Appendix to videos 1-6 'Advanced Literature Searching'
Additional (very) Practical Tips
2023 October 03

This file contains further tips and guidelines for literature searching to find the state of the art of scientific psychological research questions. It contains tips that do not require video explanations, and it starts with rehearsing the most important messages from the videos.

> Disclaimer:
> 1. the tips and guidelines in the videos and this file concern literature searching with the purpose of finding the state of the art, the cutting edge of scientific knowledge regarding a certain topic ort question. It is not valid for other searching goals, for example finding general information or explanation of a topic, specific articles or authors, just 'the latest findings' etc.,
> 2. the tips and guidelines in the videos and this file assume basic the basic searching skills in the reader, such as working with electronic databases like Web of Science, Pubmed of PsycInfo, use of Boolean operators, such as 'AND', 'OR', use of truncation (e.g. *stress*, anxi**), use of quotation marks for combined words (e.g.*"blood pressure"*), and finding full text articles

Content

Most important messages of videos 1-6

- ✓ The enormous, exponentially *increasing quantity* of scientific peer reviewed articles, and the *different languages of psychology* makes using a <u>systematic keyword profile indispensable</u> for <u>reviews of the state of the art</u>
- ✓ Wrong solutions to include using only books or Google Scholar, or searching in a limited number of years
- ✓ A keyword profile is complete, practical, controllable, repeatable and ... academically rewarding
- ✓ Quickly testing out new keywords with the isolation strategy
- ✓ Large amounts combined keyword phrases: use test *groups of keywords*.
- ✓ Check abstract relevance quickly with *highlighted keywords*
- ✓ Using only 1 keyword profile, 1 database, 1 search window
- ✓ Finding keywords: be creative, explore and ask

How many abstracts or 'hits' are sufficient?
- Depends on your research question...
- First a reminder: <u>you get far more irrelevant hits than relevant ones</u>.
- For general purposes , 200-300 abstracts are easy to scan will often yield ± 10-50 relevant ones…
- If - even with your smart keyword profile - you find too much: *you need more time or narrow down your research question !*

How to handle high numbers of abstracts
Smarter keyword profile:
- 'Isolation strategy': to detect keywords yielding only irrelevant abstracts (see video 4)
- Use 'refine results': e.g. *document types*: *article*; *review* (<u>the rest is not peer-reviewed</u>) *language=English*; (<u>don't select 'highly cited'!!</u>)
- Restrict subject *(e.g. a single disorder, stressor, habit, only blood pressure during sleep, etc.)*

NB. *in Pubmed you can also select on gender, age, species (animal vs human) etc.*

How to use reviews
→ If you find a good review, do you have to search any further?
You can skip all years up to ± 1 year[*] before the review was published, but <u>only if the review used</u>:
- your <u>exact</u> keyword profile
- your <u>exact</u> exclusion criteria *(e.g. only elderly people, patients or animals...)*

<u>In all other cases</u>:
- use its studies if relevant but <u>look also for other, preceding studies</u>

[*] because of the gap between searching & publishing

Revisited: 'recent' articles

It goes without saying that "finding the most recent data" in science does not mean *only* the most recent data. It means *all data* available *now*, or as recent as possible. It *can* mean that earlier findings have recently been proven to be unlikely or even wrong, but only after considering all available data, and thus by using systematical reviews or meta-analyses.

Often but not always more recent studies use better methodology. However, that is no a reason to discard older studies. Instead, in systematic reviews or meta-analyses the quality of methods is duly taken into account, and the final conclusions are weighed with respect to it.

Revisited: finding keywords

Thesauruses:

Web of Science: no thesaurus

PsycInfo: *Main menu, or in basic search, click on "Suggest Subject Terms"*

Pubmed: *Main page, right under: Explore; MeSH data base; type in search term , e.g. breast cancer*

Found relevant articles elsewhere? Adapt your keyword profile

Any relevant article found in other ways than via your keyword profile has to finally be found … by your keyword profile too! Never cease adapting your keywords profile until it detects the article. Check the article for new keywords.

Tip: to quickly check if you can find it limit the search by using the author(s)' (s) name(s) in field 'author')

Using articles' reference lists (*'snowball method'*) only to identify new keywords

Often you will get the advice to inspect reference lists of found articles ('snowball method'), to find additional relevant articles. Be aware that any relevant article found in this way has to

be found by your keyword profile too! Since you did not, they apparently use underline different keywords, which you should identify, and add to your keyword profile and search again - which by the way is NOT much work if you use the *isolation strategy* (see video 4), that is, testing the new keyword(s) while excluding those found with the older keywords by {NOT (*fill in: older keywords*)}

Revisited: too many keywords - the example of "stress"
... and why you have to choose
- **stress*** is *by far* not the only keyword for "stress"….
- There are *stress responses* and *stressors*

<u>Stress Responses</u>: Alternatives to **"stress respons*"** are **"stress level*"**, or negative emotion phrases such as **"negative emotion*"**, **"negative affect*"**, anxiety-related phrases (**anxi***)**,** anger-related ones (**anger or angr***), or still other, such as **distress***

<u>Stressors</u>: there are countless *stressors*, too many for a keywords profile.... Let's have a brief look at:
> ### Different types of STRESSORS:
> - **Psychological trauma's**
> - **Life changes / Life events**
> - **Daily hassles**
> - **Chronic stressors**

The trickiest is **live events**. With generic <u>keywords such as "life events" you will miss lots of studies</u> that focused on only *one* event, like losing one's job or marriage problems. You'll have to either explictedly chose for 'number' (accumulation of) events, or chose one or a group, or include all possible events (which is very difficult).
> *Just some examples of **life events**: dead of a loved one; divorce; serious illness self or family member; personal injury or illness; change of jobs; pregnancy; gain a new family member; sexual difficulties; getting fired; retirement; financial or property loss; legal difficulties; prison sentence; retiring; marriage*

For **daily hassles** this problem is less critical, since there will be few studies on single daily hassles. So generic keywords may work - such as "daily hassle*" or "everyday problem*" (and alternatives, synonymes and different combinations). Still, studies can be focused on groups of hassles (e.g. techno stress involving daily use of internet, e-mail, online working, smart phones etc.) for without using the generic hassle keywords
> *Some examples of a countless number of **daily hassles...:** important items lost; disagreement with your neighbours; too many social obligations; some people did ignore you; family member has health complaints; you wanted something you cannot afford financially; you had to take over annoying tasks from others; your night's rest was disturbed; you had to take difficult decisions; you had a conflict with colleagues; you were being ridiculed in company; including some more contemporary ones: smart phone battery dead; fear of missing out (FOMO); too many e-mails…..*

Chronic stressors: better use keywords for specific **chronic stressors**, since generic keywords such as "chronic stress*" will often <u>not</u> be used in studies with specific chronic stressors.
> *Examples of often studied **chronic stressors**: low social economic status (SES); environmental stress (e.g. from traffic; neighbors); work stress; marital stress (low quality relationships); caregiving (for e.g. spouse with Altzheimer); psychopathological conditions: anxiety disorders, depression, PTSD, OCD etc.*

Specific chronic stressors within chronic stressor. However, even within one rather general chronic stressor there are many stressors and thuis multiple options for specific keywords.

> *As an example, take **work stressors.** There are for example may work-schedule-related stressors, <u>each requiring its own keyword</u>! The same is true for: task-related job stressors, e.g. high workload (effort), job control, - responsibility, - complexity, ... ; reward related stressors, e.g. high demand/low reward, ... ; career-related stressors; job insecurity or being unemployed; stressful change processes, e.g. organisational change; role stressors, e.g. role ambiguity, role conflict; social work stressors, e.g. social conflict; low support, problems with superiors; psycho-physical stressors, e.g. noise, smells etc..; <u>and still more</u>....*

The <u>solution</u> is to choose <u>one</u> category, and be <u>exhaustive</u> within that category

Watch out: use of keyword 'stress' in medical literature

On the example of stress again: if you encounter stress used in a biological sense - such as 'oxidative stress', 'cell stress', etc....

Use more specific <u>qualifying terms like</u> *psychological* stress terms or e.g. *chronic* stress terms such as "chronic stress" OR "psychological stress" OR "psychosocial stress" OR "emotional stress" OR "negative emotion*" OR anxiety OR "job stress" ….. Don't just put *NOT* in front of these terms: you will miss studies using stress in both medical and biological sense.

e.g. cancer and anxi* and "oxidative stress"* ➜ *>80*

Saving titles for later & create 'alert'

- Mark titles & *Save as marked list* and e.g. send to yourself as *email* save in e.g. *Endnote* (make sure you are subscribed)
- Create Alert to update your search later! Click *Save history / Create alert* to save your search and create an alert (*only Core Collection database*)

WARNING: do this only when you are sure about your FINAL keyword profile - otherwise you will have to do these steps over and over again…..!!!

When to look for the full text and actually read it

Get the *full* article and read it, ONLY
- When your keyword profile is complete
- When the abstract seems really relevant

If full text seems not available:
- Check *Researchgate*: is author a member?
- Trace e-mail addresses of the authors (*use info in 'address for reprint', otherwise through internet*): authors are always keen to send your their stuff to be cited…
- If no success – bad luck – often the article is of doubtful quality anyway

Too many irrelevant articles? Use 'core databases' not 'all databases'

At 'Select a database' choose '***Web of Science core collection***'.

Default is often the ***all databases*** option (all databases that our institute subscribes to), which *seems* better than the ***core collection'***option because it yields much more and would include Medline. However, I have found several times with specific queries that there is no significant difference: the additional articles found with *all databases* seem to be irrelevant or of very low quality or from irrelevant sources and often from rather obscure databases.

So there is certainly 1 drawback to *all databases:* a lot of 'junk'.
There are also two (questionable) advantages:
- *Core databases* are about a month behind - but how important is a month? (BTW, Pubmed is more 'recent')
- With *all databases* you really get the most out of it, i.e. also articles from (questionably) peer-reviewed journals but of really low low (or at least very questionable/unknown) quality .... but do you want that? No…

Too many irrelevant articles? Circumvent *KeyWords Plus* in field 'Topic'

Roughly 30-50% of the irrelevant articles in your pool of found articles are due to KeyWord Plus, which makes scanning the articles far more work than necessary. The field 'Topic' – the advised field to be used in *Basic Search* - consists of Title, Abstract, Author Keywords and KeyWords Plus. According to the WoS site "KeyWords Plus consist of words and phrases harvested from the titles of the cited articles." Seemingly helpful, but in fact not at all. The problem is that Keywords Plus doesn't use your keyword profile, i.e. the exact combination of keywords, but *single keywords from it*, and then "harvests from the titles of the cited articles", with the result that you often get many irrelevant articles (NB if it would use your profile it would be obviously redundant because Topics already looks into Title). *So, Keywords Plus does NOT add any relevant articles*.

How to solve this? Fortunately, since 2020 single field denominators are available in *Advanced Search* for Abstract (AB) , Author Keywords (AK) and KeywordsPlus (KP) - for Title (TI) it already existed. Thus, you can now leave out KeywordsPlus by repeating your search available in *Advanced Search* using only TI, AB, and AK. An example makes this clear. Let's say you have the simple search profile *stress* and acne*.

Using in *Basic search stress* and acne* and thus with the field Topic yields **544** articles (in August 2020)

Using in *Advanced Search TI=(stress* and acne) OR AB=(stress* and acne) OR AK=(stress* and acne)* yields only **376**

Thus, you are relieved from 544-376= **> 30%** irrelevant abstracts!

It requires a bit of work – because you have to add, correct, replace your keyword profile 3 times each time - so you might decide to do this only toward the end of your search work.

Other WoS tips:

An example of a basic WoS techniques, such as Boolean logic:
https://www.youtube.com/watch?v=hCGit4csvqA

Long keyword profiles fit in WoS' window. There is a limit though, which is currently 200 keywords.

Watch out with 'hard returns' and quotation marks from your word processor. For example, when preparing a keyword profile in Word, its 'hard returns' and certain other marks such as quotation marks (e.g. "blood pressure") may not be copied well into the WoS 'search window'.
Solution: Use this one: ", or edit keyword edit keyword profile in Window's Notepad ('desktop accessories'; 'all programmes' in 'start menu') or Mac's Textedit ('programs').

Limits to Boolean operators: You can use up to **49** Boolean operators (e.g. AND OR etc) in a single search query.

Use more truncation asterisks (*) - to prevent WoS' unhelpful lemmization! Better use for example *child** than *child* or *children*: WoS automatically applies

lemmatization rules and uses its 'hidden lexicon' (e.g. ***child*** will also yield ***children*** but… child is <mark>*not highlighted*</mark> in these related words! <u>making abstracts **less** easy to quickly check.</u> Again, seemingly helpful, but in fact not. So better use as many * as you van, and e.g. simply ***child**** etc. and you get all child-related words…

Other example: better use for example ***allerg**** than ***allergy***: again WoS automatically applies lemmatization rules and thus ***allergy*** will also yield ***allergies*** and ***allergic*** but… these are <mark>*not highlighted*</mark> So better use simply ***allerg**** and you get them all…

Nastier is: with ***noise*** I found articles with rather irrelevant, and unhighlighted - ***de-noising*** . Not when I used ***noise****…

<u>The truncation asterisk (*) works not only at the end of a word stem.</u> The asterisk (*) represents any group of characters, including no character. E.g. use ***mi*RNA*** to get ***miRNA***, ***microRNA*** and more.

Watch out: truncation within quotation marks (e.g. *"wordstem*"*) does not work in Pubmed!

<u>Finding words 'close to each other'</u>. NEAR/x to find records where the terms joined by the operator are within a specified number x of words of each other. E.g. ***childh* NEAR/2 maltreat**** will also find ***maltreatment in childhood***.

(NB the default for **x** = 15 words)

<u>Narrow down in meaningful way.</u> Too much with "blood pressure"? Restrict e.g. to blood pressure at night ('non-dipping')

idem with cortisonl: e.g. Cortisol awakening response etc

<u>Different spelling expected, use the dollar sign (\$).</u> For example, ***odo\$r*** finds odor and odour. Same for ***behavio\$r**** etc.

NB. You cannot use the dollar sign *(\$)* in quoted (" ") searches.

<u>Add the database as bookmark to your internet browser.</u> This way you don't need to go through all steps of your institute's digital library next time. (tip: organise your bookmarks in bookmark folders! Much easier this way…)

If you still want to use more databases… how to control duplicates?

Reference managers such as Endnote can check duplicates, the number of which can be extremely high depending on your search. But reference managers don't show abstracts and don't feed back to databases. So it is only useful after having done the repetitive and redundant work of determining relevance in all your databases.

Solutions? For the general fields of psychology and health I suggest the following. Use WoS core database instead of PsycInfo. I have never seen a relevant article detected by the latter that was not already detected by the former. Instead of using Pubmed as a second database to WoS' core database you can use Medline (see below) within WoS. To prevent duplicate you can use *all databases* which combines Medline with other databases (including those with psychological articles). The disadvantage is that you get – in my experience – at least 30% irrelevant articles from rather obscure sources.

*Other databases have many disadvanges, e.g. Scopus, apart from no suscription by our libary (2020) it has low coverage before '85 ((*https://en.wikipedia.org/wiki/H-index*) perhaps it has extended already toward '70 while I am writing this, but still…), includes very low impact journals etc. Embase has some additional features to Pubmed but I have no experience with it.*

We are open for better suggestions.

Pubmed and Medline (in WoS)

Pubmed is user friendly and widely used interface to search -basically- Medline, the world's leading medical database. Medline can also be reached within WoS but all important journals are already included in WoS' *core database*.

Pubmed's disadvantages.

There are several <u>disadvantages</u> to Pubmed. For example, it **lacks easy highlighting of keywords in abstracts** (see below). An even more important searching disadvantage is that as mentioned above, **truncation within quotation marks (e.g. *"wordstem*")* does not work in Pubmed!** So, you need to write out all possible combinations, which in many cases, such as with work stress is very exhaustingly and time consuming.

> Take the example of work stress. Instead of simple using *"work* *stress*"* in Web of Science, in Pubmed you have to use: *"work stress" or "work stressed" or "work stressor" or "work stressors" or "work stresses" or "work distress" or "workrelated stress" or "workrelated stressor" or "workrelated stressors" or "workrelated stresses" or "workrelated stressful" or "workrelated distress" or "workrelated distressing" or "workrelated distressful" or "workplace stress" or "workplace stressor" or "workplace stressors" or "workplace stresses" or "workplace stressful" or "workplace distress" or "workplace distressing" or "workplace distressful" or "worksite stress" or "worksite stressor" or "worksite stressors" or "worksite stresses" or "worksite stressful" or "worksite distress" or "worksite distressing" or "worksite distressful" or "worker stress" or "worker stressor" or "worker stressors" or "worker stresses" or "worker stressful" or "worker distress" or "worker distressing" or "worker distressful" or "workers stress" or "workers stressor" or "workers stressors" or "workers stresses" or "workers stressful" or "workers distress" or "workers distressing" or "workers distressful" or "workers' stress" or "workers' stressor" or "workers' stressors" or "workers' stresses" or "workers' stressful" or "workers' distress" or "workers' distressing" or "workers' distressful" or "workload stress" or "workload stressor" or "workload stressors" or "workload stresses" or "workload distress" or "working stress" or "working stressor" or "working stressors" or "working stresses" or "working stressful" or "working distress" or "working distressing" or "working distressful" or "workday stress" or "workday stressor" or "workday stressors" or "workday stresses" or "workday stressful" or "workday distress" or "workday distressing" or "workday distressful"* and still there are articles on for example worker's technostress and so on, or deviant words psystress, workaday stress, all of which will be found by again, the simple WoS phrase *"work* *stress*"* … (by the way you still have to use *"work related"* etc to get articles with either *work related* or *work-related*; the asterisk * doesn't find dashes (-) or spaces…)

Which search window in Pubmed?

You can simply use the starting page's search window, which uses 'all fields', which only yields somewhat irrelevant articles, or you can go to 'Advanced' and use only the first window, choosing the field 'title/abstract'

How to select species, age, sex etc.: Pubmed

WoS has limited options to select species, age, gender etc. If you need such a selection, Pubmed is better.

> Type in your search and 'SEARCH'
> 'Additional filters'
> 'SPECIES'
> 'Humans'
> fill in box in front of 'Humans'

NB: by selecting only humans you might exclude animals studies that also use humans. For a solution, see below: *How to use NOT without losing relevant articles: example with excluding animal studies*

How to get keywords highlighted in title/abstract in Pubmed

Make an account:

Upper right "sign in to NCBI"

Under left: "register for an NCBI account"

If you are logged in:

Upper right: "My NCBI"

Idem: "NCBI Site Preferences"

Common preferences: "Highlighting" (default on **Bold** but that is only for the title; you also want highlights in the abstract): change in something very easy to spot /scan: <mark>yellow</mark>

Revisited: Google Scholar - still more disadvantages of

- o Google Scholar searches in whole articles or title, not restricted to abstract
- o GS cannot handle long keyword profiles. GS doesn't seem to handle keyword string with more than 220 or so characters: far too few! It shortens your profile saying "Do you mean…?"
- o With 'fuzzy logic' in the video I mean that GS's search algorithms are opaque. With our method, you build your own very clear 'algorithm'.
- o The 'personalized results' from the video is also called your 'search engine bubble', different people get different results.
- o Because of the high number of findings, a fuzzy form of 'relevance'-sorting is used, partly based on number of citations. But you want to determine your own relevance for your review, and you want *everything* that is truly relevant for your question. Again, you have to find a search profile that yields a 'scannable' number of articles (besides there are multiple problems with citation listing, the most important being that citations not of equal quality or even relevance)
- o GS also yields 'quotes' (one of many examples of non-peer reviewed info)
- o With sorting on 'date' you get a different number than with sorting on 'relevance': why? That shouldn't be the case

Revisited: citation failures - scientists' use of public media

As an example of citation failures (video 4): Scientists often use public media for their information. See e.g. YouTube clip 'media coverage science often wrong'.docx:

https://m.youtube.com/watch?feature=youtu.be&v=0Rnq1NpHdmw

Fake peer review: predatory journals

Unfortunately, there is a growing number of 'journals' that present themselves as peer reviewed but are not serious journals, but everything between just commercial and outright scams. They are usely not included in databases like WoS, but it is nevertheless good to know where to check them:

https://en.wikipedia.org/wiki/Predatory_publishing

https://predatoryjournals.com/journals/

A brief note on other guidelines for literature searches

Of course there are. In fact it is easy to find numerous ones on Internet – too numerous to even start giving an overview. However, to my knowledge, NONE of them addresses the most important techniques to test out keywords and NONE is as rigorous on exact keyword profiles that are open and published as these videos and this file.

As to the latter, the rigorous publication of searches, a major step has been advanced by the PRISMA –statement about systematic reviews / meta-analysis in medicine (e.g. Moher et al., 2009; Shamseer et al., 2015), although the searches that are published are still often difficult to replicate exactly, partly because different interfaces to for example Medline are used. More importantly, it lacks instructions on searching important for psychology including no strategies of testing out keywords and nothing on finding keywords.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *Preferred Reporting Items for Systematic Reviews and Meta-Analyses:* The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA, the PRISMA-P Group. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015: elaboration and explanation. BMJ 2015.349:g7647. PMID: 25555855

Since settings and options of databases change constantly, we welcome any correction or additional tip!!!