

COST action SAREP
*Methods and
measures of input
and second
language
proficiency/
development.
Lund 6–7 April 2017*

Experimental design Workshop 6 April 2017

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Topic of today

The workshop discusses how planning before, during and after an intervention can enhance the outcome of the investigation. It further relates experimental design to areas such as research questions, selection of participants, pre- and post tests, and interpretation of results.



The Research Question

What do you want to know?



The Research Question

What do you want to know?

And how can you find it out?



The Research Question

What do you want to know?

And how can you find it out?

➤ The experimental design



What do we want to study when approaching the "Study abroad"-field?

Some suggestions

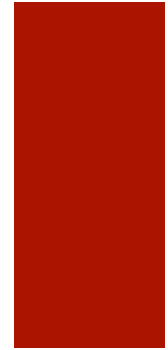
- To learn more about linguistic development
- To learn more about what linguistic abilities that are developed during a stay abroad (e.g., what linguistic skills are sensitive to this type of intervention)
- To learn more about how initial linguistic skills matters for what you can learn when you are abroad
- To evaluate different exchange programs (from the perspective of how much X changes if one takes part in the program)
- To evaluate different methods of researching the outcome of exchange programs.



What (linguistic) skills is worth studying?

Some suggestions

- Grammatical development?
- Lexical development?
- Oral proficiency?
- Written proficiency?
- Cultural knowledge?
- Pragmatic knowledge?
- Communicative skills?
- And what aspects?
 - How fluent?
 - How accurate?
 - How complex?
- In what contexts?



What (linguistic) skills is worth studying?

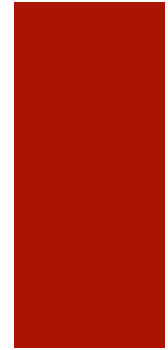
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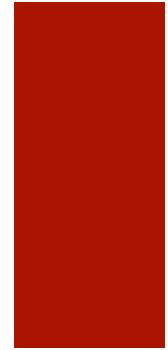
What suggestions from previous research?

What and why would you evaluate the stay abroad?



- Investigate differences between programs:
 - Time abroad,
 - The activities engaged in (studies, work, social life, living with native speakers, living alone)
 - The linguistic training you get through schools, teaching, social life, living conditions, etc.
- Differences between specific places, or countries, or universities, or languages...
- Cultural differences
 - social life,
 - work life,
 - studies,
 - ...

What and why would you evaluate the stay abroad?



- Investigate differences between programs:
 - Time abroad,
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- Cultural differences
 - social life,
 - work life,
 - studies,
 - ...



What suggestions from previous research?

So – what is YOUR research question?





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<p><u>MURPHY'S LAW</u></p> <p>"EVERYTHING THAT CAN GO WRONG, WILL GO WRONG."</p>	<p><u>MURPHY'S RESEARCH LAW</u></p> <p>"EVERYTHING THAT CAN GO WRONG, WILL GO WRONG UNLESS IT'S YOUR HYPOTHESIS THAT'S ACTUALLY WRONG, IN WHICH CASE THERE'S NOTHING WRONG WITH YOUR DATA, YOU JUST HAVE TO START ALL OVER AGAIN."</p>
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How will you answer the question?

- What kind of data would be the best way to answer your question?



How will you answer the question?

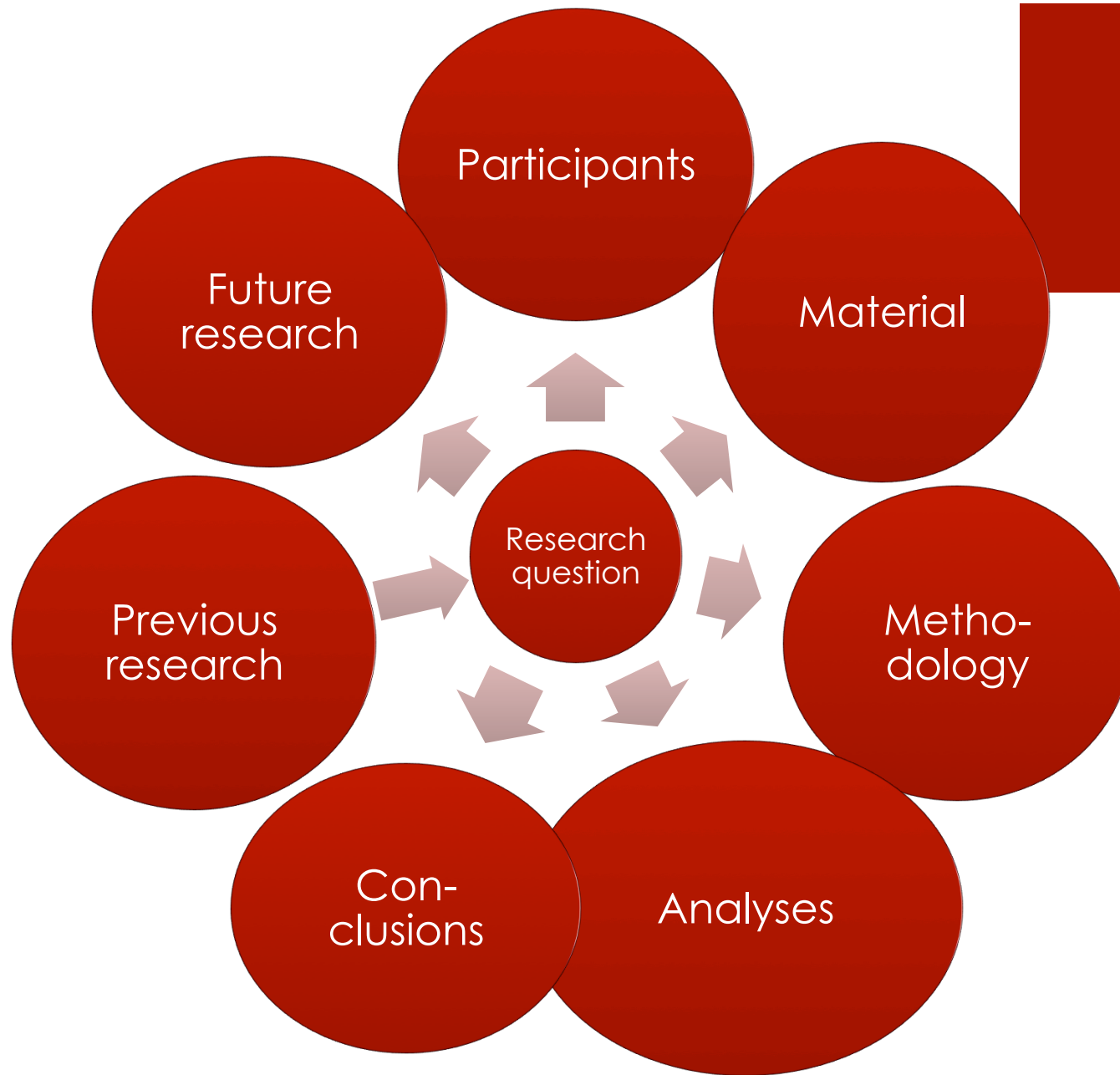
- What kind of data would be the best way to answer your question?
 - What kind of data do you have access to?
- or
- What kind of data could you "easily" obtain?



How will you answer the question?

- What kind of data would be the best option to answer your question?
- What kind of **method** would be best to use to collect the data?
- What **analyses** of the data would best suit your purposes?
- What **tools** are available for collecting and analysing the data?





Participants and material

- To start "from the other direction" – you have a material.
- What questions can the data answer?



So – what is YOUR data?





to a memo.

comics



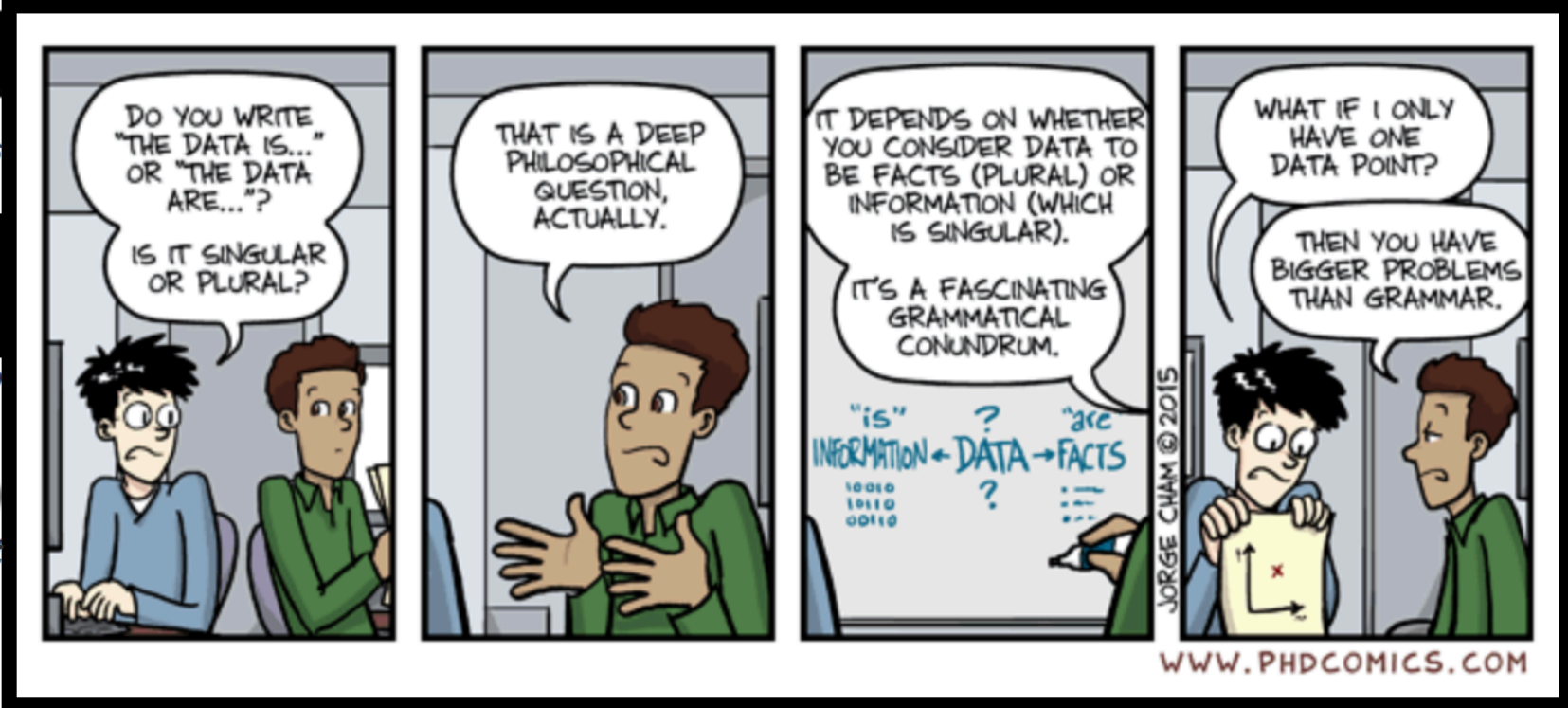
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Methodology:

How to investigate your data with your research questions?

What methods are available to you?



- **Participants** What participants are available to you? What possibilities and limitations do their background, their linguistic skills, their stay abroad etc. provide.
 - Formulate a research question that can be answered by the participants available!
- **Data collection.** What methods are available to you? (ERP is nice, but costly in time and money...)
 - Use a method that can answer your question (or re-formulate the question)!
- **Analyses** What to look at: preterite forms, number of correct sentences, communicative skills...
 - go to previous research and see what can be a good feature to look at considering the circumstances of your data, data collection, participants, exchange program etc.
- **Tools** Things to aid the collection and analyses: computer tools, schemas for coding, established methodology (e.g., this is how lexical density is counted")
...
 - go to previous research and do not invent the wheel again unless you have to.

Methodology:

Some methods will be presented during these workshop days

- **Corpus tools** for designing, using and analyzing spoken and written (and multimodal) data
- **Keystroke logging** as a tool for investigating linguistic processes during writing
- **Audio & video recordings** for high quality data to study oral and multimodal processes.

Other methods can include (among others)

- (Standardized) tests for measuring linguistic proficiency
- Self-reporting methods such as interviews and questionnaires, think aloud and retrospective interviews
- Continuous reporting on activities



What did others do?

- What **methods** has previous research used?
- How can you use this previous research?
- Do you want to (and can you) do in the same way?
 - What do you **want** to change?
 - What do you **need** to change?
- Or are there possible problems with previous designs that you can **remedy** in your study?
- What **results** has previous research found?
- How can you use this to
 - a. formulate your research question?
 - b. design your own study?
- What **data** has previous research used?
- Is your data similar/equal?
 - If not – could and should you ask the same type of questions and use the same type of methods?
- Is your data different in any way? How can you use this to
 - Comment and problematize previous research?
 - Make a contribution to the field?



to a friend!

comics

comic



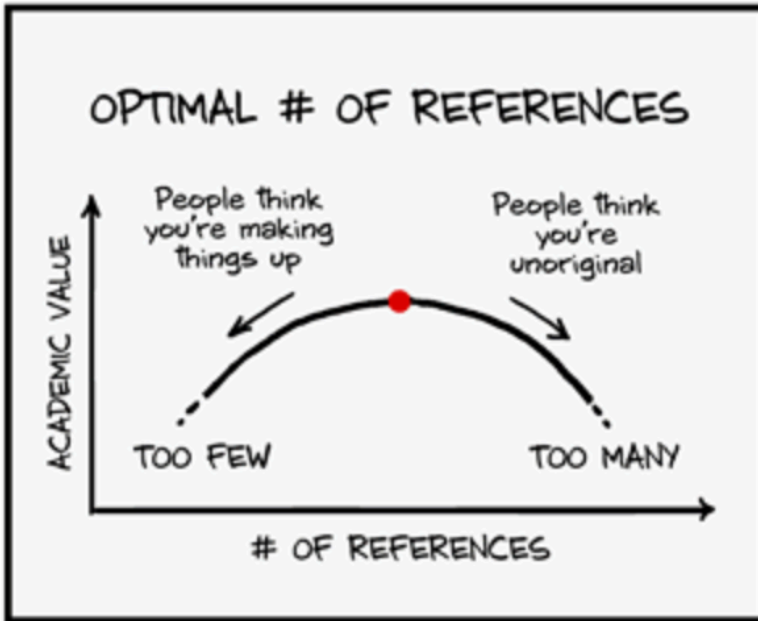
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So – what is YOUR
methodology?



Experimental design: Best practice

- Want to look at change?
- Need to be able to measure things before (**pre**) intervention (= stay abroad) and after (**post**).
- Need to look at things that change caused by the stay abroad-experience (not to general development)
- Linguistic changes: need to look at linguistic changes that are related to the stay abroad-experience, and what people do there
- Need to look at what people do during their stay abroad and relate it to changes.



Pre-test and post-test

- To evaluate proficiency before and to evaluate after
- What parameters can be evaluated?
 - based on previous research: what have others calculated?
- What has been found to be parameters that can show progress?
 - What can be a good thing to look at?



Validity

- To test the same things before and after
 - To use a **baseline** before (i.e. making more than one test over a period of time)
 - To use control group (at home-group) and measure their development in the same way.
- To relate it to activities during the stay abroad-visit
 - Important for understanding WHAT in the stay abroad-experience that causes change/no change (because if we want change to appear, we should boost this).
- To control and evaluate that only things that can be compared will be compared.



Quantitative research and statistics

- If we ask quantitative questions, we need to construct a research design that allows us to use quantitative methods.
 - Number of participants
 - Number of variables.
 - Correlations?
 - Causal relationship?



So – how can YOU use pre-
and post tests?



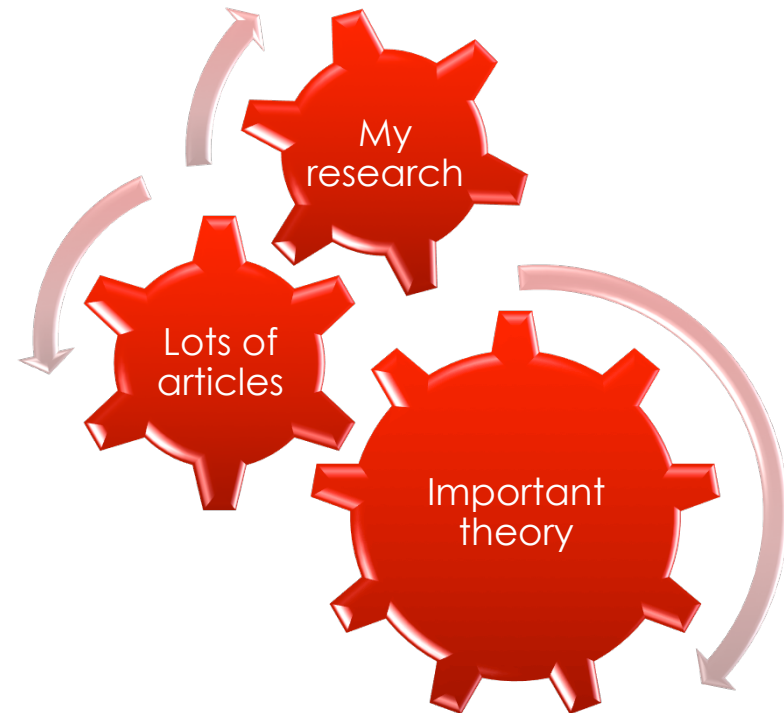
Conclusions?

- Did you answer your research question?
- Did you connect your research to previous research?
- Was your outcome comparable? If not – what is the reason for the differences? Were they perhaps expected due to differences in data, method, scope, or analyses?
- Did you go too far in your conclusions?
- Did you make conclusions that your method and data cannot answer? (Honest answer!)
- Instead of formulating new questions for the future...



The contribution to the field

- What role does your research play?
- How is it closing the gap in the research of your field?
- How does it relate to previous research?
- What does it say about future research?



So – what is YOUR
contribution to the field?



And now you can go home
with a finished research
proposal!



- Maybe just adding some references...

