Sources for Science

Ollie Bridle & Karine Barker, November 2022
Learning Objectives

1. Understand what differentiates academic sources from non-academic material and know where to find academic material.

2. Be able to apply the CRAAP test to evaluating sources.

3. Understand the importance of referencing in academic work and be able to apply basic referencing techniques to create in-text citations and reference lists.
Academic Sources
Lots of material out there...
Where do you find information?

• Imagine you have been asked to research an assignment or essay for your course. Tell us where you would currently go to carry out your research. For example, would you use a particular website? Would you check your reading list?

• Put your answers on the Menti poll below.

• https://www.menti.com/albu3ai9e9ci
Types of sources

Books
- Textbooks.
- Reference works.
- Often helpful for background reading, definitions or revising key theories.

Journals / Conferences
- Latest original scientific research.
- Scientific papers.
- Review articles.

Websites
- Lots of useful websites.
- Can be very up-to-date
- Information quality is always an issue.
- You need to evaluate websites carefully – is it suitable for academic work?

Databases
- Find papers and book chapters on any topic.
- Easily search millions of science papers.
- Useful for researching projects.
Where to look for different things

<table>
<thead>
<tr>
<th>Books</th>
<th>Journal Articles and Conference Proceedings</th>
<th>Websites</th>
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<tbody>
<tr>
<td>SOLO</td>
<td>Literature databases</td>
<td>Search Engines</td>
</tr>
<tr>
<td>Reading lists / ORLO</td>
<td>SOLO Article Search</td>
<td>Subject guides</td>
</tr>
<tr>
<td>Reading lists / ORLO</td>
<td>Reading lists / ORLO</td>
<td>BrowZine</td>
</tr>
</tbody>
</table>

Message – you probably won’t find everything you need in one place!
Finding journal articles from a reference

You’ll often have journal references on reading lists that need a little interpretation!


You could search for the article title in SOLO
You could search for the title of the journal in SOLO or BrowZine.
Types of journal articles

- **Primary research articles** – Report the results of new studies or experiments. Give the latest scientific research.

- **Review articles** – Provide an overview of existing knowledge on a subject by summarising the relevant research available. Helpful for background reading and locating references to the primary literature. Do not report original findings.

- **Systematic Reviews** – A special type of review article which attempts to answer a very focused research question by collecting, synthesising and evaluating the findings of every study available that relates to that question. They are often used to answer medical questions such as whether a particular drug or treatment is effective.
Jargon Buster

• In your academic reading, you may come across some unfamiliar terms.
• **Ibid.** – *ibidem* – ‘In the same place’, used to refer you back to a source that has just been mentioned.
• **Op. cit.** – *opera citato* – ‘In the work already cited/mentioned’, like *ibid.* this refers you back to a source that was recently mentioned.
• **Et al.** – *et alii* – ‘and others / and the rest of them’, used to abbreviate a long list of authors in a citation to a source written by many people.
• **Sic.** - *sic erat scriptum* – ‘Thus was it written / It was written this way’, often used in quotations which contain spelling or grammatical mistakes in the original source to clarify that the error is in the original text ‘A surprising range of animals thrive in a dessert [*sic.*] ecosystem.’ (Dalgleish, 1998, p.37).
Subject Guides

- User friendly guides to library resources.
- You can find the guide for your subject here - https://libguides.bodleian.ox.ac.uk/subjects
Evaluating Sources
Why bother evaluating sources?

- Avoids including inaccurate, false or incomplete information in our assignments
- Allows us to back up our assignments with reliable evidence
- Builds your skills to sort quality information from the rest – useful in any context
About Peer review

• Academic journals usually use a **peer review** process to provide a level of ‘quality control’ on research papers they publish.
Introducing the CRAAP test

**Currency**
Do you need recent information, or will older information still be useful?
Can you be certain when the source was written?

**Relevance**
Does the information relate to your topic?
Is it the right depth for your work? Is it aimed at an academic audience?

**Authority**
Who wrote it? What are their qualifications? Are they an expert on the subject? If you cannot find who (either a person or an organisation) wrote something, assessing its reliability can be difficult.

**Accuracy**
Has clear evidence been provided? Does it fit with what you know?
Can you back it up with other sources? Is the level of detail sufficient?

**Purpose**
Why was it written? Is the author likely to be biased?
Is the information fact or opinion? Are there commercial or political motivations?
Applying the CRAAP test

• We would like you to try applying the CRAAP test principles to the following website – www.dhmo.org

• We will collect your ideas on a Padlet.

• https://tinyurl.com/CRAAPExercise
Bibliographic databases

• Index the scientific literature
  • Journals
  • Conferences
  • Books (often chapter level indexing)
  • Patents
  • Grey literature

• Usually searching bibliographic records which include abstracts but not the full text of papers.

• Search for any topic, author or publication of interest.

• Employ a wide range of advanced search tools.

• **Great resource to use when researching for your assignments!**
SCOPUS Contents

- 44 million International patent records
- 234,000+ books indexed
- Articles from 26,000 journals and 10.9 million conference papers
- Other material including pre-prints and trade journals.
Finding databases

Use the Database A-Z - https://libguides.bodleian.ox.ac.uk/az.php

Browse by subject

Search by name
Information about databases

W

Web of Science Core Collection

Z

Zoological Record (1864-2009)

Comprehensive coverage of worldwide zoological literature, including international journals, review annuals, monographs, meeting proceedings, books, and reports. All major areas of zoology are represented, including: behavior, ecology, evolution, habitat, nutrition, parasitology, reproduction, taxonomy, and zoogeography.
Activity – what databases are available for your subject?

- Go to SOLO ([https://solo.bodleian.ox.ac.uk](https://solo.bodleian.ox.ac.uk))
- In the Useful Links box click on Database A-Z.
- Browse for databases in your subject area. What can you find?
## Google Scholar Advantages and Disadvantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick and easy to use</td>
<td>Indiscriminate – picks up non-academic material</td>
</tr>
<tr>
<td>Good coverage of major journals and recent publications</td>
<td>Harder to do a detailed search</td>
</tr>
<tr>
<td>Understands basic Boolean logic</td>
<td>Unclear how Google creates its search results.</td>
</tr>
<tr>
<td>Can link directly to subscribed Oxford e-resources</td>
<td>Metadata often incomplete and older material is sometimes missing.</td>
</tr>
<tr>
<td>Basic sorting by date or subject</td>
<td>Few sorting and refining options</td>
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Google Scholar at Oxford

• Selecting **Settings** from the top of the [Google Scholar Home Page](https://scholar.google.com)
• Select **Library Links**
• Searching for **University of Oxford** and selecting it from the list
• Saving your settings
• You will now see 'Find it @ Oxford' links next to items in your Google Scholar results that you can use to access the full-text provided by library subscriptions.

Cross-system comparisons of soil nitrogen transformations and nitrous oxide flux in tropical forest ecosystems

PA Matson, PM Vitousek - *Global Biogeochemical Cycles*, 1987 - Wiley Online Library

Abstract: Soil nitrogen transformations and nitrous oxide flux across the soil-air interface were measured in a range of tropical forest sites in Costa Rica, Brazil, and Hawaii. Nitrogen
What does ‘referencing’ mean?

• **Referencing** is a vital part of academic writing
• It involves **acknowledging** the **source** for information or ideas you have used in your own work
• We are also **informing** the reader of the sources we have used
Why reference?

• Why do you think we need to reference material we have used for our writing or research?

• Type some suggests in chat or shout out.
Why do we need to reference?

- Supports your arguments with **evidence** and **examples**
- Gives others **credit** and **recognition** for their work
- **Separate** your ideas from the ideas of others
- Demonstrates the **quality** of resources you have used and your own **knowledge** of the subject
Plagiarism

- Plagiarism is the act of using other people’s words, images etc. (whether published or unpublished) as if they were your own.
- Plagiarism is sometime deliberate, but often it is often caused by poor referencing!

- Failing to make it clear when you’re quoting
- Giving inaccurate information about a source
- Not indicating what source you used
What is a referencing style?

A set of rules which tells us what **details** should appear in a reference to a source – e.g. a book, journal, newspaper

A way of allowing us to present our references in an **orderly, professional** and **neatly formatted** way

Some styles use an author-date system (e.g. Harvard, APA), others use sequential numbering (Vancouver, Nature) for citations.

We will use some examples from the APA 7th Edition style. Check your departmental handbook for what style you should be using.
What do you need to include?

**In text citation**

A short reference to a particular source that goes into your text when you’ve used that source.

**Reference List**

List of all the sources you have cited in the body of your writing.
The programming language C was first developed in the 1970s on UNIX based computer systems (Kernighan & Ritchie, 1988, p. 1). The language has...

An in-text citation to a source is included in the main text.


A full reference at the end of the document contains the information required to describe the source.
What does an in-text citation look like?

• Use whenever: quoting, paraphrasing, summarising, reproducing data etc.
• Give the author, date, and page number (if one is needed).

• For example:

• Cottrell (2013) claims that ‘critical thinking when reading is essential to academic success’. (p. 189)

• Students typically write multiple drafts before submitting their assignment (Cottrell, 2013, p. 297).
In-text citation to a whole source

- Often, we want to refer to a whole source such as a complete journal article, report or conference paper rather than specific pages.
- In this case we DO NOT need a page number in the in text-citation.
- Give the author and date.

For example – referring to a whole journal article:

Smith (2020) discusses the use of different referencing styles in academic writing.

Many different referencing styles are used in academic writing (Smith, 2020).
Multiple Authors

1-2 authors: List all authors at all times
(Smith, 2020) – 1 author
(Smith & Jones, 2012) – 2 authors

More than 2 authors:
• In-text citation: List first author, followed by ‘et al.’
  e.g. (Torrington et al., 2017, p. 56)

• List of references: List all authors
  e.g. Torrington, D., Hall, L., Atkinson, C., & Taylor, S. (2017). Human reso...
Corporate Authors

• Sometimes a source will not have an individually named person or people as the author.
• In this case, we often use a **corporate author**.
• A corporate author can be a –
  • *Government department* – e.g. Department of Transport
  • *Name of an organisation* – e.g. National Health Service
  • *Name of a business* – e.g. Microsoft
  • *Name of an educational establishment* – e.g. University of Oxford
• (Department of Transport, 2018)
Reference Lists

- At the end of your assignment
- Full details of the sources you have used
- Should **match** in-text citations
- **Alphabetical** by author
- One long list of everything: no need to separate books, websites, journals etc.
Creating a reference

1. What is your source?
   Journal article? Book? Website? Image?...

2. Look up how to reference this type of source.
   Find out what information you need about the source and what order it should go in.

3. Identify all the information you need from your source.
   Do you need titles, author names, publication dates?

4. Put the reference together.
   Use the style guidelines and any worked examples to help.
An Example:
Now create the reference list entry...


- Make sure you put the information in the right order.
- Note that some information may need to be in *italics* or **bold** depending on the style.
What is a DOI number?

• **Digital Object Identifier.**
• A unique, persistent number that is given to many online journal articles, books and other material.
• **Example:** [https://doi.org/10.2501/S0265048709201026](https://doi.org/10.2501/S0265048709201026)
• In APA Style, DOI numbers should be included when they are available. Requirements for using DOI numbers in other styles will vary.
• If you can’t find a year of publication, replace the date with **n.d.**

• E.g. **Smith (n.d., p. 45)** claims that…

• If you cannot find an edition for a book or an issue number for a journal article, leave it out.

• No Author?
  • Check for a corporate author
  • Use the title in place of the author

• For numbered styles –
  • In-text citations – [1], (1), superscript[^1]
  • References listed in numerical order of appearance in your text.
Refworks is reference management software.

- Use to manage, organise and store and keep track of the references you are using.
- Create your in-text references and reference lists for assignments.
- Able to use a wide range of different citation styles.
- Free for University Members to use.
- Can be used online.
- Sign up for an account here - [https://refworks.proquest.com/](https://refworks.proquest.com/)
Referencing Help

• ‘Cite them Right’ by Pears and Shields
  • Easy to use and well structured.
  • Covers several basic citation styles.
  • Includes practical advice on when to cite and how to avoid plagiarism.
  • Now available online at - https://www.citethemrightonline.com/Home

• Other books on referencing are available at the library.
Other Research Skills Training

IT Services courses

- Courses in using Stats packages, programming and advanced techniques with Word to help you manage your thesis writing.
- LinkedIn Learning – online video tutorials for developing IT Skills.
- https://www.it.ox.ac.uk/it-training

iSkills

- Run by the libraries.
- Include everything from catalogue searching to reference management and open access publishing.
- https://www.bodleian.ox.ac.uk/ask/workshops#

One-to-One Consultations

- Any help you need using library services or resources, just ask a Subject Librarian.
Questions?