How to Read Methods Sections of ERP Papers

Mariella Paul
paulm@cbs.mpg.de

MPI for Human Cognitive and Brain Sciences
Berlin School of Mind and Brain

Literature

De Neys et al. (2010) *Proceedings of the Annual Meeting of the Cognitive Science Society*
https://escholarship.org/uc/item/1b8261kk

Mueller et al. (2009) *BMC neuroscience* https://doi.org/10.1186/1471-2202-10-89

Plöchl et al. (2012) *Front. Hum. Neurosci.* https://doi.org/10.3389/fnhum.2012.00278

Task: choose one of these papers and answer the questions on the next slides

Participants

- how many participants does your EEG study have?
- what are the exclusion criteria for participants?

EEG setup

- how many electrodes were used?
- what was the online reference?
- how was the EOG recorded?
- how many trials were recorded?

Preprocessing

- how was the data preprocessed? Consider
    - offline re-referencing
    - filters
    - time window
    - artifact rejection and correction
    - baseline period and correction
- if your study analyses more than just ERPs, focus on the ERP analysis

Statistical analysis

- how many participants / trials were entered in the analysis?
- what kind of statistical analysis was performed?
- is your study within- or between-subjects?
- (how) did the authors deal with the multiple comparisons problem?

Reproducibility

- given the description in the methods section, would you be able to reproduce the experiment and analysis?