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Working with Scientific Literature_II

Research Methodologies and Scientific Communication

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Working with Scientific Literature

In the first part of this lesson (Working with Scientific Literature_I) we provided an overview about Scientific Literature in a nutshell:

- What is scientific literature
- How to find it
- How to read it
- How to use it
- Source reliability



Working with Scientific Literature

In this part of this lesson we will focus on the following parts of Scientific Literature:

- Change of literature search over times
- Types of literature
- Citation Styles
- Literature management software



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Change of Literature search

- The way to search for literature has tremendously changed. Years ago, most of the literature was available in form of printed books, magazines, journals etc. Nowadays most scientific text is available online . This implies a shift from reading printed documents to reading digital documents.
- For more intensive studies, digital documents can be marked and personal comments can be added directly on the document. One of the huge advantages of the digital working method is the integration of the literature directly into the own document without printing all the documents. If you use all the thoughts and the language of the author you included in your document you have to cite this literature without any exception. If you don't do that it is plagiarism.
- **Note: Every external source must be cited!**



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Change of Literature search

Quotations and paraphrases are used to represent the results or opinions of others in a scientific text. One of the **essential rules** of scientific work is the indication of the source of all information used. All literature mentioned in the work (books, journals, etc.) must be identified in the text and included in the bibliography. These bibliographic details must be written in such a way that the respective sources of information (compilation, monograph, essay, URL, ...) are clearly identifiable and can therefore be found in libraries or on the Internet.



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Types of literature

- Be careful when selecting **appropriate** literature that is used as a source.
- Two main points need to be considered: (1) **relevance** and (2) **scientific quality**.
- You also have to distinguish between **peer-reviewed** and **non-peer reviewed** articles.



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Types of literature

- **Peer reviewed:** Peer-reviewed articles, also known as scholarly articles, are published based on approval from a board of professional experts in the discipline relating to the article topic. Peer-reviewed articles differ from other material because the review process gives them more authority than, for example, a newspaper or magazine article.
 - *Example: A paper discussing the urban heat island effect would need to be reviewed by a board of scientists in the field of geography and geoinformatics to be approved for publication in a geographical journal.*
- **Non-peer reviewed:** Newspaper or popular magazine articles are mostly written by journalists who are not specialists in any field except journalism. They are reviewed only by the magazine/newspaper editors (also not specialists in any field except editing).



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Types of literature

Different publication types give an indication of the scientific quality of a paper

Journal articles are the publication type of **highest** quality. They have successfully passed a peer-review process: at least two other scientists, who work in the same field carefully examined the content and considered it good enough for publication. Further, some journals are considered more prestigious than others, which is reflected in the 'Impact Factor', a statistics on how often articles in a journal are cited by other articles. The more citings, the higher the Impact Factor, the higher the credibility of a journal.



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Types of literature

If you intend to introduce your scientific work to your peers you can submit a **conference paper** or a **conference proceeding article**.

Conference papers refer to articles that are written with the goal of being accepted for a conference where you can present your results of your scientific work to the community. You can have an oral or poster presentation to communicate your scientific achievements with your peers. The conference papers can be submitted as abstracts and it helps the audience to easily get written information about your scientific achievements. You can also submit a short paper, which is usually 2-5 pages. These papers can either be peer-reviewed or non-peer reviewed.



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Types of literature

Conference proceeding article: is published **in the proceedings** of a **conference** and the **proceedings** can be found online (website) or in physical format (book). Conference proceedings are the published record of a conference, symposium or other meetings.

Conference proceeding articles can be peer reviewed and non-peer reviewed. This depends on the type of the conference and their standards and definitions.

Getting the article published in a journal is a different story. When the conference article evolves to a journal article, the process is long and demanding.



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Types of literature

Text books mostly offer basic knowledge of a domain and they are not peer reviewed. They should not comprise the major part of sources.

Grey literature: the umbrella term for unpublished work (e.g. reports, thesis). Its credibility is limited, because it is not peer reviewed and the source hardly can be accessed and evaluated by peer researchers.

Internet resources. In principle the same as for grey literature applies: although access is possible, sustainability of this access is not guaranteed. Using such sources in a scientific context is not recommended.



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Citation styles

As you have already noticed, each literature you include in your written thesis has to be properly cited. Citation styles differ mostly in the location, order, and syntax of information about references. The number and diversity of citation styles reflect different priorities with respect to concision, readability, dates, authors, publications, and, of course, style.

More than 5000 different citation styles exist, they are all valid and there is no good or bad style as long as it is consistent and unambiguous. There are different traditions of citations in the **humanities**, **law**, **social sciences** and the **natural sciences**.



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Citation styles

There are two major divisions within most citation styles: documentary-note style and parenthetical style.

Documentary-note style is the standard form of documenting sources. It involves using either footnotes or endnotes, so that information about your sources is readily available to your readers but does not interfere with their reading of your work.

Parenthetical referencing, also known as Harvard referencing is a citation style in which partial citations—for example, "(Smith 2010, p. 1)"—are enclosed within parentheses and embedded in the text, either within or after a sentence. They are accompanied by a full, alphabetized list of citations in an end section, usually titled "references".



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Citation styles

In GIScience publications it's very popular to use the author-date system, where the author's last name(s) and the publication date is placed in parentheses, embedded in the text, in or at the end of a sentence. After the text a complete list of all references is given in alphabetical order.

Most common citation styles:

APA

Harvard

Chicago

IEEE

.....



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Citation styles

All different kind of citation styles can easily be managed with various literature management software products (endnote, zotero, citavi, mendeley,...)

Some examples about correct citation (all author-dated)

1) Journal Article

In text citation:

(Lüthje, Tiede et al. 2014)

In literature list:

Lüthje, F., D. Tiede and C. Eisank (2014). "Object-based DTM generation from VHR stereo imagery derived DSM data sets." South-Eastern European Journal of Earth Observation and Geomatics **3**: 109-113.



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Citation styles

2) Book:

In text citation:

(Smith 2016, 315–16)

In literature list:

Smith, Zadie. 2016. *Swing Time*. New York: Penguin Press.

3) Chapter or other part of an edited book:

In text citation:

(Strobl 2014, 3-4)

In literature list:

Strobl, J. (2014). TECHNOLOGICAL FOUNDATIONS FOR THE GISOCIETY. Learning and Teaching with Geomedia E. S. T. Jekel, I. Gryl, C. Juneau-Sion, & J. Lyon (Eds.), . Newcastle upon Tyne, Cambridge Scholars Publishing.: 2-9.



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Citation styles

4) E-book:

In text citation:

(Kurland and Lerner 1987, chap. 10, doc. 19)

In literature list:

*Kurland, Philip B., and Ralph Lerner, eds. 1987. The Founders' Constitution. Chicago: University of Chicago Press.
<http://press-pubs.uchicago.edu/founders/>.*

5) News or magazine articles

In text citation:

(Mead 2017, 43)

In literature list:

Strobl, J. (2015). Time to open up. Geospatial World.



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Citation styles

There are a lot of other publication types available, such as

- Thesis or dissertation
- Website content
- Social media content

You can find many different citation styles. In the past, each discipline followed its own referencing rules, but today there's a growing tendency among universities and colleges to choose one single style.

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Working with Scientific Literature

Literature management software

Scientists do their fair share of online research. With so many different databases, online journals, and websites, it can get pretty overwhelming to manage your references and keep them all organized—especially if you're doing it manually.

But did you know that there are programmes that can actually manage and keep track of your references for you? There are many different literature management software programmes that can make the process of managing your references almost effortless.



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Literature management software

The following table shows the most used management software programmes, but in this lesson we will only introduce the software “EndNote”:

Literature management software	Costs	Does it integrate with Microsoft Word?	How to install?
Zotero	Free / open source	Yes	https://www.zotero.org/download/
EndNote	30 days trial free / US\$ 249,90	Yes	https://endnote.com/downloads/30-day-trial/ https://endnote.com/buy/
Mendeley	Free	Yes	https://www.mendeley.com/download-desktop/
RefWorks	US\$ 100/year or free at any subscribing academic institution	Yes	https://www.refworks.com/



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Instruction guidelines for EndNote in a nutshell

1. Adding a new reference
2. Management and change of references
3. How to include references in a document
4. Reference types



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Adding a new reference

- Manually import: https://www.youtube.com/watch?v=ZN-o_kg4skI (assessed 15/5/2019)
- Import from google scholar: <https://www.youtube.com/watch?v=ir5Y81bQuWg> (assessed 15/5/2019)
- Import from other online databases: The import from other databases usually works similarly. Sometimes you have to cache the file first, for example on your desktop. Open then in EndNote via File> Import. In the following window, select the file to be imported using the “Choose File” button. Then search for the correct filter under import option.
- Direct import: Menu > Tools> Online Search. A window opens in which you can specify the database by selecting a connection file (e.g. choose “Web of Science” database).



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Manage and edit references

Open your endnote library in which a reference or the short ad will be found in each line. On the left side, you can see the groups that allow further sorting of the references.

In the right-hand column it is possible to add or to delete individual terms under "Reference" . Via the symbol of the "paperclip" PDF documents can be attached directly to the entry, which then appear under "Attached PDFs".

Under "Preview" the chosen "Output Style" of the reference is visible.

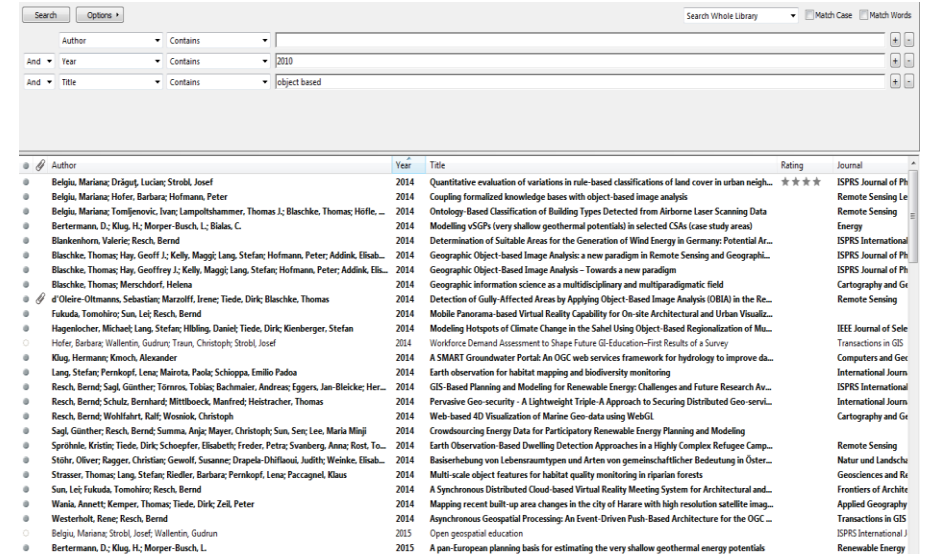


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Manage and edit references

In the topmost window of EndNote, you will find the Search Panel, which displays a search dialog that lets you browse the displayed database.

Type in the name of the author in the first line. In the next line, enter 2010. Since these are years, select Year as the search criteria from the drop-down menu. In the third lane type any keyword you are searching for and select title as the search criteria. After clicking on Search (or via return key) Endnote displays the found references.

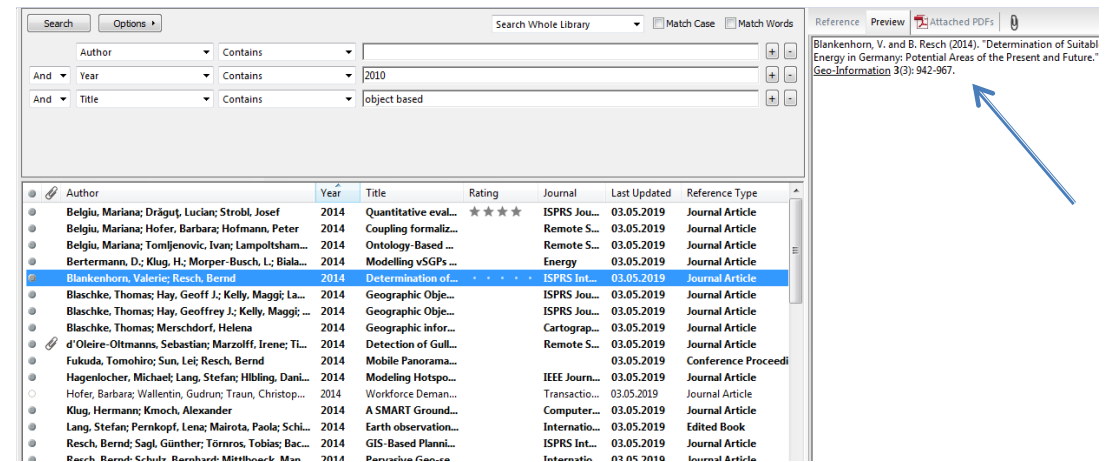


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Manage and edit references

To get a preview of a reference, mark it with the mouse or use the arrow keys to jump to it.

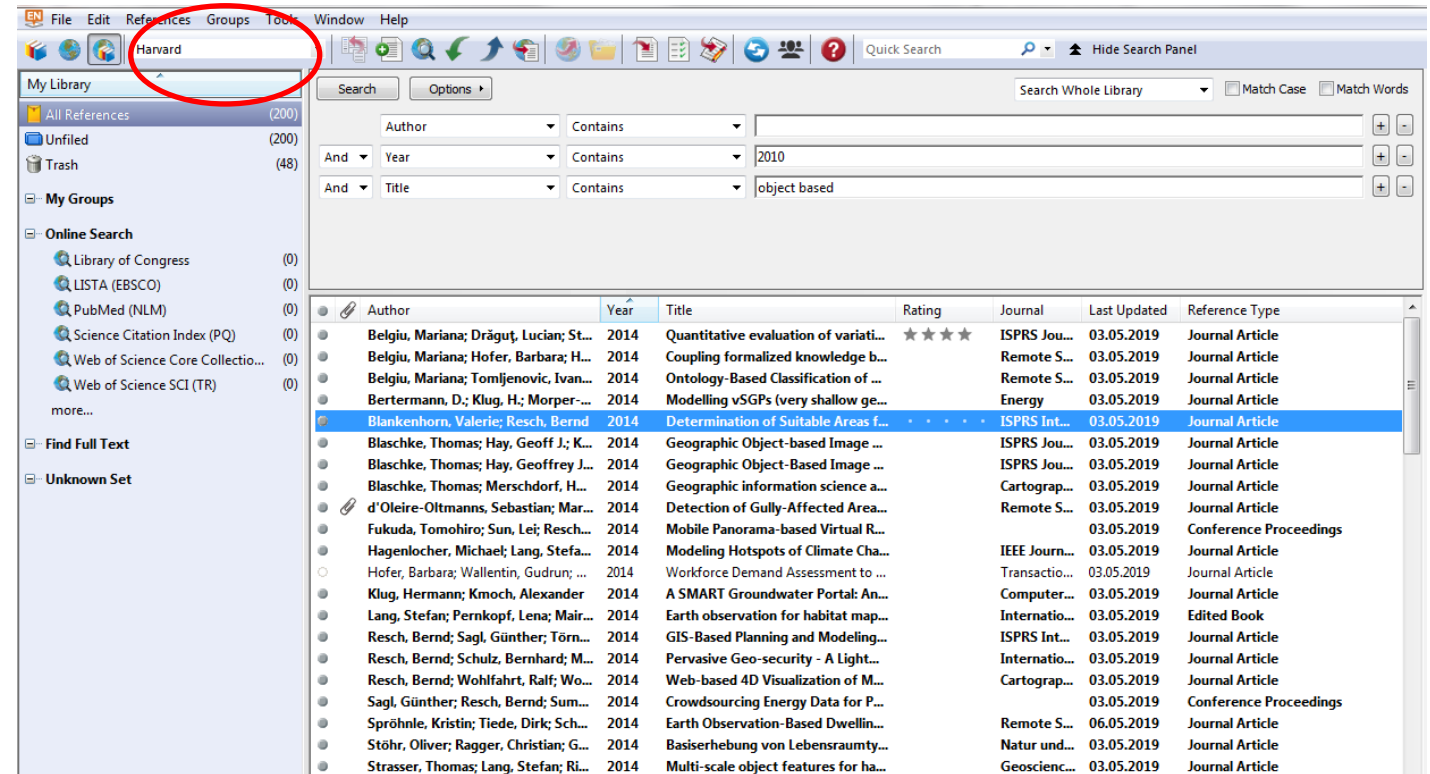
In the right section of the window, the short view of the reference appears in the currently set citation style.



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Manage and edit references

You can change the format of the reference. To do this, select a different "Output Style" in the menu bar of the database window via the drop-down menu. As an example, "Harvard", which is used in many humanities.



The screenshot shows the EndNote software interface. The 'References' menu is open, and 'Harvard' is selected as the output style. The main pane displays a list of references in a table format.

Author	Year	Title	Rating	Journal	Last Updated	Reference Type
Belgiu, Mariana; Drăguț, Lucian; St...	2014	Quantitative evaluation of variati...	★★★★	ISPRS Jou...	03.05.2019	Journal Article
Belgiu, Mariana; Hofer, Barbara; H...	2014	Coupling formalized knowledge b...		Remote S...	03.05.2019	Journal Article
Belgiu, Mariana; Tomljenovic, Ivan...	2014	Ontology-Based Classification of ...		Remote S...	03.05.2019	Journal Article
Bertermann, D.; Klug, H.; Morper...	2014	Modelling vSGPs (very shallow ge...		Energy	03.05.2019	Journal Article
Blankenhorn, Valerie; Resch, Bernd	2014	Determination of Suitable Areas f...		ISPRS Int...	03.05.2019	Journal Article
Blaschke, Thomas; Hay, Geoff J.; K...	2014	Geographic Object-based Image ...		ISPRS Jou...	03.05.2019	Journal Article
Blaschke, Thomas; Hay, Geoffrey J...	2014	Geographic Object-Based Image ...		ISPRS Jou...	03.05.2019	Journal Article
Blaschke, Thomas; Merschdorf, H...	2014	Geographic information science a...		Cartograp...	03.05.2019	Journal Article
d'Oleire-Oltmanns, Sebastian; Mar...	2014	Detection of Gully-Affected Area...		Remote S...	03.05.2019	Journal Article
Fukuda, Tomohiro; Sun, Lei; Resch...	2014	Mobile Panorama-based Virtual R...			03.05.2019	Conference Proceedings
Hagenlocher, Michael; Lang, Stefa...	2014	Modeling Hotspots of Climate Cha...		IEEE Journ...	03.05.2019	Journal Article
Hofer, Barbara; Wallentin, Gudrun; ...	2014	Workforce Demand Assessment to ...		Transactio...	03.05.2019	Journal Article
Klug, Hermann; Knoch, Alexander	2014	A SMART Groundwater Portal: An...		Computer...	03.05.2019	Journal Article
Lang, Stefan; Pernkopf, Lena; Mair...	2014	Earth observation for habitat map...		Internatio...	03.05.2019	Edited Book
Resch, Bernd; Sagl, Günther; Törn...	2014	GIS-Based Planning and Modeling...		ISPRS Int...	03.05.2019	Journal Article
Resch, Bernd; Schulz, Bernhard; M...	2014	Pervasive Geo-security - A Light...		Internatio...	03.05.2019	Journal Article
Resch, Bernd; Wohlfahrt, Ralf; Wo...	2014	Web-based 4D Visualization of M...		Cartograp...	03.05.2019	Journal Article
Sagl, Günther; Resch, Bernd; Sum...	2014	Crowdsourcing Energy Data for P...			03.05.2019	Conference Proceedings
Spröhnle, Kristin; Tiede, Dirk; Sch...	2014	Earth Observation-Based Dwellin...		Remote S...	06.05.2019	Journal Article
Stöhr, Oliver; Ragger, Christian; G...	2014	Basiserhebung von Lebensraumty...		Natur und...	03.05.2019	Journal Article
Strasser, Thomas; Lang, Stefan; Ri...	2014	Multi-scale object features for ha...		Geoscienc...	03.05.2019	Journal Article



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Edit references

Double-click on a selected reference to open a second window in which all the information can be viewed for reference. Here you can change and complete the reference. If you do not want a reference type to fit the selected source, just select the Generic type, which covers all database fields. The default is always the reference type "Journal Article".

Save the reference by closing the window on the cross or by clicking File > Close Reference in the menu. You can also close the reference with the key combination Ctrl + W.

Reference Type:	Journal Article
Rating	• • • • •
Author	Blaschke, Thomas Hay, Geoff J. Kelly, Maggi Lang, Stefan Hofmann, Peter Addink, Elisabeth Feitosa, Raul Queiroz Van der Meer, Freek Van der Werff, Harald Van Coillie, Fieke Tiede, Dirk
Year	2014
Title	Geographic Object-based Image Analysis: a new paradigm in Remote Sensing a
Journal	ISPRS Journal of Photogrammetry and Remote Sensing
Volume	87
Issue	1
Pages	180-191
Start Page	
Epub Date	
Date	
Type of Article	
Short Title	
Alternate Journal	
ISSN	



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Include references in a document

One of the main reasons for using EndNote is the direct connection to MS Word and other text programmes.

You now want to include your references in a text document. EndNote provides the tool Cite While You Write (CWYW for short), which is integrated directly into MSWord during installation. This tool is not visible.

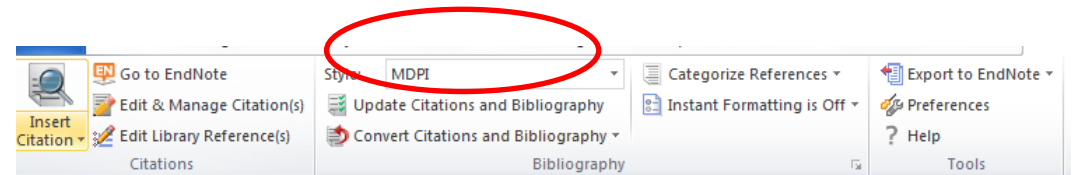
Write your text as usual. At the passage where the text should be inserted, click “insert citation”. Make sure that the EndNote library is open at the same time. A window will appear in which you can search your bibliographical references using keywords, author names and the like.



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Formatting bibliography and edit references

If you want to change the citation style in your word programme, just choose a new “style”.



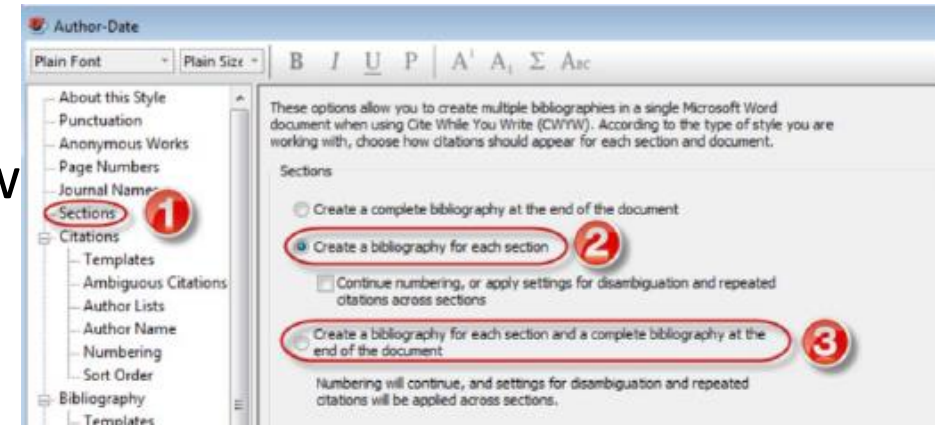
In the menu item “Edit & Manage Citations” individual references can be inserted or removed. This can’t be changed by hand but must be changed or deleted via the menu.



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Create a distinct bibliography

To create a distinct bibliography, select the references of your database and then go to the references menu > show selected references so that only the highlighted titles are displayed. Then go to File > Export and enter a memory space to add a new file name.



At the same time, you can use “Output Style” to select a desired style of citation. It is important that you check "Export Selected References" otherwise all the data of your endnote file will be taken over.



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Other literature management software products

Zotero: a free and open-source reference management software to manage bibliographic data and related research materials (such as PDF files)

- <https://www.youtube.com/watch?v=HwCL3qozuB4>
- https://www.youtube.com/watch?v=BQL_7C-YqBk

Mendeley:

- https://www.youtube.com/watch?v=Gv6_HuCYExM
- <https://www.youtube.com/watch?v=Re2Ysid5XIY>

(assessed on May, 16th, 2019)

