Editorial

L. Philippot · J. T. Trevors

Published online: 7 February 2009
© Springer Science + Business Media B.V. 2009

1 Irrelevant Citations in Scientific Literature

Publishing in recognized international journals is not sufficient. The publications must eventually be cited. This increasing importance of citations is due to the evaluation or quantification of an individual's research achievements. This is reflected by the on-going success of Hirsch's *h*-index (Hirsch 2005). However, reservations have been made about the use of citation-based indices for evaluating scientists. For example, publications can be cited for reasons that are not related to the quality of the research. Publications are also cited when they are contradicted or exaggerate results. It can also be argued that review articles or articles describing new significant methods are usually more cited than some primary research publications.

Paradoxically, while increasing significance is given to citation-based indices, there is a proportion of irrelevant citations in the scientific literature. In some cases, there are so many published articles in

some areas of research that new publications are simply missed, are in press but not published, or delays in publication after acceptance result in them being missed at the time another paper is being published. Another example of an irrelevant citation, which is less excusable, is citing a publication because it contains a sentence or more referring to the original publication or to another article citing the original research. Since self-citation can impact the *h*-index, it is easy to understand why an author cites himself. Another advantage of irrelevant citations is that it can rejuvenate the reference list, which can then look more up to date for a non-expert peer reviewer. However, this was probably not the intention, but rather indicates a poor or superficial knowledge of the background information by the author(s). Examples of irrelevant citations may also be found in articles from groups well established in their research field. In that case, irrelevant citations are more likely to reflect a lack of scientific rigor but also the fact that the authors probably cut time and effort during writing by not checking the references. It is also possible that irrelevant citations are not purely fortuitous. Thus, they can also be an easy, but risky, way to cite the scientists who would most likely be the ones evaluating your manuscripts or applications.

A sad scenario is when a publication citing an original work becomes more popular than the original work itself and turns into "The reference" to cite when referring to it. This scenario is more likely to happen when the publication cited irrelevantly orig-

L. Philippot (✉)
INRA, Université de Bourgogne,
UMR Microbiologie du Sol et de l'Environnement, CMSE,
BP 86510,
21065 Dijon cedex, France
e-mail: philippo@dijon.inra.fr

J. T. Trevors
Department of Environmental Biology,
University of Guelph,
Guelph, ON, Canada N1G 2W1
e-mail: jtrevors@uoguelph.ca

inates from a well-established group in comparison to the group which performed the original study. The group irrelevantly cited is of course not the one to blame. This highlights a citation snowball effect, which refers to the citation of a publication simply because somebody else cited it. The citation of frequently cited articles mainly results from scientists who do not use sufficient time to search the literature to find the correct references. Again, this citation snowball effect can be independent of the quality of work performed but could be related to the notoriety of the authors. Evidence of the reproduction of a citation found in another article is provided when the same citation error, such as the misspelling of a name, is found in different articles.

Fortunately, irrelevant citations are rather easy to track in most cases for referees being experts in the field. However, researchers are fighting against time not only as authors but also as referees. As a consequence, when researchers accept to review a manuscript, and in some cases they have to because of

a membership to the editorial board, they could be tempted to minimize the time spent to perform the review to be more productive. In that case, the focus of the review is more likely to be on the analysis of the results and interpretation, and not on the reference list.

Citations are an integral part of any scientific publication and should deserve as much as attention and rigor as the remainder of the article. Due to the importance of citations in a scientist's career, efforts should be made by both the authors and the reviewers to make sure that the reference list meets the criteria for publication and gives the credit to the correct author(s).

References

- Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, 102, 16569–16572.