Conducting a literature search for a MA

30 March 2020

Modern Research Methods

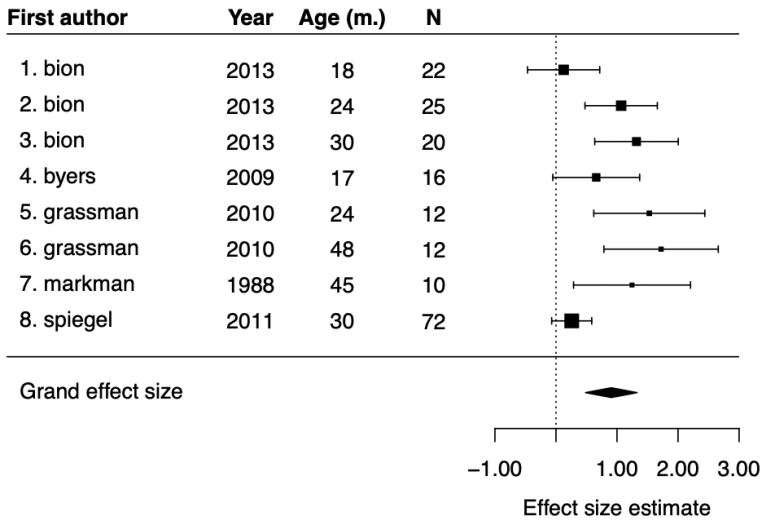
Final Project

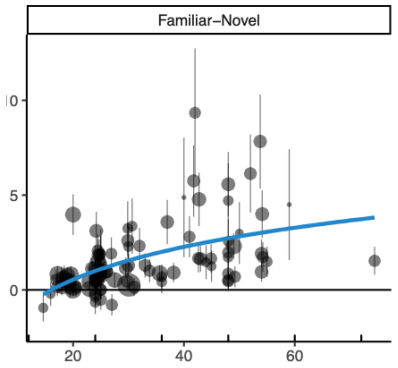
- Minimal Group Paradigm (Group 1): Jailyn, Sarah, Nicole H, V, Shruti, and Joyce (4:30 on Tuesday)
- Linda Problem (Group 2): Leo, Nicole C., Zoe, Fu, and Themi (5:30 on Tuesday)
- Syntactic Bootstrapping (Group 4): Anjie, Izzy, Alana, Maya (12:30 on Tuesday)

- If you don't have a meeting time yet, email me right after class.
- Meetings in my Zoom office hours (time EST, Pittsburgh Time)
- Before your meeting:
  1. Read seminal paper carefully
  2. Brainstorm inclusion/exclusion criteria (will discuss more today)
  3. Brainstorm search protocol (will discuss more today)

Conducting a Meta-analysis

Final product





1. Identify Topic
2. Conduct literature search
3. Code studies and calculate ES
4. Plot and analyze data
5. Report and discuss results

Reproducibility for meta-analyses

- Review: What is reproducibility?
- Why is it important?
- What might reproducibility mean for meta-analyses?

Why reproducibility meta-analysis?

- To evaluate quality of meta-analysis
  - Exhaustive representation of the state of the field (based on a systematic literature search)?
  - Quality of individual studies (peer-reviewed)?
- To evaluate relevance of meta-analysis (for your particular interest)
  - Current state of the field (when was literature search conducted)?
- To enable collaborative meta-analysis
  - Consistency across multiple contributors
- To be transparent to the field and yourself
  - Keep track of your own steps

Steps for a reproducible literature search

1. Define inclusion criteria
2. Define search protocol
3. Conduct search
4. Enter results into spreadsheet
   - scan titles/abstracts
   - make screening decision
   - if exclude, note reason why

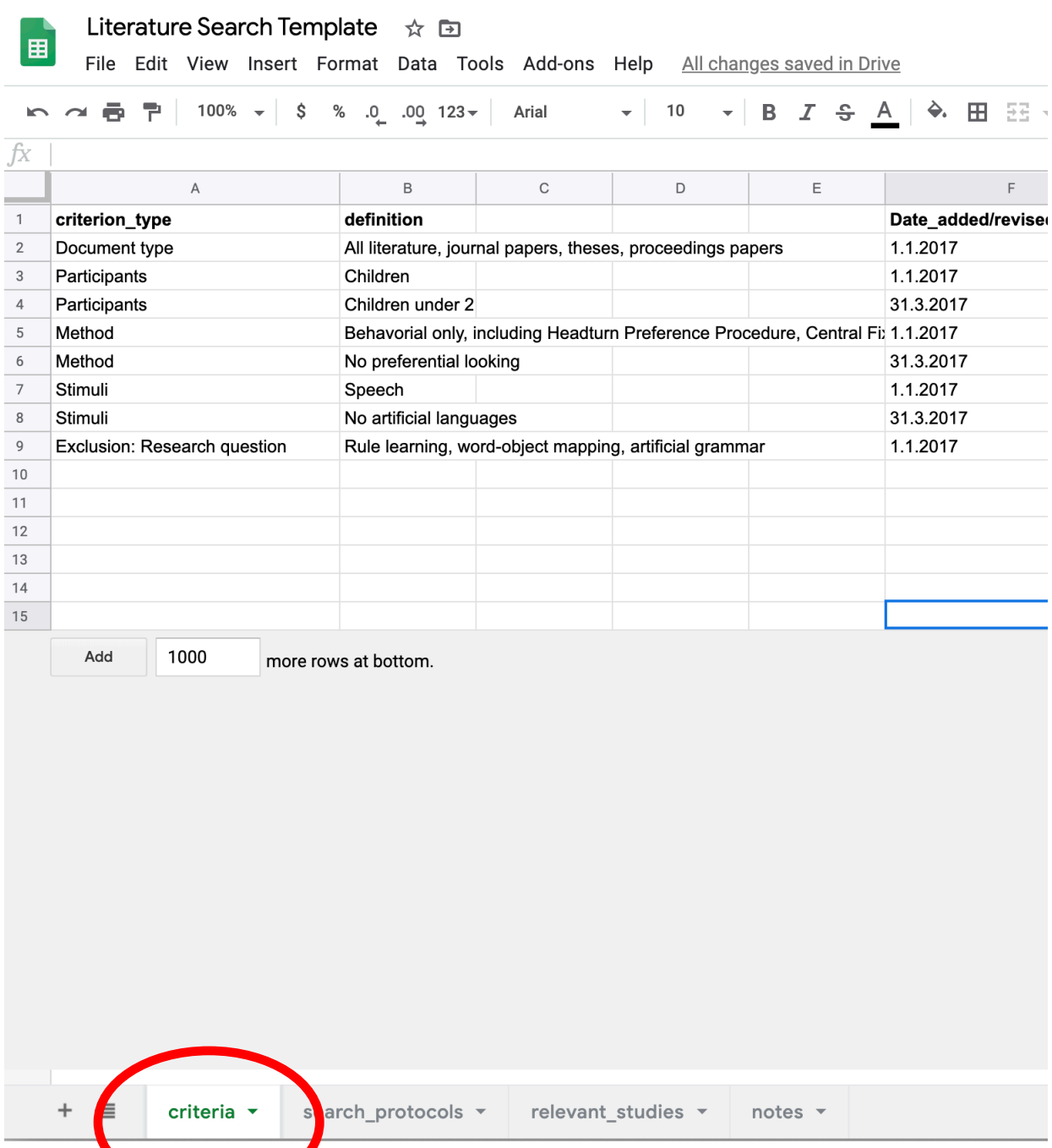
- To make your MAs reproducible, we're going to use the following template (linked on website)

1. Inclusion criteria

- What studies are you going to include in your MA?
- Every MA is unique
- These might change later on as you get to know your topic more

Criteria

- Document type
  - E.g. All literature, journal papers, theses, proceedings papers
- Participants
  - E.g. adults vs. children
- Method
  - E.g., Eye-tracking vs. pointing
- Stimuli
  - E.g., objects vs. pictures


Literature Search Template
File Edit View Insert Format Data Tools Add-ons Help
All changes saved in Drive
criterion_type
definition
Date_added/revise
Document type
All literature, journal papers, theses, proceedings papers
1.1.2017
Participants
Children
1.1.2017
Participants
Children under 2
31.3.2017
Method
Behavorial only, including Headturn Preference Procedure, Central Fi
1.1.2017
Method
No preferential looking
31.3.2017
Stimuli
Speech
1.1.2017
Stimuli
No artificial languages
31.3.2017
Exclusion: Research question
Rule learning, word-object mapping, artificial grammar
1.1.2017
Add
1000
more rows at bottom.
criteria
search_protocols
relevant_studies
notes

2. Search Protocols

- Database search
  - Google scholar
  - PubMed
  - …
- Scanning references
  - Recent paper: Who does it cite?
  - Seminal paper: Who cites it?
- Expert list
  - Direct request
  - Review paper (can be biased)

Search protocols for group projects

- Goal: find as many studies as possible that satisfy your search criteria
- Why is more better?
  - Just like when running participants in an experiments, the more data you have the less variance, and the more precise your estimate
  - A meta-analysis of 50 effect sizes is a lot more precise than a meta-analysis of 6 effect sizes
- Will vary by meta-analysis – some will have a lot more studies than others
- Protocols:
  1. Google scholar keyword search
  2. Who cites seminal paper
  3. Invite you to do others if have time/necessary

Literature Search Template

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

	A	B	C	D	E	F	G
1	**protocol_id**	**date**	**source**	**search_terms**	**results**	**results_scanned**	**notes**
2	1	3/31/2020	google scholar	infant word segmentation	over 10,000	first 100	
3	2	4/2/2020	google scholar	papers citing seminal paper	5,000	first 100	
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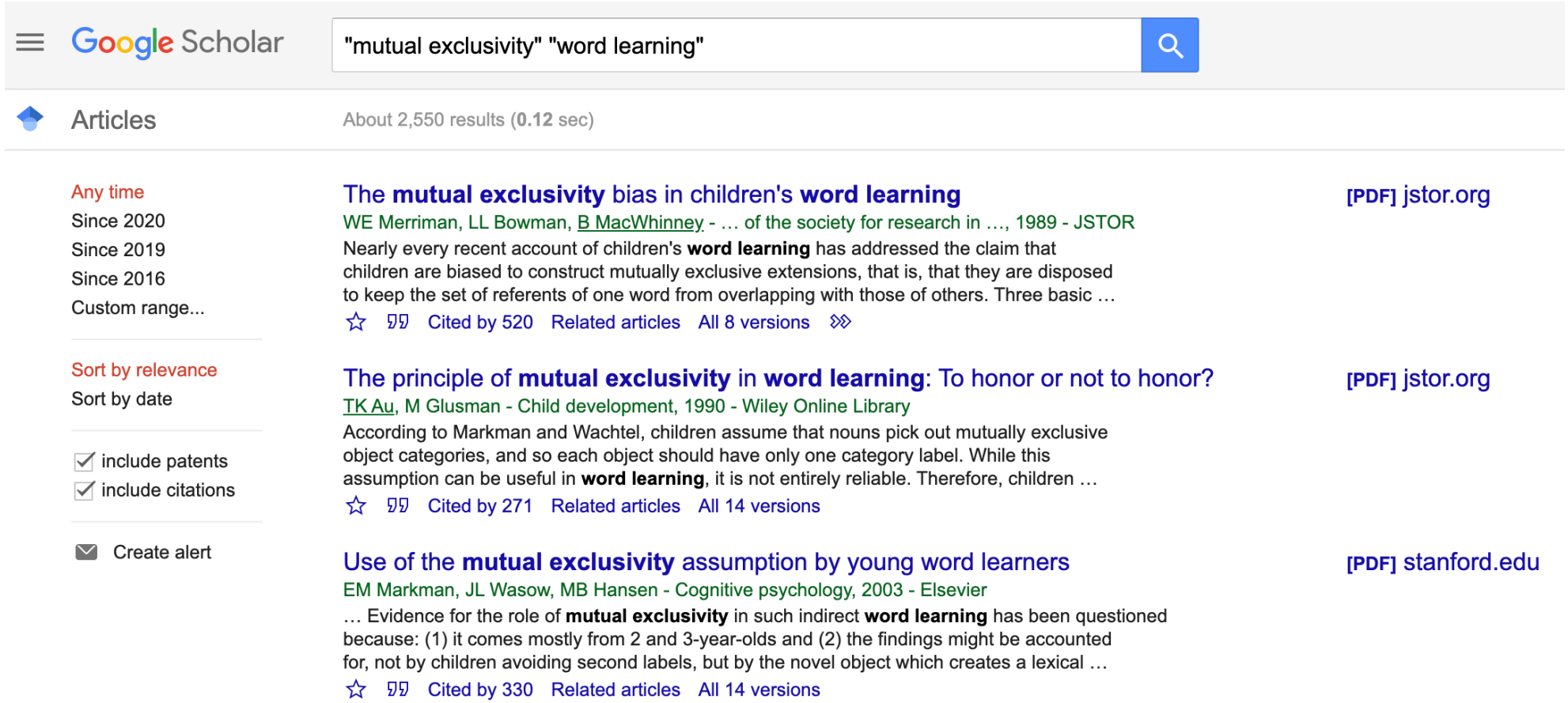
criteria search_protocols relevant_studies notes

3. Conduct search

In Google Scholar (https://scholar.google.com/)



4. Enter results into spreadsheet

- Record in spreadsheet
- Read title and abstract
- Make inclusion exclusion decision
- Reasons for exclusion:
  - not relevant
  - not empirical (no data)
  - doesn't satisfy inclusion criteria X

Literature Search Template

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

	A	B	C	D	E	F	G	H	I
1	**protocol_id**	**coder_name**	**date_added**	**google_scholar_page**	**unique_id**	**paper_citation_apa**	**link**	**screening_decision**	**exclusion_reason**
2	1	molly	3/30/2020	1	merriman1989	Merriman, W. E., Bowma	https://www.jstor.or	include	
3	1	molly	3/30/2020	1	smith2010	Smith, et al. (2010)	https://www.jstor.or	exclude	not empirical (review paper)
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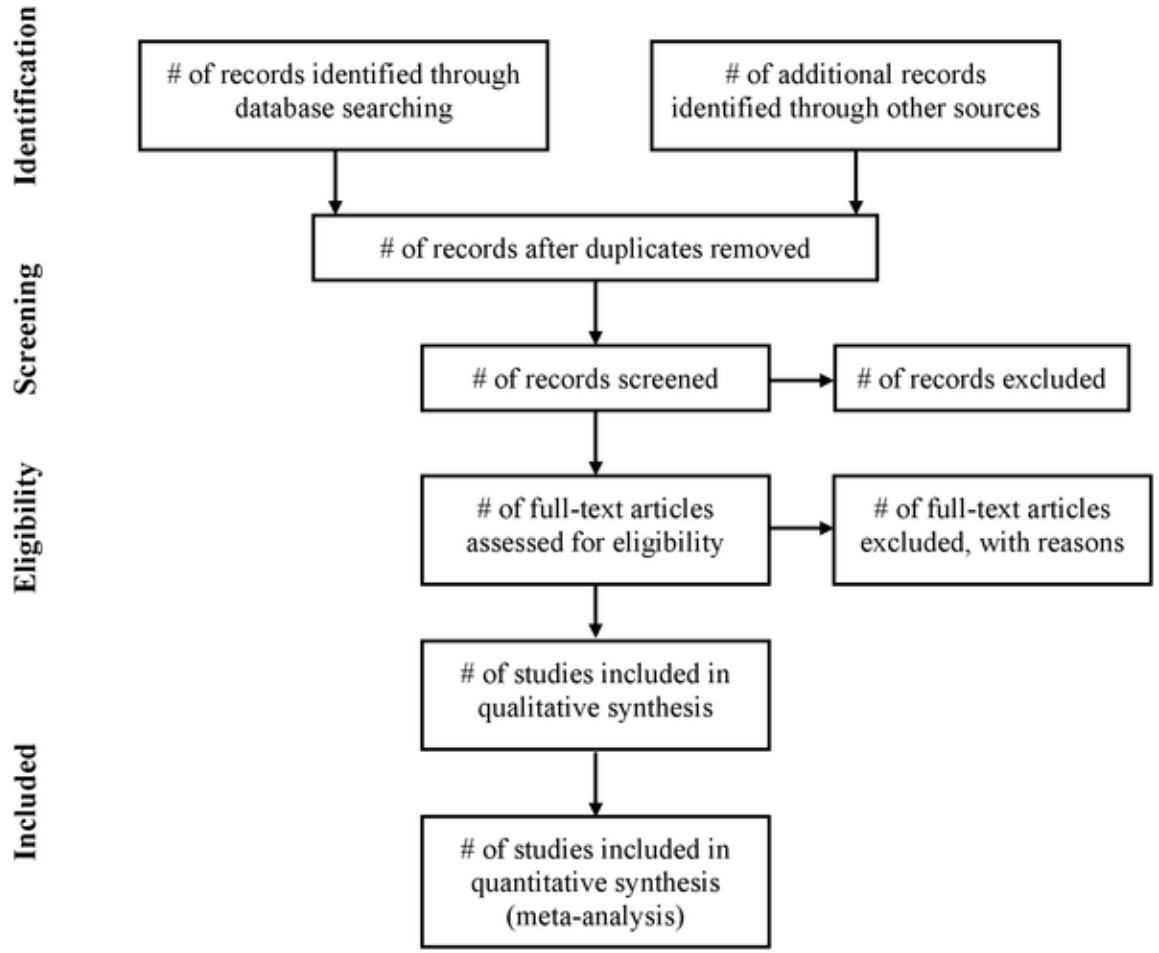
criteria search_protocols relevant_studies notes

Literature search variables

- protocol_id – id number of search protocol from “search protocols tab”
- coder_name – who entered this data?
- date_added – date
- google_scholar_page – what page of search results?
- unique_id – lastname+year of paper (e.g., smith2010), all lowercase, distinguish duplicates with a letter (e.g. smith2010a)
- paper_citation_apa - APA paper citation (copy from google scholar)
- link – link to title/abstract from google scholar
- screening decision – include/exclude
- exclusion_reason – if exclude, why?
    - not relevant
    - not empirical (no data)
    - doesn't satisfy inclusion criteria X

The PRISMA statement



Next Time: Start your own literature searches

Steps for a reproducible literature search

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   - if exclude, note reason why