

# Citation and Impact Factor

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- ▶ A citation is a reference to a published or unpublished source (not always the original source)
- ▶ It is an abbreviated alphanumeric expression embedded in the text body of an intellectual work, as an entry in the bibliographic references section of the work for the purpose of acknowledging the relevance of the works of others to the topic of discussion at the spot where the citation appears.
- ▶ Often the combination of both the in-body citation and the bibliographic entry constitutes what is commonly thought of as a citation (whereas bibliographic entries by themselves are not).

- ▶ A prime purpose of a citation is intellectual honesty, to attribute prior or unoriginal work and ideas to the correct sources, and to allow the reader to determine independently whether the referenced material supports the author's argument in the claimed way.
- ▶ The forms of citations generally as per one of the generally accepted citations systems, such as the Oxford, Harvard, MLA, American Sociological Association (ASA), etc.
- ▶ A bibliographic citation is a reference to a book, article, web page, or other published item. Citations should supply sufficient detail to identify the item uniquely. Different citation systems and styles are used in scientific citation, legal citation, prior art, and the arts and the humanities.

## ► Citation content

1. Book: author(s), book title, publisher, date of publication, and page number(s) if appropriate.
2. Journal: author(s), article title, journal title, date of publication, and page number(s).
3. Web site: author(s), article and publication title where appropriate, as well as a URL, and a date when the site was accessed.

- ▶ **Unique identifiers:** Along with information such as author(s), date of publication, title and page numbers, citations may also include unique identifiers depending on the type of work being referred to.
  1. Citations of books may include an International Standard Book Number (ISBN).
  2. Specific volumes, articles or other identifiable parts of a periodical, may have an associated Serial Item and Contribution Identifier (SICI).
  3. Electronic documents may have a digital object identifier (DOI).
  4. Biomedical research articles may have a PubMed Identifier (PMID).
  5. A citation number, used in some citation systems, is a number or symbol added in-line and usually in superscript, to refer readers to a footnote or endnote that cites the source.

## ► Note systems

1. Note systems involve the use of sequential numbers in the text which refer to either footnotes or endnotes, which gives the source detail. The notes system may or may not require a full bibliography, depending on whether the writer has used a full note form or a shortened note form.
2. “The five stages of grief are denial, anger, bargaining, depression, and acceptance.”<sup>1</sup>
3. The note, located either at the foot of the page (footnote) or at the end of the paper (endnote) would look like this:

1. Elisabeth Kubler-Ross, *On Death and Dying* (New York: Macmillan, 1969) 45-60.

- ▶ Note systems

- ▶ Parenthetical referencing

1. Parenthetical referencing also known as Harvard referencing where full or partial, in-text citations are enclosed within parentheses and embedded in the paragraph, as opposed to the footnote style. An example of a parenthetical reference would be:

(Smith 2010, p. 1)

2. This section may be known as:
  - References
  - Bibliography
  - Works cited
  - Works consulted



## ► Journals

1. N. Tang, On the equilibrium partial pressures of nitric acid and ammonia in the atmosphere. *Atmos. Environ.*14, 819-834 (1980). [one author]
2. William R. Harvey, Signe Nedergaard, Sodium-independent active transport of potassium in the isolated midgut of the *Cecropia* silkworm. *Proc. Natl. Acad. Sci. U.S.A.*51, 731-735 (1964). [two or more authors]
3. F. H. Chaffee, Jr., The discovery of a gravitational lens. *Sci. Am.* 243, 60-68 (November 1980). [journal paginated by issue]

## ► Books

1. M. Lister, *Fundamentals of Operating Systems* (Springer-Verlag, New York, ed. 3, 1984), pp. 7-11. [third edition]
2. J. B. Carroll, Ed., *Language, Thought and Reality, Selected Writings of Benjamin Lee Whorf* (MIT Press, Cambridge, MA, 1956).
3. R. Davis, J. King, in *Machine Intelligence*, E. Acock, D. Michie, Eds. (Wiley, New York, 1976), vol. 8, chap. 3. [use short form of publisher name, not "John Wiley & Sons"]
4. D. Curtis et al., in *Clinical Neurology of Development*, B. Walters, Ed. (Oxford Univ. Press, New York, 1983), pp. 60-73. [use "Univ."]
5. *Principles and Procedures for Evaluating the Toxicity of Household Substances* (National Academy of Sciences, Washington, DC, 1977). [organization as author and publisher]

## ► Technical reports

1. G. B. Shaw, "Practical uses of litmus paper in Mobius strips" (Tech. Rep. CUCS-29-82, Columbia Univ., New York, 1982).
2. F. Press, "A report on the computational needs for physics" (National Science Foundation, Washington, DC, 1981). [unpublished or access by title]
3. "Assessment of the carcinogenicity and mutagenicity of chemicals," WHO Tech. Rep. Ser. No. 556 (1974). [no author]
4. U.S. Environmental Protection Agency, The Environmental Protection Agency's White Paper on Bt Plant-Pesticide Resistance Management (EPA Publication 739-S-98-001, 1998; [www.epa.gov/pesticides/biopesticides/white-bt.pdf](http://www.epa.gov/pesticides/biopesticides/white-bt.pdf)). [the easiest access to this source is by Internet]

## ▶ Theses and personal communications

1. B. Smith, thesis, Georgetown University (1973).
2. G. Reuter, personal communication. [Must be accompanied with a letter of permission and must not be used to support a central claim, result, or conclusion.]

## ▶ Preprints

1. A. Smette et al., *Astrophys. J.*, in press (available at <http://xxx.lanl.gov/abs/astro-ph/0012193>). [if now published, omit the URL and provide only a standard reference]
2. K. Abe et al., *Phys. Rev. Lett.*, in press (available at <http://arXiv.org/abs/hep-ex/0107061>).

## ▶ Published Online Only

1. N. H. Sleep, Stagnant lid convection and carbonate metasomatism of the deep continental lithosphere. *Geochem. Geophys. Geosyst.*, 10, Q11010 (2009), doi:10.1029/2009GC002702.

- ▶ Journal Impact Factor is from Journal Citation Report (JCR), a product of Thomson ISI (Institute for Scientific Information). JCR provides quantitative tools for evaluating journals. The impact factor is one of these; it is a measure of the frequency with which the “average article” in a journal has been cited in a given period of time.
- ▶ Impact factors are calculated yearly for those journals that are indexed in Thomson Reuters Journal Citation Reports.

- ▶ The impact factor for a journal is calculated based on a three-year period, and can be considered to be the average number of times published papers are cited up to two years after publication. For example, the impact factor 2012 for a journal would be calculated as follows:
  1.  $A$  = the number of times articles published in 2010-2011 were cited in indexed journals during 2012
  2.  $B$  = the number of articles, reviews, proceedings or notes published in 2010-2011
  3. Impact factor 2012 =  $A/B$
- ▶ (note that the impact factor 2011 will be actually published in 2012, because it could not be calculated until all of the 2011 publications had been received. Impact factor 2012 will be published in 2013)

## ► Use

The IF is used to compare different journals within a certain field. The ISI Web of Knowledge indexes more than 11,000 science and social science journals.

## ► Validity

1. The impact factor refers to the average number of citations per paper, but this is not a normal distribution. It is rather a Bradford distribution, as predicted by theory. Being an arithmetic mean, the impact factor therefore is not a valid representation of this distribution and unfit for citation evaluation.
2. In the short term - especially in the case of low-impact-factor journals - many of the citations to a certain article are made in papers written by the author(s) of the original article.
3. Similarly, journal self-citation is common in journals dealing in specialized topics having high overlap in readership and authors, and is not necessarily a sign of low quality or manipulation.

- ▶ **Editorial policies that affect the impact factor:** A journal can adopt editorial policies that increase its impact factor.
  1. Journals may publish a larger percentage of review articles which generally are cited more than research reports. Therefore review articles can raise the impact factor of the journal and review journals will therefore often have the highest impact factors in their respective fields.
  2. Conversely, journals may choose not to publish minor articles, such as case reports in medical journals, which are unlikely to be cited and would reduce the average citation per article.



- ▶ **Editorial policies that affect the impact factor:** A journal can adopt editorial policies that increase its impact factor.
  1. Journals may publish a large fraction of their papers, or preferentially papers which they expect to be highly cited, early in the calendar year. This gives those papers more time to gather citations.

- ▶ Impact Factors of some standard journals:

Journal	IF
Science	29.78
Nature	30.98
Sci. American	2.471
American Mathematical Monthly	0.276
bulletin of American mathematical Society	1.878
Physical Chemistry	9.917

- ▶ Link to an article about impact factor:  
<http://www.cmaj.ca/content/161/8/979.full>