. There is a difference between a 3,000-word article and a book with 1,010 pages. In haste, if the haste is sufficient, this point may be easily forgotten.

This type of citation practice, with missing locators, is so widespread among medical researchers that the phenomenon cannot be explained as a result of haste or various forms of economising on paper and ink. In many cases, such enigmatic citations occur consistently throughout a publication, and sometimes throughout an entire academic career. This must involve something far more serious than individual cases of

misplaced humour or other types of human failure.

### What are the publication manuals saying?

The «AMA Manual of Style: A Guide for Authors and Editors» is one of several important sets of guidelines for medical authors, and the answer we are seeking is fairly succinctly formulated in terms that leave little to chance (1). When referring to a specific page in a book, this page number should be provided at the end of the citation in the concluding list of references (p. 52–3). If the same book is referred to repeatedly (p. 44), the source should be named only once in the list of references, and the relevant page numbers should be included in the referring endnotes in the body of text, like this: <sup>(1p44)</sup>

Thus, here I refer to page 44, one of the 1,010 pages in source no. 1, in this case the AMA Manual of Style.

Many medical journals, however, refer to another authoritative source in their instructions to authors: the International Committee of Medical Journal Editors and their «Uniform Requirements for Manuscripts Submitted to Biomedical Journals» (2). Here, finding the information we are

searching for in our case is not equally straightforward. First, you need to click your way to another website called «Citing Medicine» in the National Library of Medicine (NLM), but when you get there, you really have a lot to play around with (3).

Here we also find the requirement that page numbers or other locators be provided at the end of the citation in the list of references when referring to «parts of books». If an author includes a verbatim quote, rephrases a paragraph or cites a specific and delimited argument from a book, he/she by necessity uses a «part of» a book, and as such, the matter should therefore be straightforward. The problem is that the collection of examples associated with this point may give rise to some uncertainty. It is not made unmistakably clear whether a verbatim quote, a rephrasing or a specific argument should be treated as «part[s]» similar to other «parts» (such as tables and figures), simply because no illustrations of these are provided in the formidable collection of examples that accompany this chapter (4).

The solution to how to proceed to the next station in this treasure hunt is embedded in the introduction to NLM's website. Here it is stated that «Citing Medicine» is based on

documents prepared by the International Organization for Standardization (5) and the National Information Standards Organization (6). Finally we have found two of the stone tablets that form the basis for «Citing Medicine», and these two authoritative sources briefly and simply state that locators must be provided when referring to a specific part of a larger publication, such as a book (5:9; 6:43).

One does not need to search for long in prestigious medical journals to come across examples of medical researchers who fail to follow these rules, all of whom have had peers and editors who have allowed them to do so. What may be the cause of this phenomenon?

The most obvious explanation would be that many medical researchers are unaware of what ISO (5), NISO (6) and the AMA Manual of Style (1) have to say about the matter, which in a certain way is understandable, considering the inaccessibility of the two former sources and the size of the latter. I am afraid that the matter is hardly that simple. Even though an author may never have seen these sources, one would reasonably expect that with the aid of good, old-fashioned common sense he or she ought to understand that not only would it be useful, but in some cases absolutely essential for a reader to have locators provided for a source document as comprehensive as a book. Most of us apply this logic unquestioningly on a daily basis in a variety of contexts. For example, if we need information to find our way to a specific house, we would like to have not only the name of the street, but also the house number, and having this number is even more essential when the street is long or when it is difficult to orient yourself along it.

### The great enigma

In some cases, a deliberate omission of important and useful locators may be a completely rational and wise act. There could be a number of reasons why an author would not want a reader to retrieve or find his way around the source referred to. It is especially smart to introduce such obstacles in cases when the author is stretching the limits of integrity, is plagiarising or cheating in other ways, for example by inventing facts, lying, distorting or borrowing someone else's formulations without putting them in quotation marks. The same strategy can be used to conceal that the author has been in a hurry, or for other reasons has chosen to base his or her arguments on secondary sources in cases when they should not have done so.

A third example of instances where it may be smart to build obstacles to critically-minded readers is when the citations are used as a placebo or as a magic wand. A citation may act as a useful instrument to provide an aura of authority and force to weak points that are in dire need of such, and it may also successfully seduce the readers into believing that complicated issues are far simpler and easier to relate to than they in fact are. When citations are used as a placebo or as a magic wand, page numbers and other locators are not only superfluous. Accurate and complete references also reduce the chances of success of this trickery, exactly as the placebo effect may disappear when we find out what we have actually ingested. Stated more bluntly: accurate citations that include the required locators make it far easier to decide whether the pomposity is a cover for monstrosity.

Those who have a clear conscience should have no reason to cover their sources with a smoke screen. Here we have arrived at

what to me appears to be the greatest enigma of them all: Why are useless references found in otherwise brilliant medical publications that clearly are based on a formidable and thorough research effort conducted by a number of persons of impeccable integrity? No matter what the explanation of this phenomenon may be –appropriate dissemination of science and knowledge it most definitely is not.

*I am grateful to Odd Mørkve, Kjersti Hopland and Marte Jørgensen for their critical and constructive comments.*

### Ole Bjørn Rekdal (b. 1959)

is a social anthropologist, dr. polit. and Associate Professor at Bergen University College.

**Conflicts of interest: None declared.**

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*Received 2 June 2011, first revision submitted 28 August 2011, approved 6 October 2011. Medical editor: Petter Gjersvik.*