

Home	Table of Contents	Titles & Subject Index	Authors Index
----------------------	-----------------------------------	--	-------------------------------

Editorial

[Alireza Noruzi](#)

Fundamental Differences between Hyperlinks and Citations

The Web is a *growing organism* and one of the most important characteristics of the Web is that a web page has ability to link to other web pages through hyperlinks. Since 1996, hyperlinks have been studied extensively by applying existing bibliometric techniques to the Web ([Larson](#), 1996, [Ingwersen](#), 1998). The Web affords rich opportunities to apply and adapt bibliometric techniques to new contexts and content ([Turnbull](#), 1996; [Cronin](#), 2001).

On the other hand, "citations in conventional print publications have traditionally been used as indicators of links between researchers, and it is tempting to regard web links as analogues of citations. One obvious difference is the nature of the documents that are linked. Citations in conventional print publications are generally between research publications, while web links may be between a wide variety of publication types: personal home pages, subject resource guides, etc." ([Smith](#), 2004). Therefore, "anyone who can create a web page and post it on the Web could link to any other page, unimpeded by any quality control similar to that of a scholarly journal" ([Vaughan & Thelwall](#), 2003), but in practice web links are not entirely equivalent to citations in the scholarly literature ([Smith & Thelwall](#), 2001). After reviewing the relevant literature on citation analysis, [Thelwall](#) (2003) argues that, "other than links in e-journal articles and online copies of preprints, very few hyperlinks between academic sites are created as a result of a necessity on a par with that for citations."

So naturally there exist several differences between hyperlinks and journal citations. "The major difference is that journal citations occur in refereed documents and therefore their production is subject to quality control and they are part of the mainstream of academic endeavor, whereas hyperlinks are none of these things. This makes web links a more complex phenomenon than journal citations. Thus, several authors warn against taking the analogy between citation analyses and link analyses too far" ([Björneborn](#), 2004, p.27). However, "a very approximate analogy can be made between citation analysis and link analysis" ([Vaughan & Thelwall](#), 2003). A study by [Smith](#) (2004) shows that "the nature of web links are more varied than print citations. And only a sizeable minority were analogous to citations."

There is virtually no control over what people can publish on the Web. It is therefore reasonable to argue that the Web is unorganized and anarchic in nature because anyone can publish any content and create hyperlinks pointing elsewhere on the Web. Thus, in contrast to the conventional print publications, web resources and hyperlinks can update or remove over time. In a perfect web society, web authors link to a web resource if they (i) know of the web resource, (ii) believe it to be relevant to their own work and (iii) believe it to be important enough to link explicitly (i.e., there is both a relevance and an importance judgment inherent in choosing what to link). Therefore, links -especially text links- can be used as one measure of the importance and influence of web resources, as well as the

importance of the web sites they are published in and the web authors that wrote them. The total number of times a web resource is backlinked is called its *link impact*. The total number of backlinks to a web resource (links pointing to a web resource from other sites) provides a *link impact* score for that web resource. Within link-based search engines the link impact -as well as other performance metrics- can be used to rank web resources when performing a search.

It could be concluded that web resources are *volatile* and can change or disappear rapidly, thus it is almost impossible to link a web resource on the Web being sure that the resource will still exist in a year's time. Consequently, authors of scholarly works should avoid citing documents published online (especially if published outside of electronic journals), as quite often linked web resources will be moved or disappear and the hyperlink will not work any more. Also, the content of any linked web resource can be changed by the linked author at any time.

References

- Björneborn, L. (2004). *Small-world link structures across an academic web space: a library and information science approach*. Ph.D. Thesis. Royal School of Library and Information Science, Copenhagen, Denmark. p. 27.
- Cronin, B. (2001). Bibliometrics and beyond: some thoughts on web-based citation analysis. *Journal of Information Science*, 27(1), 1-7.
- Ingwersen, P. (1998). The calculation of web impact factors. *Journal of Documentation*, 54(2), 236-43.
- Larson, R.R. (1996). Bibliometrics of the World Wide Web: an exploratory analysis of the intellectual structure of cyberspace. In: Hardin, S. (Ed.), *Proceedings of the 59th Annual Meeting, ASIS 96*. Baltimore, pp. 71-79.
- Smith, A.G. (2004). [Web links as analogues of citations](#). *Information Research*, 9(4), Paper 188. Retrieved August 5, 2005 from <http://informationr.net/ir/9-4/paper188.html>
- Smith, A.G., & Thelwall, M. (2001). Web impact factor and university research links. In: *Proceedings of the 8th International Conference on Scientometrics and Informetrics (ISSI)*, (Sydney, Australia, July 2001). pp. 657-664.
- Thelwall, M. (2003). [What is this link doing here?](#) Beginning a fine-grained process of identifying reasons for academic hyperlink creation. *Information Research*, 8(3), Paper 151. Retrieved August 5, 2005 from <http://informationr.net/ir/8-3/paper151.html>
- Turnbull, D. (1996). [Bibliometrics and the World Wide Web](#). (Technical Report FIS-12-19-1996-1). Faculty of Information Studies, University of Toronto. Retrieved August 5, 2005 from <http://www.ischool.utexas.edu/~donturn/research/bibweb.html>
- Vaughan, L., & Thelwall, M. (2003). Scholarly use of the Web: what are the key inducers of links to journal web sites? *Journal of the American Society for Information Science and Technology*, 54(1), 29-38.

Bibliographic information of this note for citing:

Noruzi, A. (2005). "Editorial: Fundamental Differences between Hyperlinks and Citations." *Webology*, 2(2), editorial 4. Available at: <http://www.webology.org/2005/v2n2/editorial4.html>
