

Workshop

Analyzing individual variability



October 5-6-7, 2026



10:00-16:00



IG 251 & via Zoom



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For registration:
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Objective

This workshop provides a hands-on tutorial on the analysis of individual variability in linguistic and psycholinguistic experiments using Bayesian hierarchical models. At the end of the workshop, participants will have acquired a comprehensive understanding of how different sources of variability can be modelled and analysed, and they should be able to apply these methods to their own datasets.

Description

Data from linguistic and psycholinguistic studies often display substantial individual-level variability, as participants may differ widely in their overall performance and in their responses to experimental manipulations. Hierarchical models provide a principled way of estimating such between-participant variability, while distinguishing it from within-participant variation. In a Bayesian framework, hierarchical models can also provide individual-level predictions together with their uncertainty, making them particularly well suited to the investigation of individual differences.

Topics covered during the first two days of the workshop include the interpretation of random effects; individual-level predictions; and model-based approaches to assessing whether observed individual differences can be measured reliably. The workshop will also introduce model extensions in which variability may differ across groups or experimental conditions, a common feature of linguistic and psycholinguistic data but one that is rarely modelled explicitly in standard analyses.

On the third day, participants will apply Bayesian hierarchical models to their own datasets and research questions. Throughout the workshop, the `brms` R package will be used.

Methodology

The workshop will be mainly practical and interactive, combining a presentation of the main principles of Bayesian hierarchical modelling with hands-on exercises to be taken individually and in groups. Resources include presentation slides, datasets, exercises with annotated solutions, and a reading list. On the third day, participants will apply these methods to their own data or to a dataset provided by the instructor.

Conditions

We will use R for all analyses, so prior experience with R is necessary. Participants should also have a good grounding in regression modelling and some experience with mixed-effects models and Bayesian analysis.

The language of the workshop is English. The number of participants is restricted to **20**. Priority will be given to the members of GRADE Center Language and SFB 1629 NegLab. The final date of registration is **September 15, 2026**.

Please note that cancellations can be made up to one week before the workshop by sending an informative email. Failure to show up without prior notice will result in a ban from one future GRADE Center Language workshop.