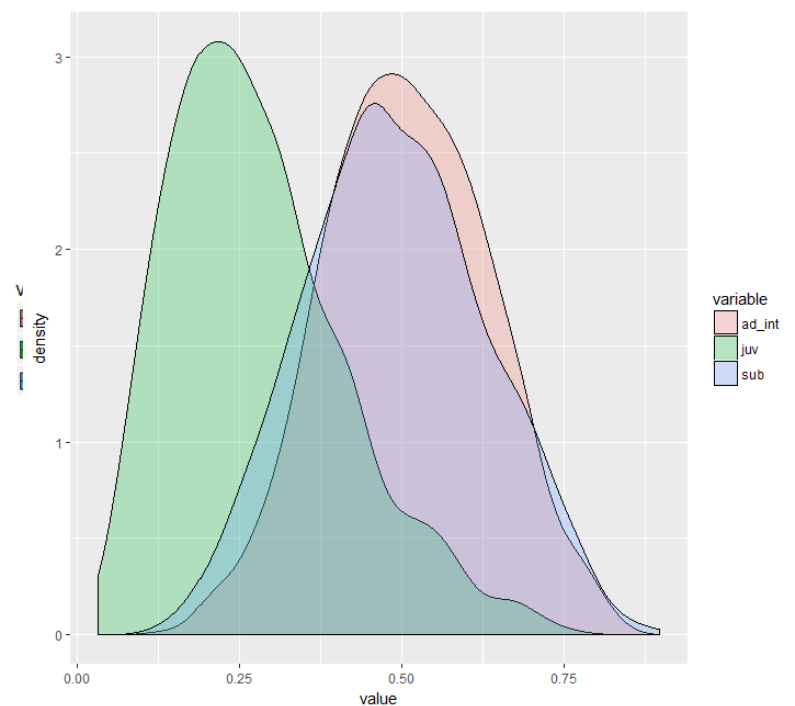
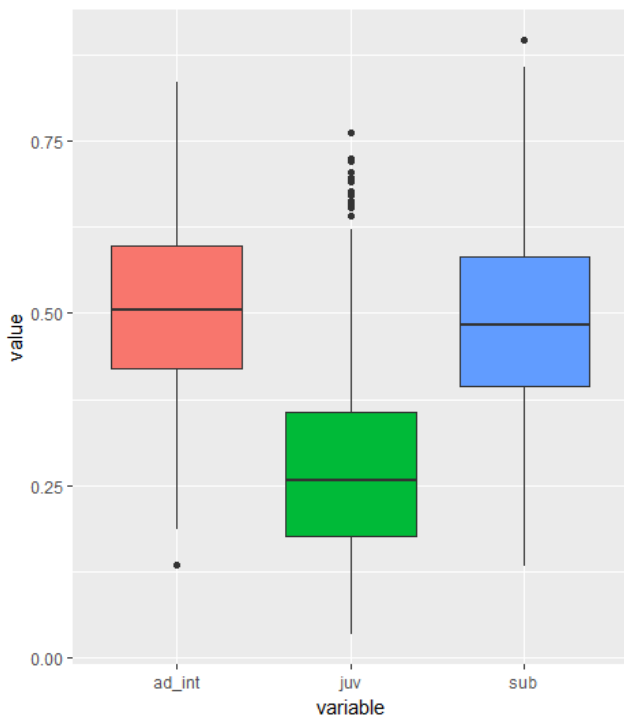




Workshop: Statistical Analysis in R 22.2. – 23.2.2018

Vienna Doctoral School in Cognition, Behaviour and Neuroscience



Workshop: Statistical Analysis in R

LECTURERS:

Dr. Richard Schuster (Carleton University and University of Northern British Columbia)

Dr. Matthias-Claudio Loretto (Department of Cognitive Biology, University of Vienna)

This 2-day workshop **will introduce you to the statistical program R**, a freely available language and environment which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc.

You can register for either one or both days, where the first day will be starting with an introduction to R and then we introduce the key components of (generalized) linear models. In the afternoon we will be fitting our first models and produce graphs and visualizations. Day two is more advanced and will build on what we have done on day one. We will start with mixed-effects models (i.e. random effects) and generalized linear models (i.e. non-normal error distributions). In the afternoon we will move on to generalized linear mixed-effects models and introduce you to the information theoretic approach, as well as model validation and predictions.

In **preparation for the workshop** please work your way through an online course on R, so you have some basic understanding of R and we can delve right into the workshop when we meet. Here the link to the free online course we would like you to take (estimated course length 2-3 hours): <https://www.codeschool.com/courses/try-r>

For the workshop, please **bring your own laptop and install the program R** (<https://cran.r-project.org/>) and the environment **RStudio** (<https://www.rstudio.com/>) in advance.

PLACE:

The workshop takes place at the **COSB Seminar Room 2.022**, UZA 1, Biologiezentrum, Althanstrasse 14, 1090 Wien.

Workshop: Statistical Analysis in R

SCHEDULE:

22.2. Morning: Introduction to R, 9:00 to 12:00

- ◆ Topic 1: The basics of R. What is it, how does it work?
- ◆ Topic 2: Manipulating data.
- ◆ Topic 3: Key Components of (Generalized) Linear Models

22.2. Afternoon: Fitting Models and visualization, 13:00 to 16:00

- ◆ Topic 4: Normal linear regression
- ◆ Topic 5: ANOVA and general linear models
- ◆ Topic 6: Graphs and visualization

23.2. Morning: Mixed-effects and generalized linear models, 9:00 to 12:00

- ◆ Topic 7: Linear mixed-effects models (random effects)
- ◆ Topic 8: Generalized linear models (non-normal distributions)
- ◆ Topic 9: Over-dispersion + zero-inflation

23.2. Afternoon: GLMMs and advanced topics, 13:00 to 15:30

- ◆ Topic 10: Generalized linear mixed effects models
- ◆ Topic 11: Null hypothesis significance testing (NHST) vs information theoretic (IT) approach and model selection
- ◆ Topic 12: Model validation and predictions

REGISTRATION:

If you are interested in this workshop, please register at [https://vds-](https://vds-cobene.univie.ac.at/activities/statistic-workshop-registration/)

[cobene.univie.ac.at/activities/statistic-workshop-registration/](https://vds-cobene.univie.ac.at/activities/statistic-workshop-registration/) by 12 February 2018.

Registrations are considered based on registration date and time on a first come-first serve basis.