Direction de la documentation

Effective information retrieval / literature searches

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Learning objectives

By the end of this training session, you will be able to :

1. Put in place an efficient and effective literature search
2. Identify key concepts and related terms
3. Build search statements
4. Carry out advanced searches in search engines and key specialized online databases

Information retrieval / Literature search

Methodology

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How to begin your research

Definition

Understand your subject, identify the main concepts

Translation

Translate your subject into keywords

Synonyms

Find synonyms and related terms to expand your search

Search statement

Build a search statement

Tools

Begin your research using the right tools

From natural language to documentary language

The process consists in translating a sentence formulated in natural language such as the following:

What is the impact of air pollution on children’s health?

into a sentence that can be understood by a bibliographic search tool, such as this one:

("atmospheric pollution" OR "air pollution" OR particle*) AND (health* OR illness* OR disease*) AND (child* OR kid*)

➔ What differences do you observe between the 2?

Use boolean operators

- Boolean (or logical or search) operators connect your search terms to either narrow or broaden your set of results. They are used in advanced searches in academic libraries' catalogues and databases.

- There are 3 Boolean operators:

  - **AND narrows** your search by allowing you to **search 2 or more terms**
  - **OR broadens** your search by allowing you to **search similar terms together**
  - **NOT narrows** your search by excluding terms

- They usually appear in uppercase letters (AND, OR, NOT) to distinguish them from keywords.

Boolean operators

pollution **AND** health

Documents dealing **exclusively** with pollution **and** health

AND
= INTERSECTION

To find documents that only respond to the search words

child **OR** kid

Documents dealing with all the existing **synonyms** or **related terms** of a word

OR
= UNION

To find documents that respond to at least one of the words used in the search, or both.

health **NOT** asthma

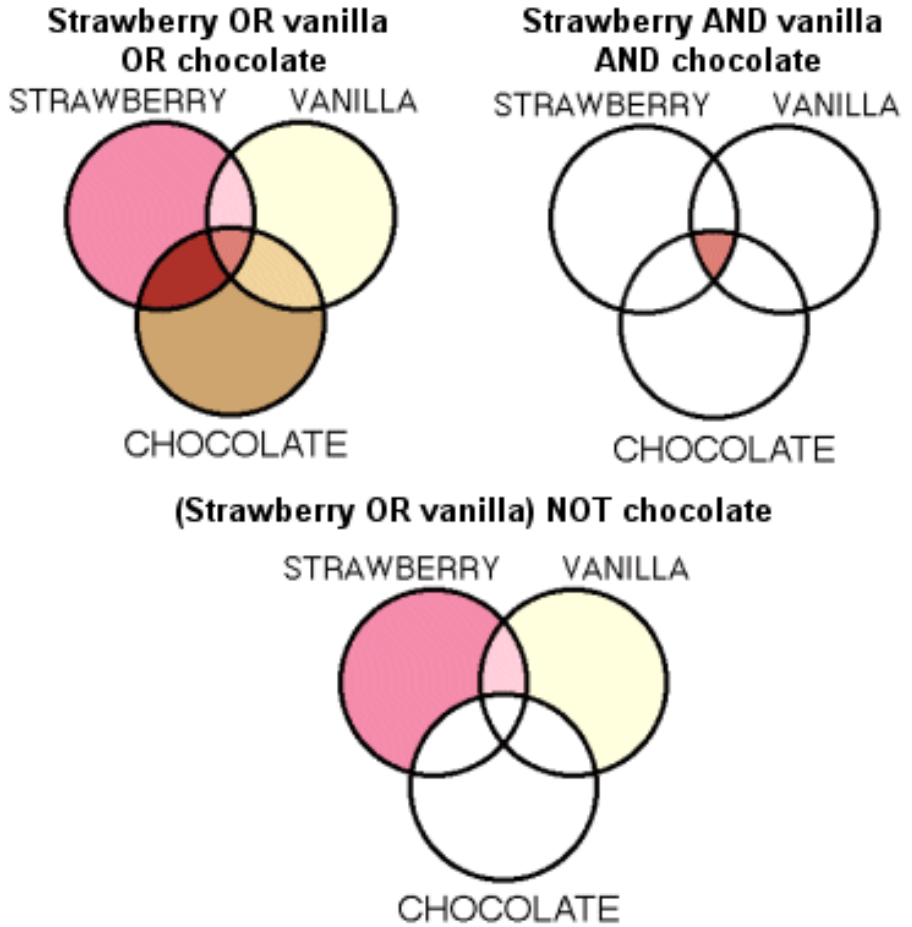
Documents dealing with health but **excluding** asthma

NOT
= EXCLUSION

To find documents that respond to the first search word but not the second.

- **AND** : both terms = **to limit** the search
- **OR** : either or both terms = **to broaden** the search
- **NOT** : excluding one term = **to limit** the search

The NOT operator may exclude relevant results.



Source Image : The story of mathematics - http://www.storyofmathematics.com/19th_boole.html

Search tips

The **truncation**, or asterix, broadens your search to include word endings and spellings, e.g. child* for child, children, childhood

Put your search terms in **quotation marks** to have words appear as an exact phrase, e.g. "atmospheric pollution"

Brackets are used to structure a request :
(“air pollution" OR particles) AND child

Avoid using words empty of meaning (i.e. **the, of, some, any**) as they are not recognized by databases

Your search question

➔ Use a table to gather keywords and synonyms or related terms

Concepts	Concept 2	Concept 3
Concept 1	Synonym / related term	Synonym / related term
Concept 2	Synonym / related term	Synonym / related term
…		

➔ Use a table to keep track of your searches and results obtained

Tool	Request	Date	Result
Pubmed	("lead poisoning/prevention and control"[MeSH Major Topic]) AND (2011:2023[pdat])	20/04/2023	174

Literature search and efficiency

	To reduce noise (too many results)	To reduce silence (too few results)
Keywords	Check the correct combination of keywords with Boolean operators Add a concept Use rare, discriminating and specific keywords / terms commonly used by the subject experts	Check the correct combination of keywords with Boolean operators Remove one or more of the concepts in your search Add synonyms to your search keywords Use more generic keywords / broaden your search
Choosing search tools	Choose a search tool with narrower disciplinary coverage Choose a search tool with a coverage that fits your topic	Choose a search tool with broader disciplinary coverage Choose a search tool with coverage that fits your topic
Using search tools	Check that you are using the correct syntax and query language Specify query criteria	Check that you are using the correct syntax and query language Expand query criteria

Information retrieval

Google and Google Scholar

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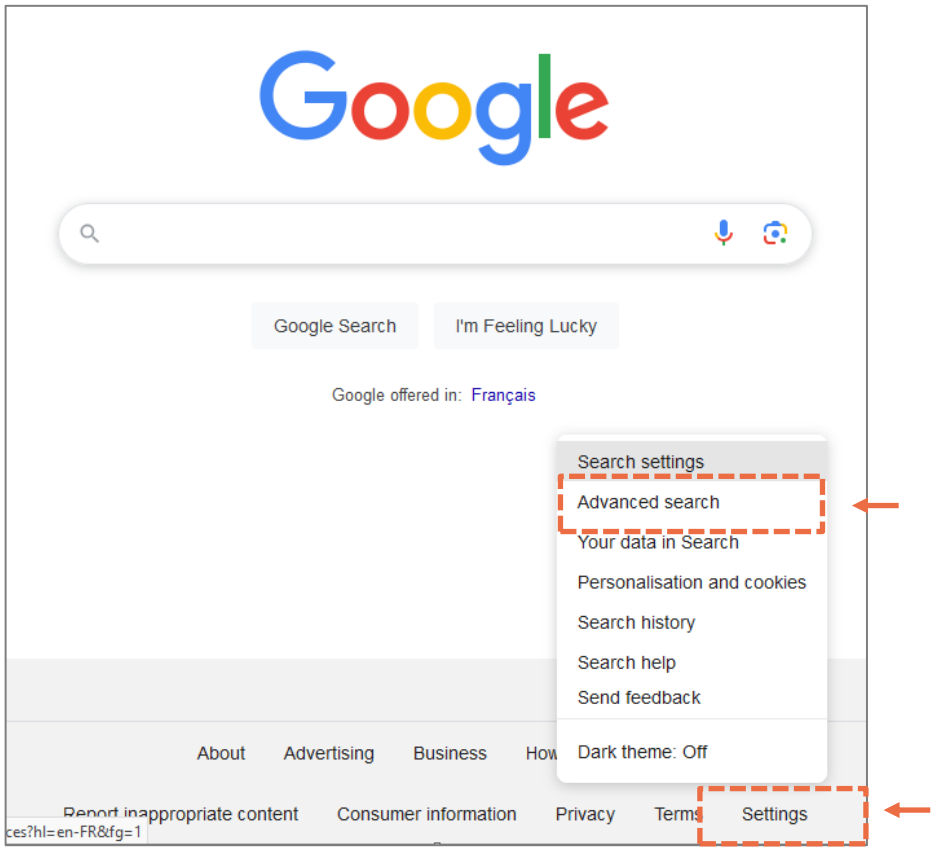
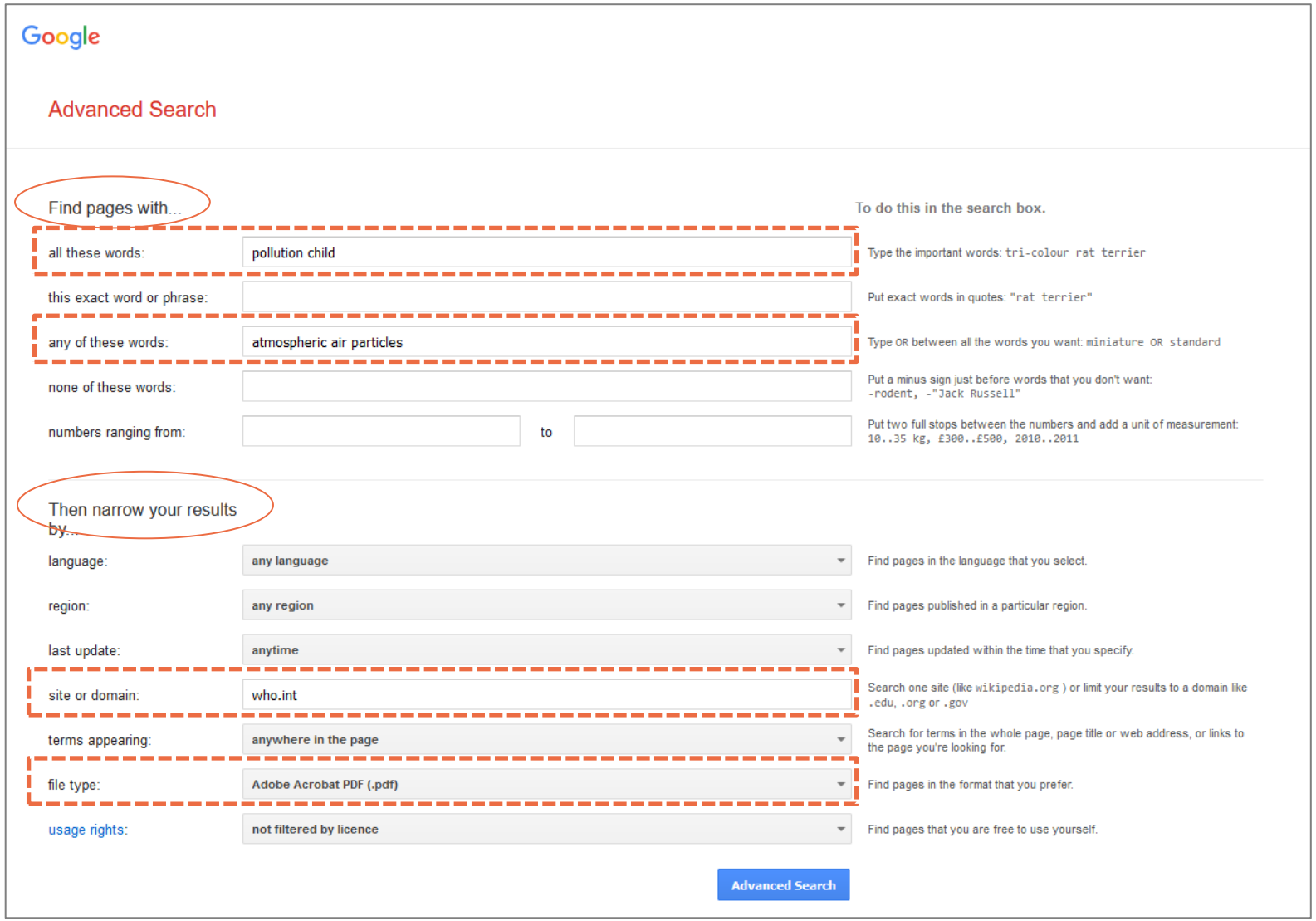
Google : advanced search for better results

➔ In Google's settings, select "Advanced search" to open the formular.



Google : advanced search for better results

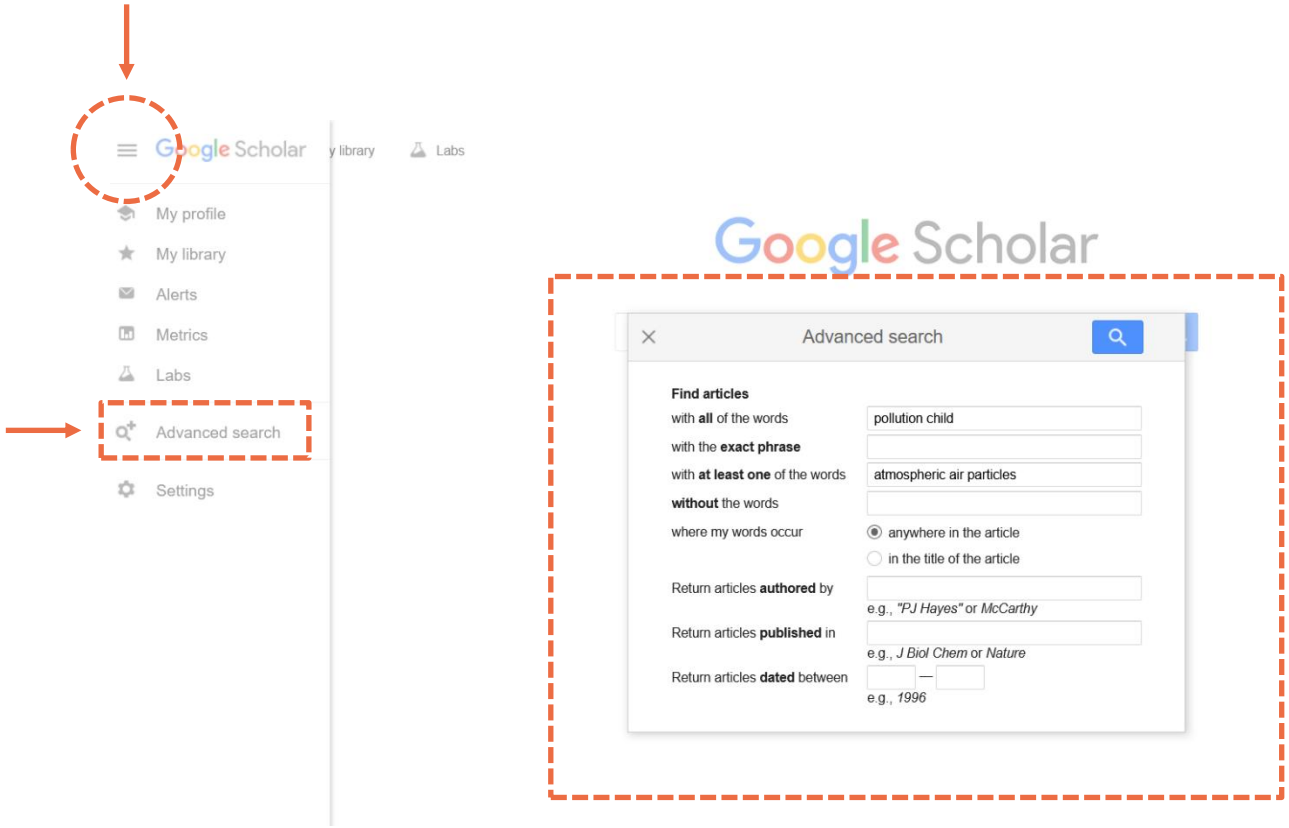


2. Google Scholar

- Google Scholar is a Google product designed for searching academic sources.
- The access to full texts is variable : full text articles are either available in free access (what is called open archives) or using Library Links.
- Google Scholar allows users to affiliate with up to 5 university libraries. Creating this affiliation enables people searching in Google Scholar to easily obtain the full text of articles and other electronic materials licensed by the university academic libraries.
- This program works best for electronic resources. Don't forget to sign in on your ENT beforehand. Once you have configured Google Scholar to be affiliated with Bordeaux University, a link will appear in the results list (see screenshot on next slide).

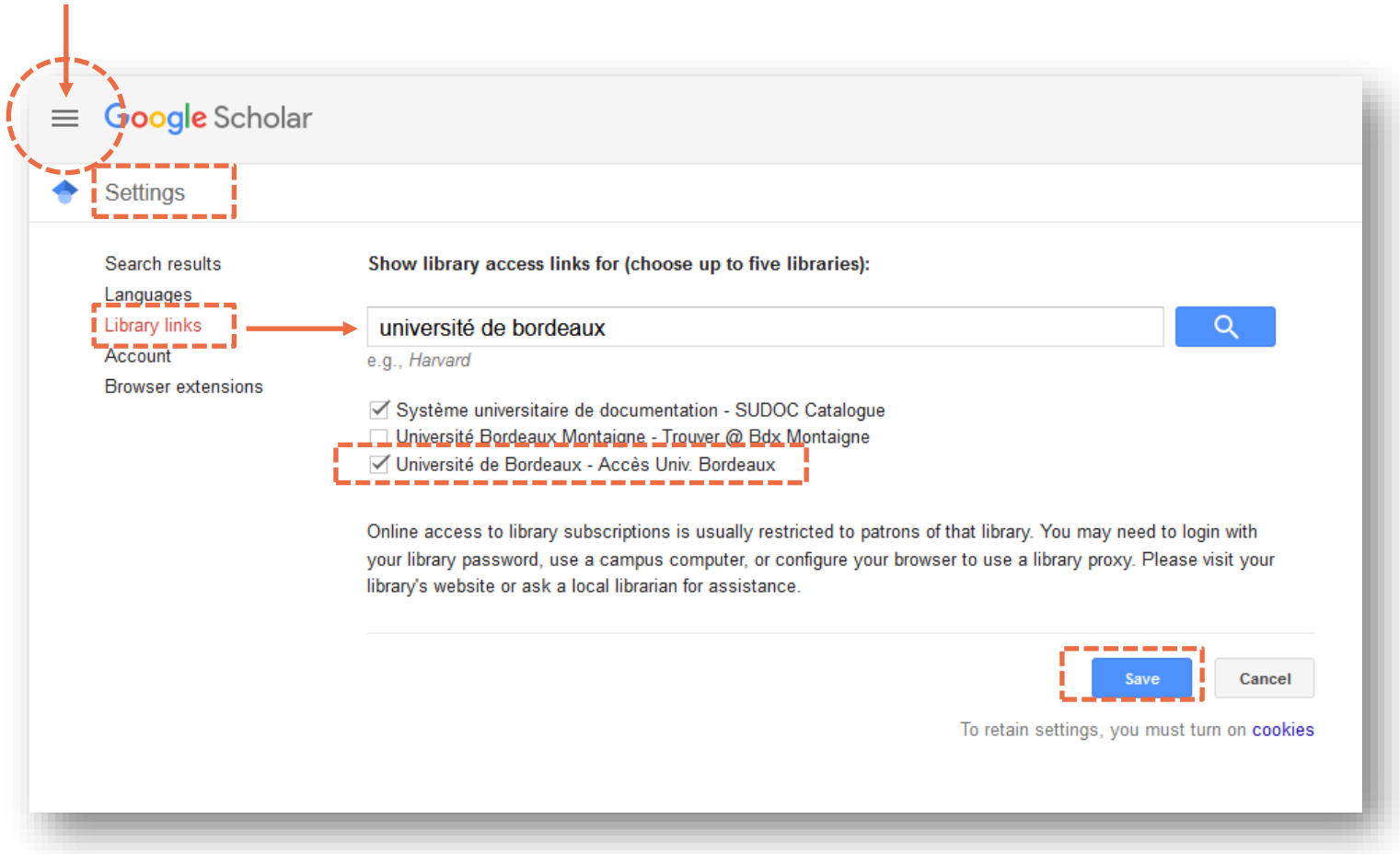
Google Scholar : advanced search for better results

➔ In Google Scholar’s settings, select "Advanced search" to open the formular.

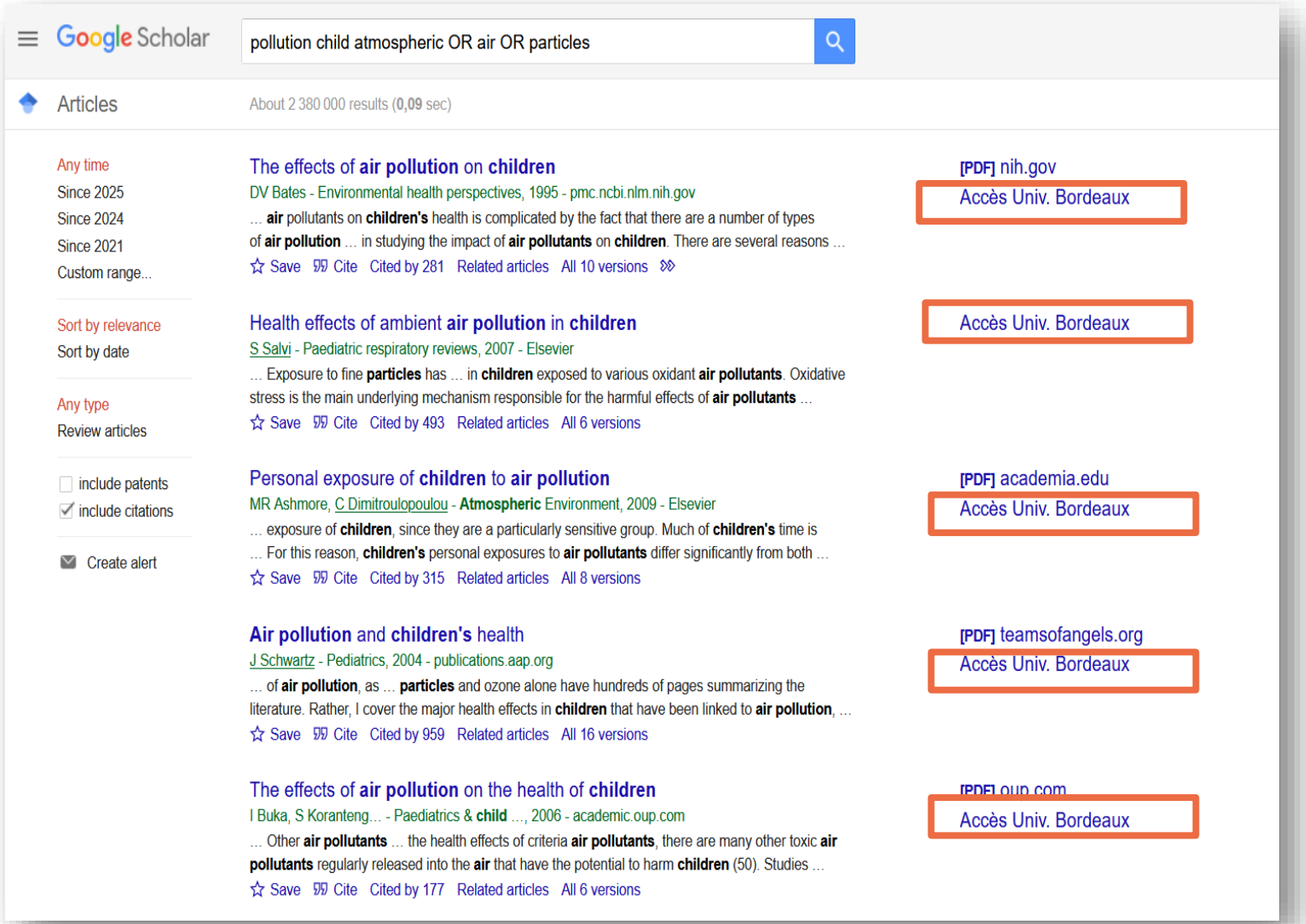


Google Scholar : library settings

➔ In Google Scholar's settings, select "Université de Bordeaux" in the **Library links** to access our subscriptions.

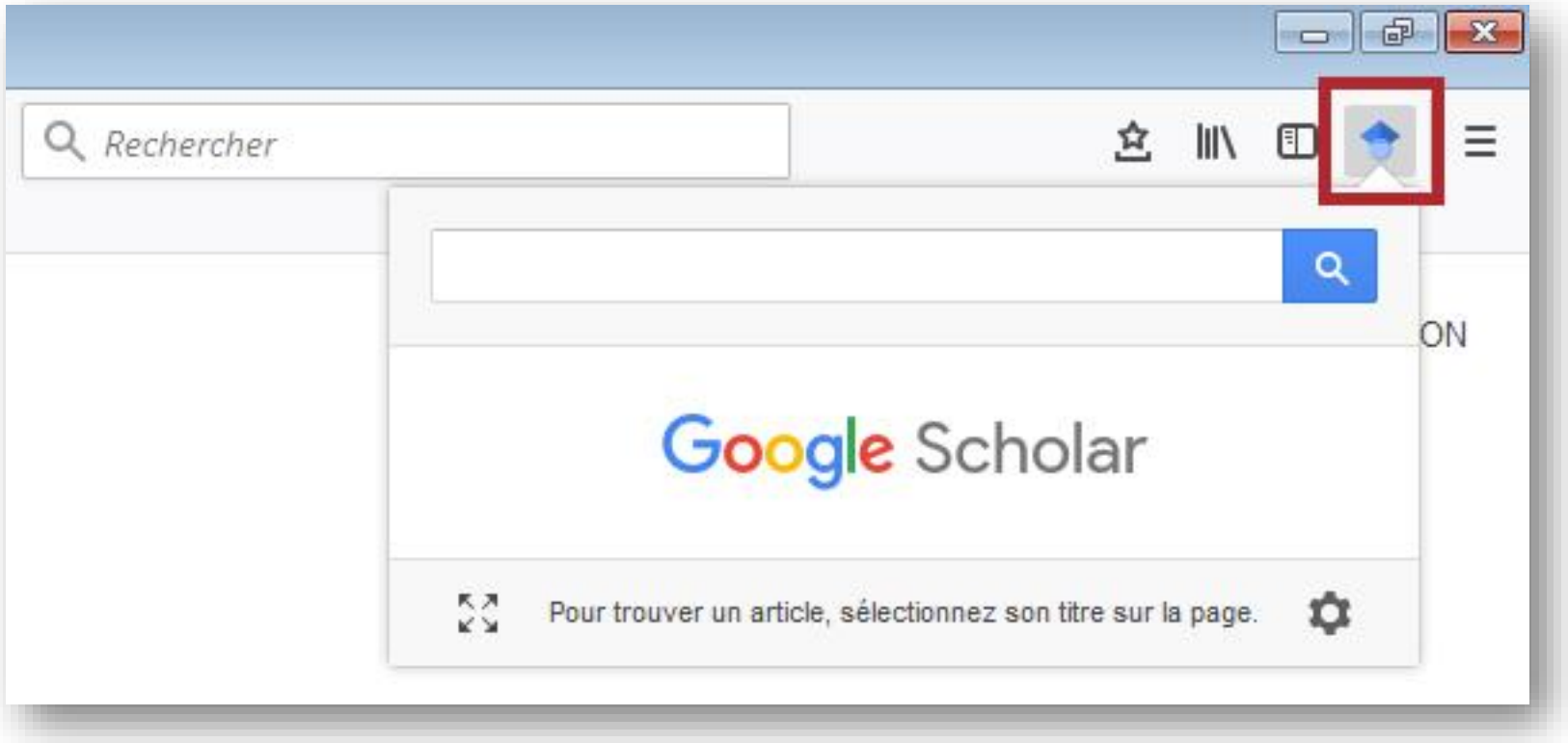


Google Scholar



Google Scholar : plugin for the navigator

➔ This extension adds a browser button for easy access to Google Scholar from any web page.



Information retrieval

Babord + and other services (BU Tchat, Interlibrary loan)

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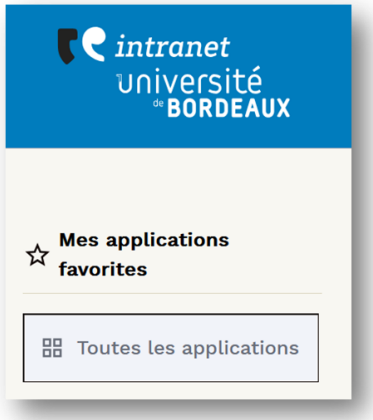

1. From the Intranet, click on **All applications**
2. Go to the **Documentation and University Libraries** section
3. Find literature via **Babord+** (type the database name then click on the hyperlink) or from **Thematic Digital Collections**

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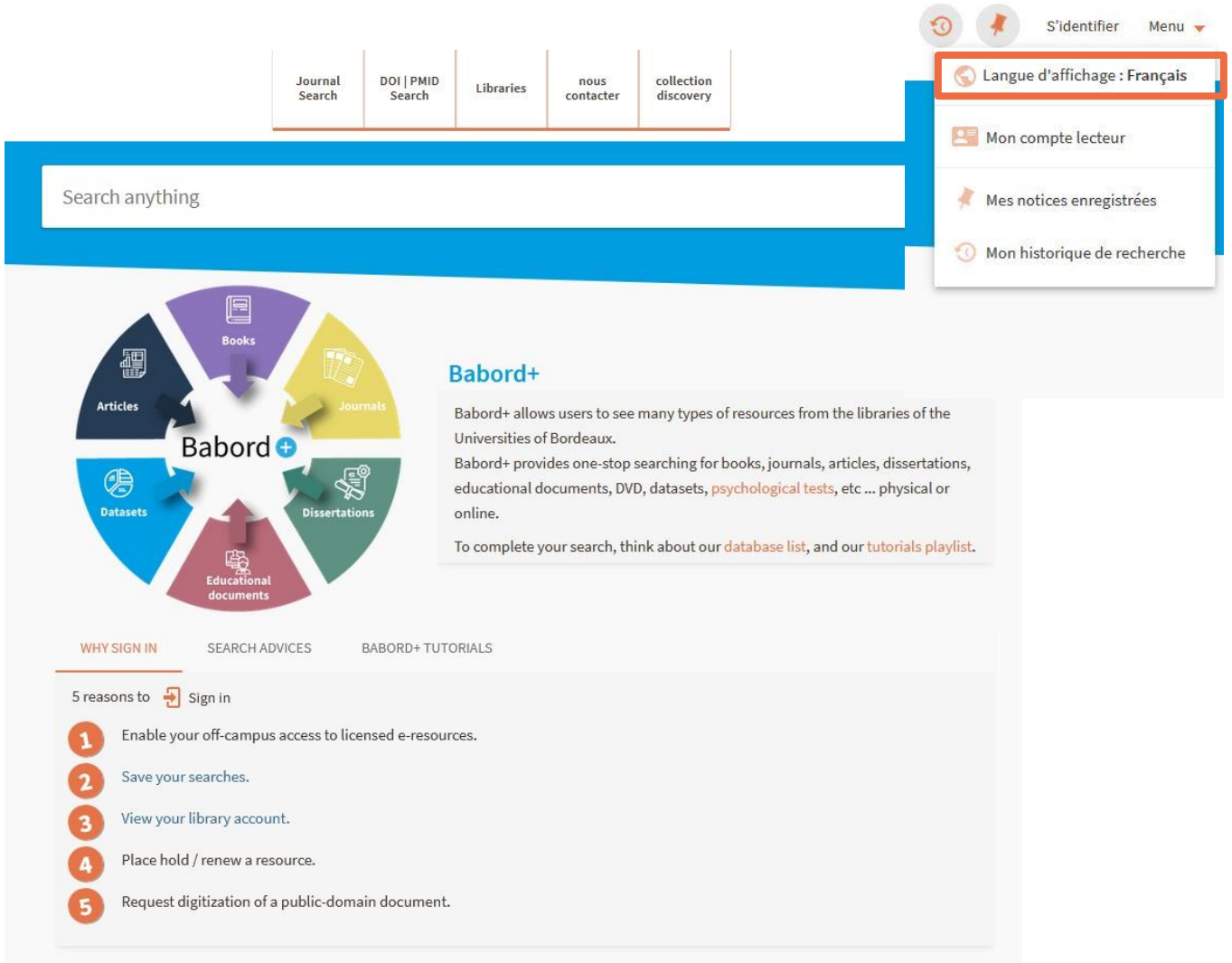
Babord +

- Babord+ locates physical or online documents from the entire academic libraries' network.
- Don't forget to log in your Intranet. This enables your off-campus access to licensed e-resources.
- You'll be able to view your library account.
- You can change the language displayed.



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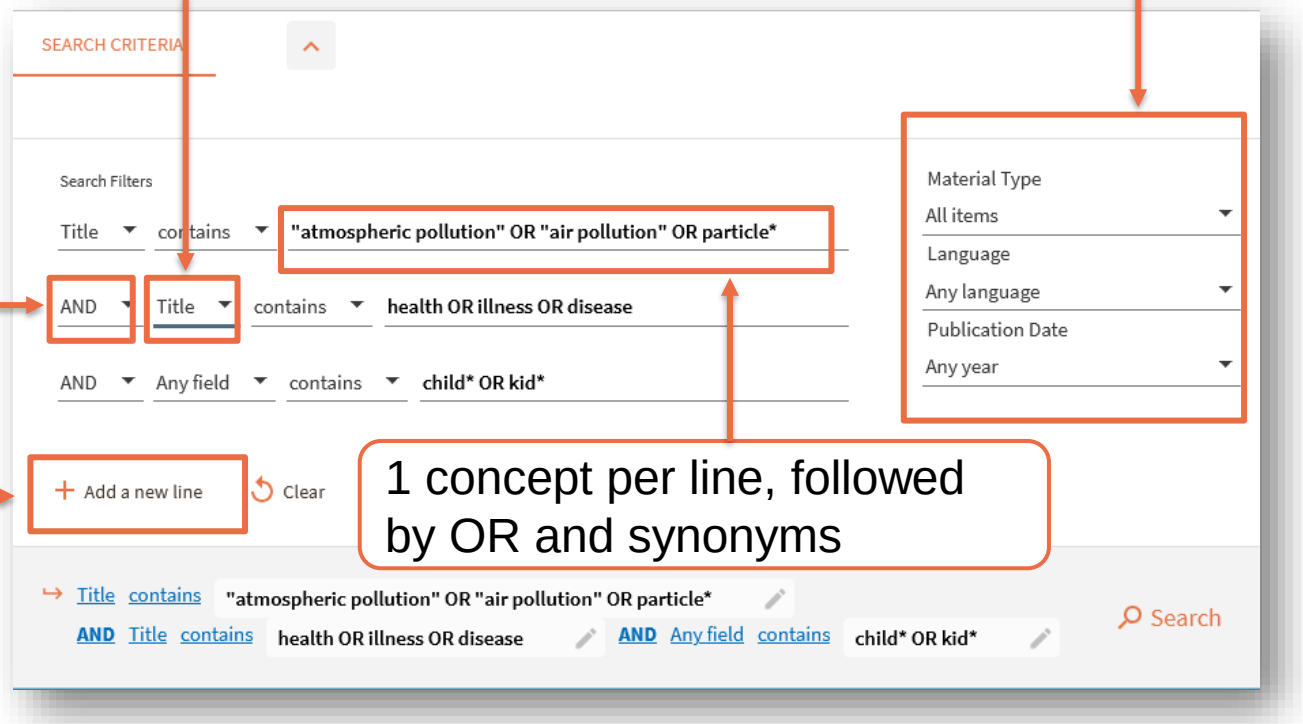
Babord + : Advanced search

Too many results ?
Narrow them down by searching with '**Title**' instead of 'Any field'

You can filter by :
- material type
- language
- publication date

Change the Boolean operator

Add lines



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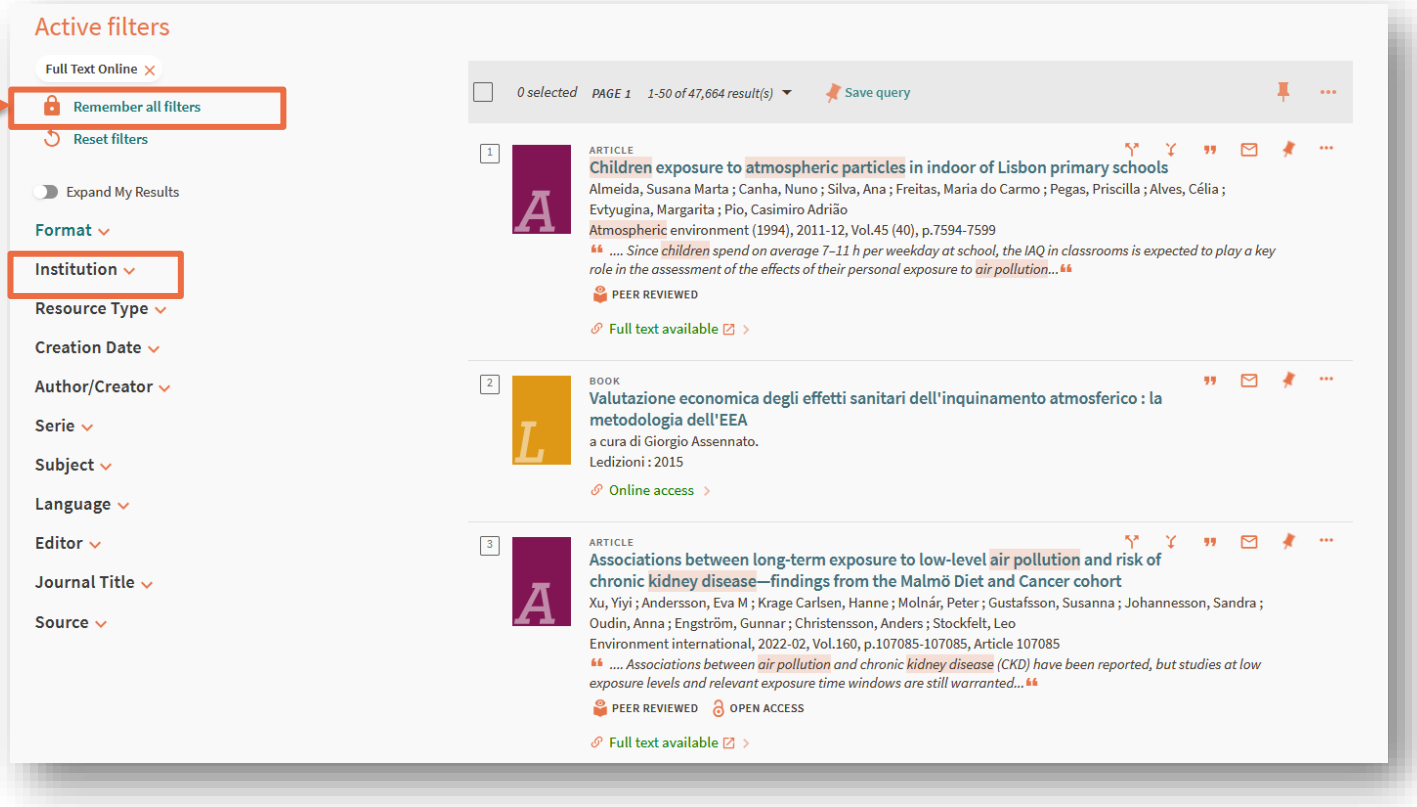
Babord + : Filters

Use filters to narrow the results of your search :

Click on **“Remember all filters”** to save them for your next search

Institution :
Université de Bordeaux



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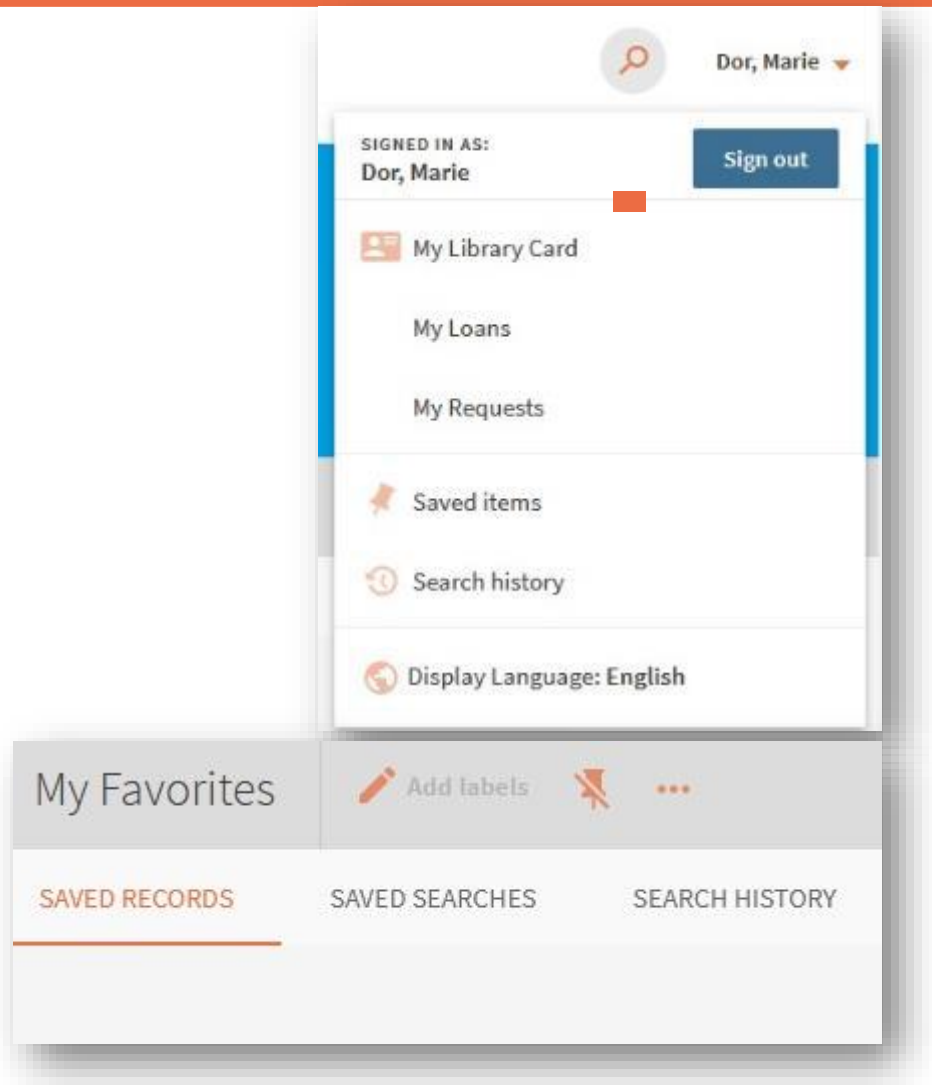
Babord + : Reader account

Your Babord+ reader account (top right corner) is available upon signing in. You can then :

- See your search history
- Check your loans
- Place a hold (My Requests)
- Renew a document (My Loans)
- Pin a result and create labels to organize your results (Saved records)
- Set up alerts (email)
- Request digitization of a public-domain document
- Export your results with Zotero



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BU Tchat

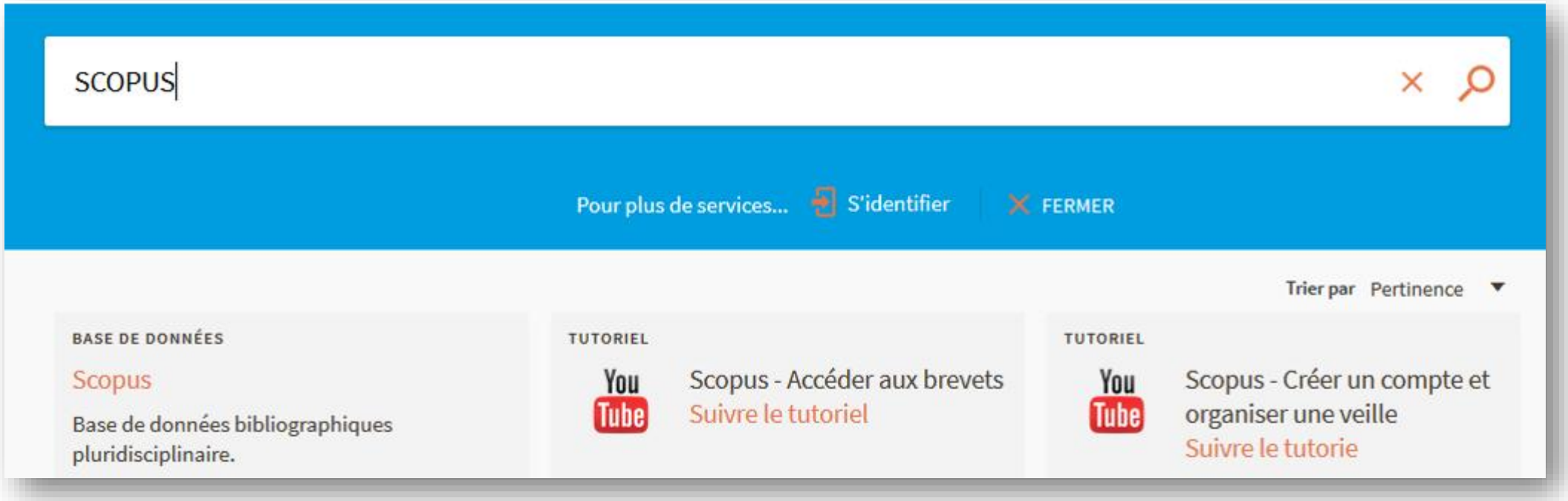
- Our librarians are here to help you.
- We offer an online chat service from Monday-Friday, 9am-5pm.
- You can find BU Tchat on your ENT under the tab ‘Bibliothèque’.

Our chat service can be accessed by clicking on the chat icon (bottom right side of your screen.)

The BU Tchat pop up window will also

Access to databases from Babord+

You can find SCOPUS (and any other databases subscribed by Bordeaux University) by typing its name in the search bar of Babord+. Don't forget to log in your Intranet, it will enable your off-campus access to licensed e-resources



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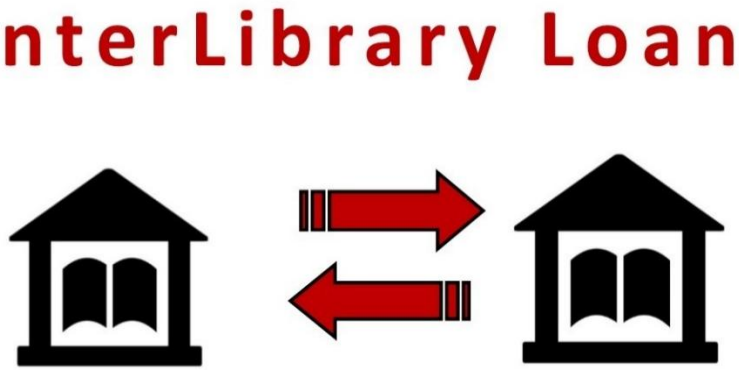
PEB – Interlibrary loan

- The interlibrary loan service provides access to library materials that are not available within Bordeaux University's collections.

- It is a useful, free service for researchers and students to request items from other academic institutions in France. There is a fee, however, for requesting printed documents from abroad.

- Complete this online form with the document reference and your contact details (name, student ID card number, email and phone number) :
  http://busec2.u-bordeaux.fr/peb/



Information retrieval

Search in open access platforms and databases

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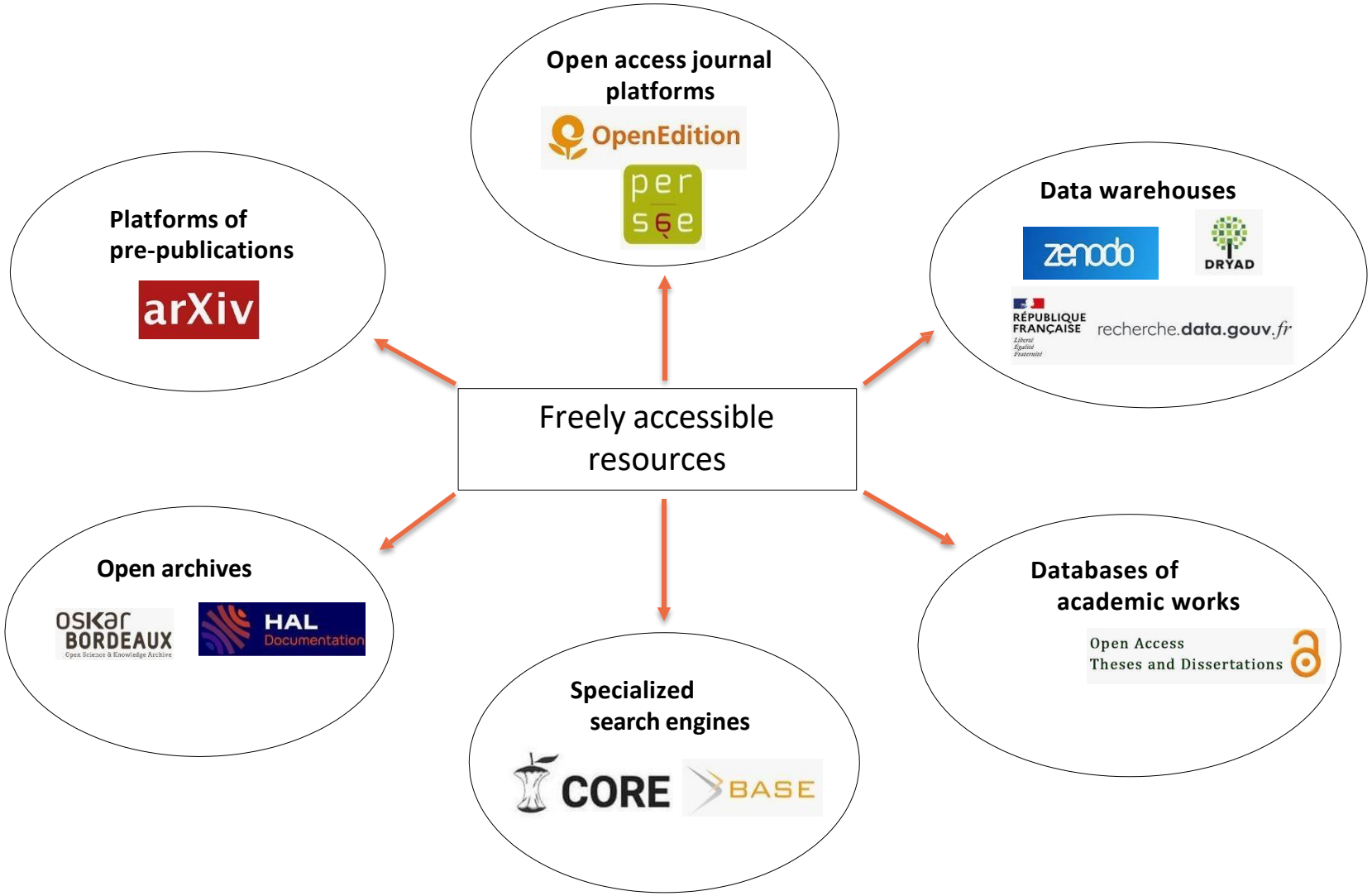
What is openness?

➔“Open means **anyone** can **freely access, use, modify, and share** for **any purpose**
(subject, at most, to requirements that preserve provenance and openness).”
(Open Definition)

Using available open resources



(Source: ***Passport to Open Science*** *- 2022*)

Hacking scientific papers : Sci-Hub

- **Sci-Hub** is a shadow library website that provides free access to millions of research papers, without regard to copyright, by bypassing publishers' paywalls in various ways.
- Sci-Hub was founded in Kazakhstan by Alexandra Elbakyan in 2011
- The site is extensively used worldwide. In September 2019, the site's operator(s) said that it served approximately 400,000 requests per day.
- Sci-Hub has been estimated to contain 95% of all scholarly publications with issued DOI numbers. Sci-Hub reported on 15 July 2022 that its collection comprises 88,343,822 files.
- Sci-Hub and Elbakyan were sued twice for copyright infringement in the United States, in 2015 and 2017, and lost both cases by default, leading to loss of some of its Internet domain names. The site has cycled through different domain names since then.
- **Researchers and PHD students should be aware that accessing such websites is illegal, as it hosts stolen intellectual property.**

Academic Social Networks

- **Academic Social Networks** (ASNs) are similar to social networking sites, but designed for the academic community. These online platforms allow you to develop a profile and connect with other researchers, while also allowing you to share academic related content. These tools are typically free to use. The most attractive feature of these sites is their offer of a user-friendly way to present your research articles and other scholarly outputs to your colleagues and scholarly communities worldwide.

- However, if you are looking to preserve and make your scholarly output discoverable in a trusted, non-commercial space, an institutional or subject open archive repository may be a better solution. **HAL** is a free and secure research repository created by the CNRS to disseminate and preserve the scholarly record of academic research in France. (Oskar in Bordeaux)

Academic Social Networks

ResearchGate

- ResearchGate is a commercial social networking site for researchers. A researcher is able to create a profile, share papers, engage in discussion, and find collaborators. Some metrics exclusive to this platform are also available.
- To create a profile: https://www.researchgate.net

Academia

- Academic.edu is a commercial social networking site for researchers. A researcher can create a profile, upload their work, and select areas of interest to find networks of users with similar interests. Analytics related to engagement with uploaded research is available.

- To create a profile: https://www.academia.edu

Using open available resources

- The open science movement's aims are to facilitate access to scientific content and encourage its reuse.
- Often we speak of **open-access resources:** thanks to their author and/or publisher, these resources can be freely accessed without researchers or their institutions having to pay.

- **Open access journal platforms:** Open access journals can have diverse business and editorial models : exemples.

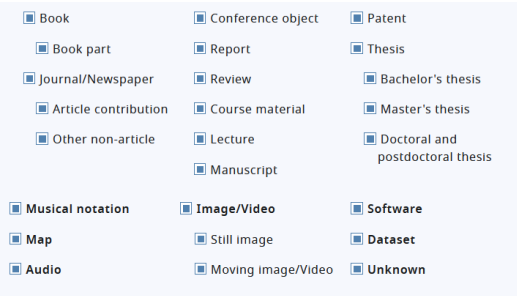
  - **OpenEdition Journals** offers 450 online publications in the humanities and social sciences.
  - **Persée** digitises and disseminates entire collections of journals retrospectively.

Using open available resources

➔ **Specialized search engines:** These aggregate open access content to make them easier to discover.

› **Core** (core.ac.uk) is a search engine specialising in open access academic publications (books, articles, theses, etc.).

› **BASE** is one of the world's most voluminous search engines especially for academic web resources. BASE provides more than 300 million documents from more than 10,000 content providers. You can access the full texts of about 60% of the indexed documents for free (Open Access). BASE is operated by Bielefeld University Library.



› **Click & Read** Developed by the CNRS to facilitate access to documents it can be installed as a browser extension and offers free access versions of all the articles available in its database.

Using open available resources

➔ **Databases for theses or academic works:**

These databases aggregate the digital thesis collections of universities and research centres.

➔ Visit

› **Open Access Thesis and Dissertation (OATD).** OATD.org aims to be the best possible resource for finding open access graduate theses and dissertations published around the world. Metadata (information about the theses) comes from over 1100 colleges, universities, and research institutions. OATD currently indexes 6,511,367 theses and dissertations.

➔ **Open archives:** These may be institutional or thematic, and scientific productions are deposited in the archives by researchers themselves for free consultation.

› **HAL,** the multidisciplinary archive for French research.

› **Oskar Bordeaux :** is the institutional open repository of the University of Bordeaux and its partners.

Thank you

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