Searching for systematic reviews: problems, pitfalls and pragmatism

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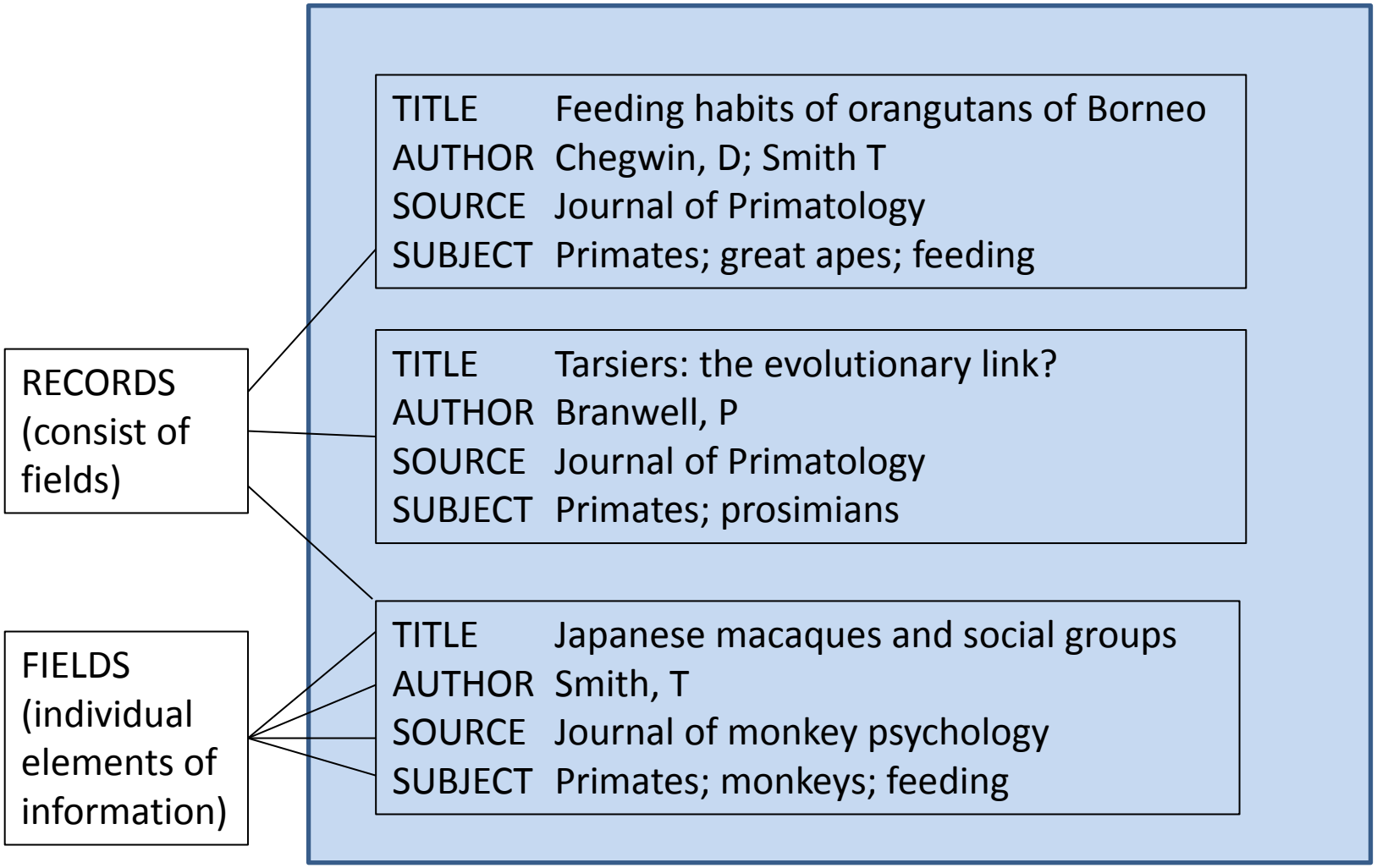
ANATOMY OF A DATABASE

Database: A collection of records



Searching: reasons to be fearful

- Reliance on technology
- Reliance on humans
- Publishers & publications
- A complicated process
- Transparency: your errors will be seen!

Reasons to be fearful part 1:

We seem to have encountered a problem

Computer says no

- Regular changes/upgrades to software
- Different interfaces
- Maximum number of downloads
- Maximum number of search lines within strategy
- Small number of records displayed
- Non-consistent field codes, fields, syntax etc.
- Automatic log outs
- Making assumptions – what is it doing?

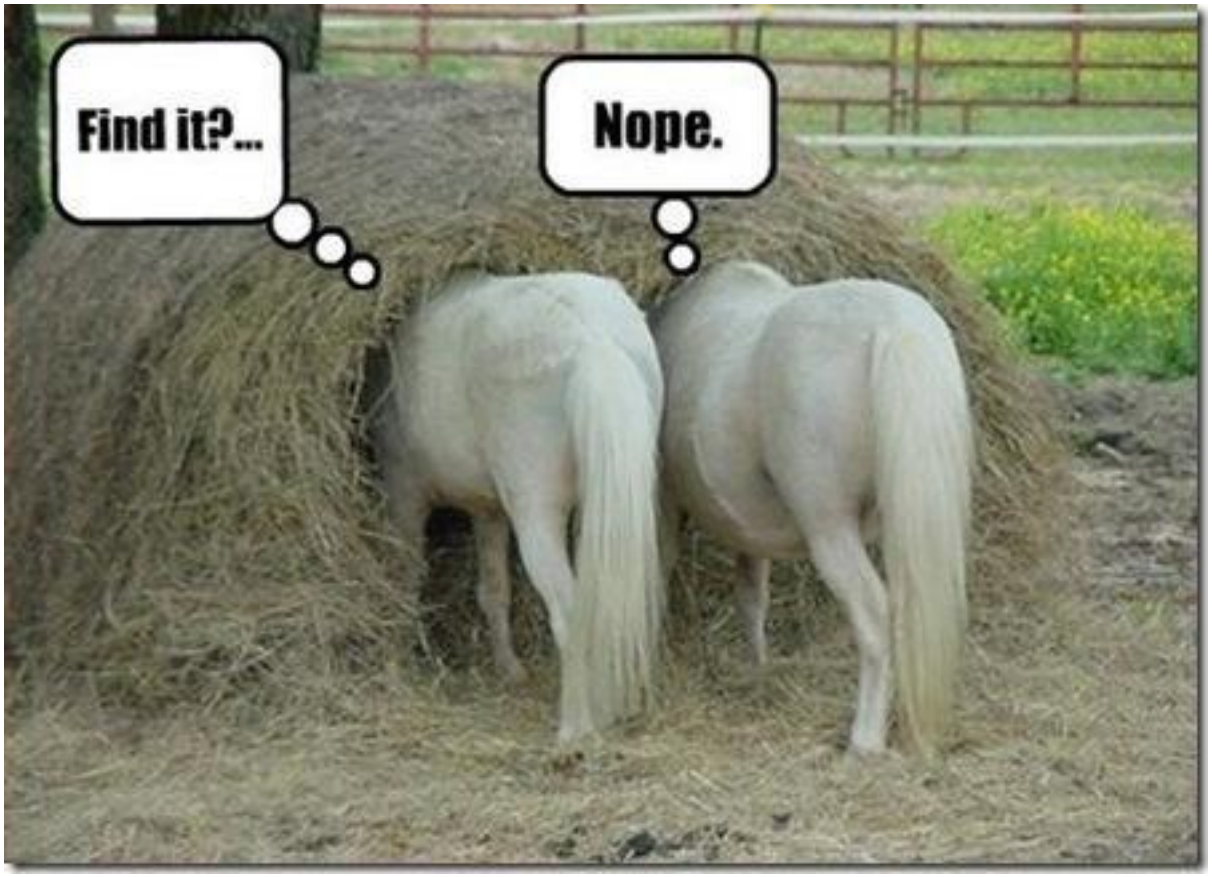
Human input

- Errors in manuscripts
- Errors transcribing to databases
- Misunderstanding of subject = poor indexing
- Inadequate instruction prior to search(e.g. inclusion/exclusion)

Publishers & publications

- Publishers in charge of databases: selective content (no, you can’t just search PubMed!)
- Software compatibility issues
- Function not in the hands of the users
- Systematic review searching not a priority

Reasons to be fearful: search process



Reasons to be fearful: search process

- Too many hits
- Not enough hits
- Missing records
- Numbers don’t add up
- Too many databases! Too much choice.
- When do you stop?

Be prepared!

- You have a broad understanding of how much is out there
- You have a protocol
- You have a PICO or similar
- You are familiar with the resources

Scoping searches – why??

- Has it been done before?
- How was it done?
- What was the result?

- Size of the evidence base

- Related work (background reading)

- Search terms

- Key papers

Scoping searches – some sources

Type of information	Resource	Website
GUIDELINES	TRIP	http://www.tripdatabase.com/
	NICE Evidence Search	http://www.evidence.nhs.uk/
SYSTEMATIC REVIEWS	Cochrane Library (CDSR and DARE)	http://www.thecochranelibrary.com
	TRIP	http://www.tripdatabase.com/
	Prospero	http://www.crd.york.ac.uk/PROSPERO/
PRIMARY RESEARCH (Including controlled trials)	Cochrane Library (CENTRAL)	http://www.thecochranelibrary.com
	PubMed	http://www.ncbi.nlm.nih.gov/pubmed
	MEDLINE	(via library)
OTHER RESEARCH	Embase	(via library)
	PsycINFO (if mental health/psychology)	(via library)
	CINAHL (if nursing)	(via library
TRIAL REGISTRIES	Current Controlled Trials	http://www.controlled-trials.com/

Master search strategy

- Use your PICO
- Identify synonyms
  - Team
  - Wikipedia!
  - Key references
- Use OvidSp if you can
  - Syntax
  - Save searches
  - Edit searches
  - Search strategy transfer

Search term table

Effectiveness of mealtime interventions for elderly residents in care homes on nutritional outcomes: A systematic review

Population (Group 1)	Population (Group 2)	Intervention (Group 3)	Comparator (Group 4)	Outcomes (Group 5)
"Old* people"	"Care adj2 home*"	Mealtime*		Weight
Elderly	"Residential home"	Meals		Nutrition*
Geriatric*	"Nursing home"	Dining		
Resident?	"Long term care"	Dinner		
		Breakfast		
		Lunch		

OR

AND

Example of a search strategy

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1946 to Present>

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1 meta-analysis.pt. (34938)
2 meta?analy*.ti,ab. (1149)
3 meta analy*.ti,ab. (44285)
4 (systematic adj3 review*).ti,ab. (38850)
5 (methodologic* adj3 review*).ti,ab. (1640)
6 (methodologic* adj3 overview*).ti,ab. (127)
7 review*.ti. (227326)
8 1 or 2 or 3 or 4 or 5 or 6 or 7 (282830)
9 meal*.ti,ab. (46556)
10 nutrition*.ti,ab. (157255)
11 food.ti,ab. (216127)
12 eating.ti,ab. (38571)
13 dining.ti,ab. (581)
14 feeding.ti,ab. (121833)
15 9 or 10 or 11 or 12 or 13 or 14 (496579)
16 elderly.ti,ab. (152718)
17 (old* adj (people or resident*)).ti,ab. (15408)
18 resident*.ti,ab. (98742)
19 16 or 17 or 18 (256123)
20 (care adj (setting* or home* or unit* or residence)).ti,ab. (89197)
21 (residential adj (care or unit* or home*)).ti,ab. (2373)
22 nursing home*.ti,ab. (19978)
23 20 or 21 or 22 (109793)
24 8 and 15 and 19 and 23 (27)

Filters

- What are they
- When to use them

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized.ab.
4. placebo.ab.
5. clinical trials as topic.sh.
6. randomly.ab.
7. trial.ti.
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. exp animals/ not humans.sh.
10. 8 not 9

Databases: avoiding the pitfalls

- Extra time
- On-line help
- Know your syntax, fields
  codes etc.
- Use field codes
- Set up accounts
- Save your search strategy
- Differences between databases

Your search: cover all bases!

- Subject headings AND free text
- Proofread
- Supplementary searches
  - forwards citation chasing
  - backwards citation chasing
  - hand-searching key journals
  - speak to experts

BUT

- Be realistic

When do you stop?

- Use gold standard of key references
- Aggressively seek potentially non-captured studies
- Look at results from similar reviews
- Search sources likely to yield greatest results (law of diminishing returns) and establish a cut-off point
- Theoretical saturation (for qualitative searching)

Adapted from Booth 2010

Reasons to be cheerful

- Focused plan
- Advance knowledge of databases and hosts
- Carefully structured search strategy approved by whole team
- Plenty of time allowed for search
- Know when to stop
- Be realistic
- EST search and review clinics

References

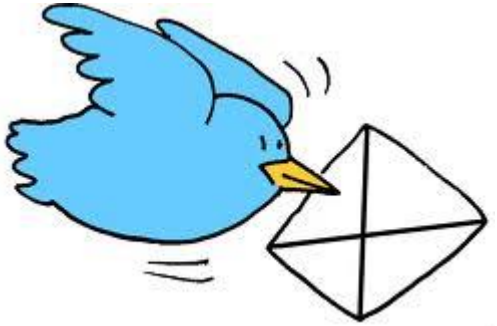
Booth A: **How much searching is enough? Comprehensive versus optimal retrieval for technology assessments.**

Int J Technol Assess Health Care 2010, **26**(4)**:**431-5.

Stevinson C, Lawlor D. **Searching multiple databases for systematic reviews: Added value or diminishing returns?**

Complement Ther Med. 2004;12:228-232.

Thank you for listening



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