

Chapter 4

Citing your Sources

4.1 Introduction

It is important to properly and appropriately cite the literature in scientific writing. This is for two reasons. First, as we explained in Chapter ??, one of the core rules of writing is never to make unsubstantiated statements. The way that we substantiate our statements is either to refer to another part of the current work, or to the scientific literature. A reader who doubts the veracity of a statement of fact should never be left thinking “I wonder where the author got that idea!” It should always be clear where “that idea” comes from, which means that we give the reader enough information to find the referenced work, and, in the case of longer works, the particular section or page that we used as our source.

One kind of research writing that is particularly rich in literature citations is the “literature survey” or “related work” section of a research paper, or the whole of a survey paper. Here, citations to appropriate sources show that you’ve done your homework and are aware of the background and context into which your work fits. You may also wish to include citations for sources that add relevant information to your work, or that present alternate views. Throughout your writing, citations help to validate your arguments, and provide avenues for interested readers to follow up on aspects of your work. In other words, they help to weave the web of science.

The modern way of citing the literature is to include a short *callout* in the running text whenever you need to refer to a source. Callouts are also known as citation *labels*. The label is treated as a parenthetical remark, not a noun, and like all parenthetical remarks, the text must make sense without it. The bibliography information for each of your sources appears once, in a list at the end of the document (or sometimes, in a book, at the end of a chapter). The term *citation style* refers to the way that the labels are composed and

formatted, and the way that the bibliography is formatted and abbreviated.

The citation style used in a journal article is usually dictated by the journal. In a conference paper, or a monograph, or a term paper, you have more freedom. Two basic styles of callout are in common use, although there are others. The first is the “Numeric” style, in which citation labels are simple numbers, usually set off from the text in brackets thus [4], but which in some publications are parenthesized (4), or occasionally superscripted⁴. Brackets are preferred, particularly in mathematical work, to avoid confusion with equation numbers and powers.

The second is the “Author–Date” style, in which citation labels take the form of the name of the author of the cited work followed by the year of publication, like this [van Leunen, 1979]. If the author’s name has already appeared as part of the text, it is not repeated in the callout.

A comprehensive reference for citation styles is van Leunen’s “Handbook for Scholars” [1979].

4.2 When to Cite References in Scientific Research Papers

You should acknowledge a source any time—and every time—you use a fact or an idea that you obtained from that source. Thus, you clearly need to cite sources for all direct quotations. But you also need to cite sources from which you paraphrase or summarize facts or ideas: whether or not you’ve put the fact or idea into your own words, the fact or idea came from somebody else and you need to give them proper acknowledgement. The only exception is an idea that is “common knowledge,” but if you didn’t know that was common knowledge until you found it in a particular source, you have just demonstrated to yourself that it wasn’t common knowledge, and you should cite an authoritative source, such as a textbook or reference book.

Sources that need to be acknowledged are not limited to books, conference papers, dissertations and journal articles, but include websites, computer software, written and e-mail correspondence, and even conversations with other people (in person or by telephone). Furthermore, if you use figures, illustrations, or graphical material, either directly or in modified form, that you did not yourself create or design, you need to acknowledge the sources of those figures. (In a formal publication, if the material is copyright, you *also* need obtain permission for reuse from the copyright holder.)

4.3 Citing References in your Text

When you cite a reference in your text you should normally use one of the following three forms.

1. Cite the publication, and then say what relevant facts or ideas you found there. For example:

Numeric Style: According to Rodgers [3], the Appalachian mountains were formed in three events.

Author-date style: According to Rodgers [1983], the Appalachian mountains were formed in three events.

Mention the author by last name in the sentence, and follow that with a non-breaking space and the citation callout. In author–year style, the author’s name should not be repeated in the callout.

2. First give the facts or ideas mentioned by the author, and then attribute these facts or ideas by citing the source. For example:

Numeric Style: The first of the three events occurred in the Ordovician, the second in the Devonian, and the third in the Carboniferous and Permian Periods [3].

Author-date style: The first of the three events occurred in the Ordovician, the second in the Devonian, and the third in the Carboniferous and Permian Periods [Rodgers, 1983].

3. Quote the author exactly; be sure to put the quoted phrase between quotation marks, or set it off typographically. Then give the citation.

Numeric Style: “All the climaxes produced mountainous islands or highlands that shed vast amounts of debris westward to form clastic wedges or delta complexes on the continental margin.” [3, p. 229].

Author-date style: “All the climaxes produced mountainous islands or highlands that shed vast amounts of debris westward to form clastic wedges or delta complexes on the continental margin.” [Rodgers, 1983, p. 229].

You need to include the page number in the citation if you are quoting directly, or if the source is very long and the specific fact or idea you are citing can be found only on a specific page. Direct quotations that are 4 lines long or more should be set off from the rest of your paper by use of narrower margins and single spaced lines; shorter quotations can be run into your

paragraph, and enclosed in quotation marks. Your goal is to make it quite unambiguous which words come from the cited source, and which are your own.

If you are using author–year format, and have more than one source by the same author published in the same year, distinguish them both in the citation and in the reference list by appending the letters *a*, *b*, *c*, . . . to the year, in the order in which the citations appear in your paper. (For example: Allen 1996a, 1996b.)

If the reference you are citing has two authors, use the following format:

Periods of glaciation have a large effect on sea level [Ingmanson and Wallace, 1985].

If the reference you are citing has more than two authors, use the following format:

Hot spots are formed by the drift of plates over mantle plumes [Vink *et al.*, 1985].

Personal communications are generally not included in the list of references, so the citation cannot take the form of a short label that indexes that list. Instead, you will need to give more information in the citation itself. If your source of information is from a personal oral communication, you would use the following format for the first citation from that person:

It is possible to correct the raw dD values measured on the mass spectrometer [Mark Conrad, Lawrence-Berkeley National Lab, personal communication].

Later citations to the same person can be shortened, as in:

The reproducibility of dD determined by these methods is thought to be about +/- 2 per mil [Conrad, personal communication].

If your source of information is from written correspondence (a letter or e-mail), substitute the word “written” for the word “personal” above, and add the date of the letter or email. Unpublished papers, technical reports or manuscripts that readers might be able to locate for themselves should be listed with the published references.

If your source of information has no individual identifiable author, use the name of the organization to which the work can be attributed in place of the author’s name:

The Java Virtual Machine Tool interface is a replacement for two older interfaces specific to profilers and debuggers [Oracle, 2011].

4.4 Formatting the Reference List

Your list of References should include all of the references you cited in your paper, and no more! It is normally arranged in alphabetical order by the last name of the first author. (A few publications that use the numeric style instead require that the list be sorted in the order that the citations appear in the text.) If you have more than one entry by the same author, they should be sorted by increasing publication date, so that the more recent publications come last. If you have multiple sources from a single author published in the same year, distinguish them both in the in-text citation and in the reference list, by appending the letters *a, b, c, ...* to the year, in the order in which the citations appear in your paper.

The point of the reference list is to include enough information for your readers to be able to find these sources on their own. The exact format is not critical, but consistency and completeness is. Reference lists are generally reverse-indented, that is, the citation labels (if you are using numeric format) or the author surnames (if you are using author-year format) are in the margin. This helps the reader to find references corresponding to specific citation labels that much faster. Follow the examples given below and you will be all set.

4.4.1 Books

List all authors by last name and initials, separated by commas if there are more than two authors. Put the word “and” before the last author in the list. Then put the year of publication, the title of the book (in italics), the publisher, the city, and the number of pages in the book. One author:

van Leunen, M.-C., 1992. *A Handbook for Scholars*, Oxford University Press, xi + 348 p.

Two or more authors:

Ingmanson, D. E. and Wallace, W. J., 1985. *Oceanography: An Introduction*, Wadsworth, Belmont, CA, 530 p.

4.4.2 For Articles from a Compilation

A “compilation” is a book in which each article or chapter has its own list of authors. The compilation as a whole will have an editor. List the author(s) of the article using the same format given above for books, then give the year, the title of the article or chapter (no quotes, italics or underlines). Next give the name(s) of the editor(s) of the book or compilation, followed by “ed.” or

“eds.” Then put the title of the book (in italics), the publisher, the city, and the page numbers where the article can be found. Page ranges are written with an *en-dash*, which is longer than a minus sign but shorter than the dash used for punctuation (called an *em-dash*).

Rodgers, J., 1983, The life history of a mountain range — Appalachians, in Hsu, K. J., ed., *Mountain Building Processes*, Academic Press, Orlando, p. 229–243.

4.4.3 For an Article from a Journal or Magazine

List the author(s) of the article using the same format given above for books, then give the year, the title of the article or chapter (no quotes, italics or underlines), then the title of the journal or magazine (in italics), the volume of the journal (in bold face) and the issue (in italics), and page numbers where the article can be found. It is conventional *not* to use the month of publication, and even the issue number is sometimes omitted, provided that the page numbering of the volume is continuous.

One author:

Maddox, J., 1987. The great ozone controversy, *Nature*, **329**, p. 101.

Two or more authors:

Vink, G. E., Morgan, W. J., and Vogt, P. R., 1985. The Earth's hot spots, *Scientific American* **252**(4), p. 32–39.

4.4.4 Internet sources

Give the author's last name and initials (if known) and the date of publication (or most recent modification). Next, list the full title of the work (*e.g.*, the specific web page), and then the title of the complete work or site (if applicable) (in italics). Include any version or file numbers, enclosed in parentheses. Most important, provide the full URL to the resource, including the protocol. Be sure to spell this out correctly; it's best to use “copy and paste” for this. Finally, specify the date on which you most recently accessed the site, enclosed in parentheses.

Focazio, M.J., Welch, A.H., Watkins, S.A., Helsel, D.R., and Horn, M.A., 1999. A retrospective analysis on the occurrence of arsenic in ground-water resources of the United States and limitations in drinking-water-supply characterizations, U.S. Geological Survey Water-Resources Investigation Report 99-4279, <http://co.water.usgs.gov/trace/pubs/wrir-99-4279/> (Accessed 16th October 2012).

Adapt these formats as necessary for other kinds of sources, including unpublished reports or manuscripts. The key idea is to be sure to include sufficient information for your readers to be able to find these sources themselves, without taking up more space than necessary.

4.5 Automating the Bibliography

With the advent of computerized typesetting, the process of constructing a bibliography for anything more than a short paper is invariably automated. The process works like this.

1. The bibliographic information for all of the referenced sources is collected in a database. Most publishers provide bibliographic information for their publications online, so job of the author is to collect these, correct them (yes, they are often buggy) and build a database file. I have a single database file for every technical publication that I have ever read that I think that I might, someday, want to cite; other authors construct a separate database for each article they write.
2. Each entry in the database has a unique key. The key is usually made up of a prefix of the first author's name and publication date (for example, *ingman1985*), but it can be any unique string (for example, *HandbookS*).
3. When you need to cite a source in your text, you insert a special text string containing the unique key of the source. This is called a *raw callout*. The exact form of the raw callout depends on the bibliography tool that you will use in the next step. Using BIB_{TEX} , I would insert `\citep{ingman1985}`; other tools use delimiters like `{ and }` or `[and]`.
4. The whole document is processed by the bibliography software, which locates all of the raw callouts, extracts the bibliography information for the cited sources from the database, formats this information into bibliography entries, sorts them, arranges them at the end of the article, and calculates the citation labels (the numbers, or the author-year strings) that will be used in the finished document. Then the software takes another pass over the text of the document, and replaces the raw callouts with the citation labels.
5. The whole document is then formatted for a final time.

Some bibliography tools connect to particular document formatting software, and use the cross-referencing capabilities of that software to hide the raw citation keys and always display the citation in its finished form. This is convenient, but ties you to always using that particular combination of

bibliography tool and formatting software. If you find, partway through a project, that they aren't up to the job, you are stuck with a lot of re-work.

Maintaining a bibliography database takes some effort, but this effort is distributed over the whole of one's life as a writer. The payback comes when one wants to write an article with scores of citations: the bibliography is produced automatically, in seconds. Done by hand, this is a chore that used to take many hours. Moreover, numeric citation labels will be automatically adjusted when you find the need to add an additional citation.

An additional benefit of using a bibliography tool is that each publisher, and often each journal, has its own style for both citations and reference lists, and insists that its style is followed slavishly. Most bibliography software comes with an extensive library of styles, often numbering into the hundreds. Changing the style of the finished document can then be accomplished by changing a line or two of the input; without a tool, reformatting the bibliography would be a major project.

In this chapter, the numeric citations and the list of references were produced using $\text{BIB}\text{T}\text{E}\text{X}$ and the *natbib* package. The *natbib* package can be used to produce either author-year or numeric citations, depending on the option that you select. This book uses the $\text{L}\text{A}\text{T}\text{E}\text{X}$ commands `\usepackage[square,comma,numbers,sort,sectionbib]{natbib}` and `\bibliographystyle{plain}`. Replacing *numbers* by *authoryear* will produce author-year labels. The examples of references in the body of this chapter were set by hand. You will probably see some small differences in style between them.

Acknowledgments

The content of this chapter is based on a web page compiled by Timothy T. Allen, as revised in 2000, which in turn expanded upon a handout originally prepared by an unknown author for distribution to students in introductory earth science courses at Dartmouth College. It has been updated and revised with contemporary information about computer science citation styles by Andrew Black.

References

- [1] D. E. Ingmanson and W. J. Wallace. *Oceanography: An Introduction*. Wadsworth, Belmont, CA, 1985.
- [2] Oracle Corp. JVM tool interface (version 1.2). <http://docs.oracle.com/javase/6/docs/platform/jvmti/jvmti.html>, 2011.

- [3] J. Rodgers. The life history of a mountain range — Appalachians. In K. J. Hsu, editor, *Mountain Building Processes*, pages 229–243. Academic Press, Orlando, 1983.
- [4] Mary-Claire van Leunen. *A Handbook for Scholars*. Oxford University Press, 1992.
- [5] G. E. Vink, W. J. Morgan, and P. R. Vogt. The Earth's hot spots. *Scientific American*, 252(4):32–39, 1985.