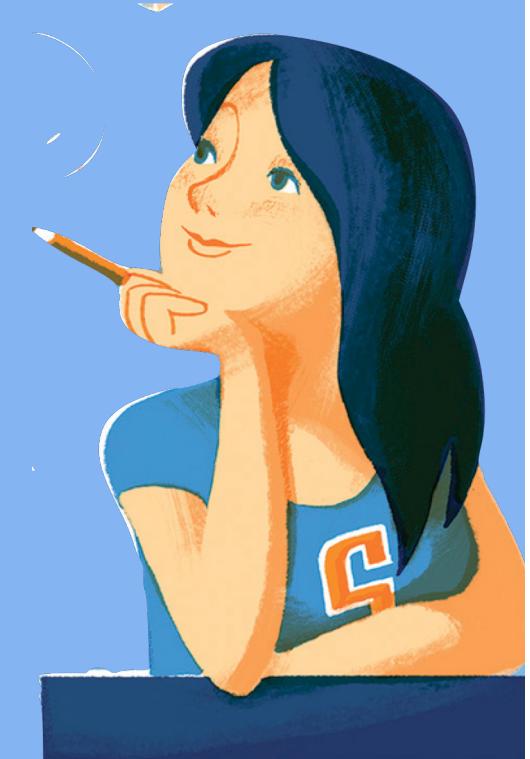




# How to write a good thesis



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# What difficulties/questions do you encounter when writing?

# Today

- › What is the difference between good and bad articles?
- › How to write a good thesis?
- › How do you set yourself up for success?
- › How to revise your writing?

# Good vs. bad articles



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# What is the difference between good and bad articles?

- › Structure     What do they both do in the same way? What do they do differently?  
Which structure does work better for you as a reader? Why?
- › Content     For which article would you find it easier to formulate the "take-home message" (of each section) in your own words?
- › Language    What made the articles easy or hard to read?  
What made the line of argumentation in one article easier to follow than in the other one? (or what made it good/ bad in both articles?)

# How to write a good thesis?



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# Is there a difference between a thesis and an academic article?

|                   |  |                                 |
|-------------------|--|---------------------------------|
| > Goal            | Communicate your research <b>&amp; show that you can do proper science</b> | Communicate your research       |
| > Target audience | Your supervisor(s), future bachelor students, other scientists             | Other scientists (in the field) |
| > Length          | 10-15 pages (+ appendices)   | Depends on the journal          |
| > Formatting      | See template   | Depends on the journal          |

# See your thesis as (extended) academic article

## > What a thesis should **not be** :

- A progress report in which you tell what you did
- A report that simply summaries your research and findings

## > What a thesis **should be**:

- It should convey a message that adds something to the scientific debate
- It needs an argumentation structure that aims to convince the reader about this message

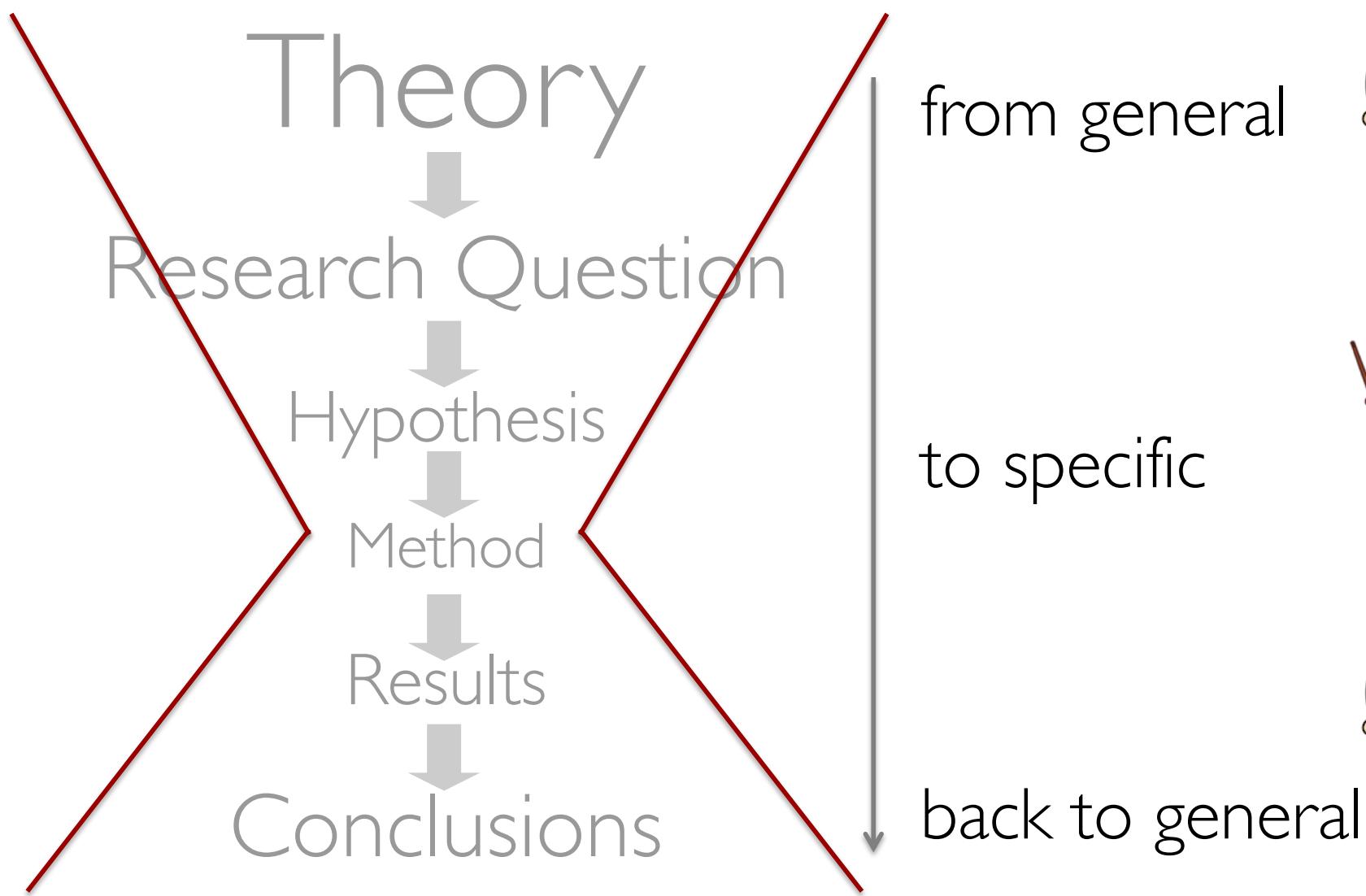
# How to write good academic style?

- › Professional, not colloquial
  - . But do not make it more complicated than it is
- › Make sure the reader knows what you are talking about
  - . Explain abbreviations and terminology
  - . Only refer to things that were already explained
- › Passive or active voice:
  - . Can I use I, you, we?
- › APA recommends “they” as gender-neutral pronoun

# Language

- Plain and straightforward
  - (avoid literary devices, jokes, and the use of synonyms)
- Clear and concise (only say what needs to be said; but keep in mind that redundancy can be helpful)
- Scientific - base your arguments on empirical evidence (personal narratives or opinions are rarely useful)
- Draw connections (do not assume the reader can see those connections without your help)

Your story should be  
**consistent** and “hourglass-shaped”



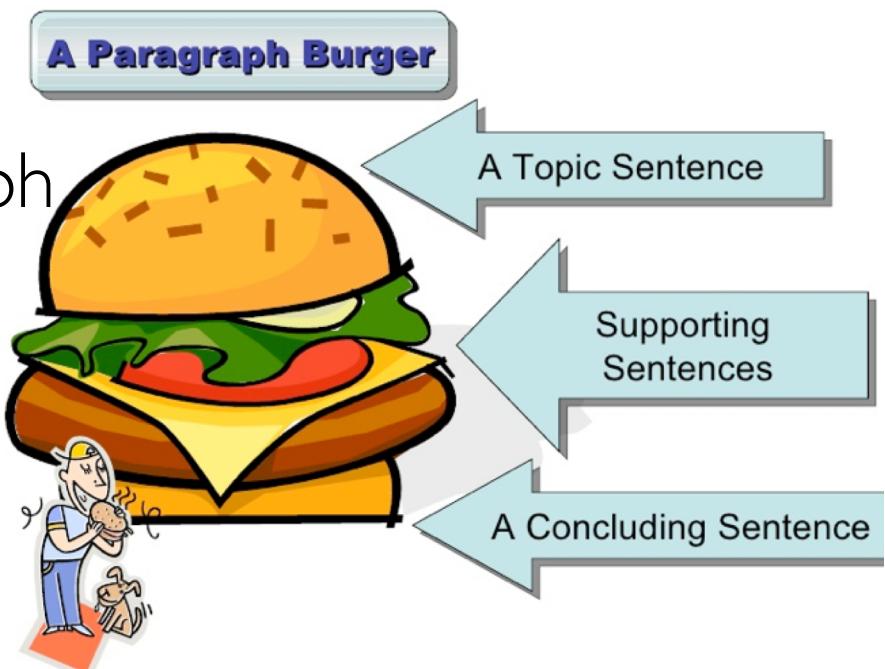
# Verb tense

- When is it happening?
  - Literature: past tense (The researchers found...) or present perfect (The researchers have shown...).
  - Methods: past tense
    - it has already happened at the point the reader reads it
  - Results: past tense
  - Implications of the results and conclusions: present tense

# Plan ahead!

- What do you want to say?
- In what order?
  - For the paper as a whole
  - For each section
  - For each paragraph
    - One “topic” per paragraph

**Tip:**  
Start by  
making  
outlines and  
lists



# For each section...

First, answer these questions:

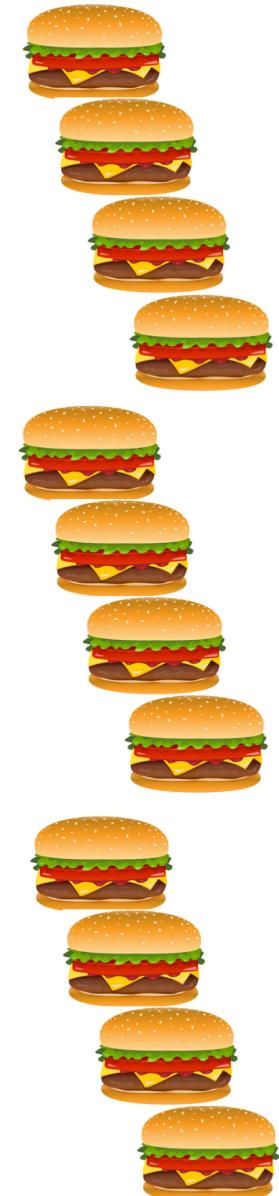
- › What is the main message of this section?  
What should the reader get out of it?
- › What is the storyline / line of argumentation I will use?
- › How does this section fit in the bigger thesis?

Second, make an outline (list of bullet points)

- Which points will I make? In which order?
- Is it useful to use sub-sections?

Third, only now start to actually write

→ Ideally, each bullet point will become one paragraph



# Which sections should your thesis have?

- > Abstract
- > Introduction
- > System/Method
- > Results
- > Conclusion and discussion
- > References
- > Appendixes?
- > Acknowledgements?

Think about how to structure your text!

Use sub-sections where useful

The structure should support your line of argumentation

# Introduction

- › Overview of the RQ and link to existing work
  - What is it that you want to investigate?
  - Why is this important / relevant?
  - How will you investigate it?

Especially for long(er) introductions:

- Present the RQ and motivation early on
  - Then dive deeper into the scientific background
- 
- You are not writing a history book! Everything you present, should be linked to your argumentation about the RQ!
  - *You might need to rewrite (part of) your introduction later on (in the light of your results or other new insights)*

# System/Method

- › **Reproducible** description of the system or methods
  - Behavioral research: Participants, Materials, Procedure, Design
  - Systems/Models:
    - Overview of the system/model
    - Description of its components
    - Relevant algorithms & parameter settings
    - Explanation and justification of choices that you made
    - (Measures that will be used to evaluate the system)

# System/Method

- › What level of detail should you include?
  - Everything that someone would need to replicate/repeat the study
  - Explain *what* happens, but not exactly *how* this was done  
(usually: no source code)
- *This section should make clear what you are doing to test your RQ (and why you do it this way)*
- *Usually the easiest section to write (but not easy)*

# Results

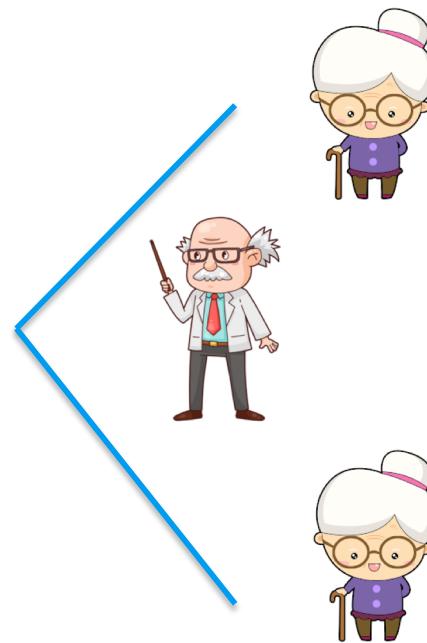
- › The results that are (in)directly related to your RQ
  - › Focus on: Results that answer your RQ
  - › Possibly: manipulation check
  - › Dive deeper if:
    - results are unclear
    - results raise additional questions
    - explorative analyses in more explorative projects
  - Think about *what* to present:  
Not everything you did, but everything you need to argue your point
  - Think about *how* to present it:  
As clear und unbiased as possible
- *For next week: Bring questions about data analysis and presentation of results*

# Conclusion and discussion

- › Interpretation of the results in relation to the RQ
- › Summary and conclusion with respect to the RQ
- › Discussion of the value and impact of your findings
  - bigger picture – what did we learn?
- › Be honest about potential problems
  - Ideally you can argue that they were actually not a problem
- › Talk about where the research should/could go from here
  - = what would be interesting future research based on your findings

The introduction and discussion sections must form a comprehensible summary of the thesis

- > Introduction
- > System/Method
- > Results
- > Conclusion and discussion



## Abstract (max. 250 words)

- › It should let the reader make an informed decision on whether the article/thesis is worth their time/money
- › It is NOT a cliff hanger!

Briefly summarizes:

- Objective
- Background
- Methods
- Main results
- Conclusion

*→ Write 1-2 sentences for each of those points*

**Tip: Write it  
in the end!**

Numbers? References?

*→ Only if they are really essential*



# References - FAQs

# How many references do I need?

- › As many as necessary
  - For the intro/discussion:  
When you present other people's ideas, systems, or results
  - For the methods:  
To motivate method and design choices
  - For the results:  
When you use ways to analyze your data which are not completely standard

# Do I need to have read all articles that I cite?

- › Ideally yes
- › But, probably not realistic in all cases
  - Make sure you have checked that it really says what you claim!
- › If you did not read an original article, be clear about it
  - E.g.: blabla (Schwartz et al. 1997, as cited in Berrah & Laboissière 1999)

# Which formatting style should I use for the thesis?

- We recommend APA style (current version: APA 7)
  - Check with your supervisor
    - If they prefer another style, that is okay as well
- Whatever style you use, use it consistently

# Do I need to cite a source in each sentence that refers to that source?

- Not necessarily
- It needs to be clear what the reference refers to
- Rule of thumb: once per paragraph

# When do I need quotation marks?

- Rule of thumb: if you copy more than 3 words in a row

*Miller (1956) doubted whether there is anything  
“deep and profound behind all these sevens” (p. 3).*



don't forget the page number

# The layout

- › Use the template!
- › It specifies for example:
  - Headings
  - Fonts
  - Correct use of dashes
  - How to present numbers ( $1/2 = 1.5$ , not 1,5)
  - Formulae
  - (Pseudo) code
  - Figures and tables
  - ...

# Next week

- › Analyzing and presenting your results
- › Assignment 6: Your “ideal results” graph
- › Bring any questions you might have on
  - Data analysis and figures
  - LaTex → Joost Doornkamp will be there to answer these

Any questions?



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