Statistics for Linguists
08 July 2022

10:00	Workshop introduction
10:15	Loading and exploring datasets
10:45	Data transformation and coding
11:15	Practical exercise
12:15	Review of practical
12:30 - 13:30	LUNCH BREAK
13:30	lmer and glmer
14:30	Post-hoc analysis and model visualization
15:00	Practical exercise
16:00	Review of practical
16:15	Model building
17:00	End of workshop

Statistics for Linguists

Practical exercise 2

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Practical exercise 2

Use the same dataset as before (*psycholinguistics_data.csv*), including the changes you made in practical exercise 1

1. Make a new variable that is the centered sequential trial order
2. Build an lmer with capitalization and determiner as fixed effects. Use a random intercept for participants. Complexify the random effect structure of the model by including a random intercepts and slopes for item
3. Change the reference levels of the fixed effects and run another lmer. Did the results change? If so, how?

Practical exercise 2

4. For each random term you included, print estimates for each the participant (for random effects associated with participants) and item (for random effects associated with item)
5. Try to find out whether there is an effect of sequential trial order. Did participants become faster or slower as time passed in the experiment?
6. Run post-hoc analyses on the effects of capitalization and determiner
7. Calculate the effect size of all the fixed effects (capitalization, determiner, and sequential trial order) with Cohen's d. How strong are they?

Practical exercise 2

8. Visualize the model output. Which estimates do not cross zero? Why do you think the estimate for sequential trial is so close to zero?
9. Create a table of the model output with confidence intervals

10. *This assignment is extra, if you have time (and energy) left*
    - Consider one of your studies (either already conducted or planned):
    - List all independent variables
    - List all random variables
    - List all random intercepts and slopes allowed by your design (the issue of whether this maximal random effect structure is supported by the data will be discussed in the subsequent session)
    - If you already have a dataset, you can start to code your factors and build your model