Lab 7

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April 4th 2017

Putting it all together

- If we assign different participants to different condtions, and aim to compare means between conditions we are performing between-subjects design ANOVA
- If we repeatedly assign the same participants to different conditions, and aim to compare means between condition we are performing within-subjects design ANOVA
- We can also assign different participants to different conditions, and then within each 'between' condition repeatedly assign the same partipants to different conditions - this is called mixed-design ANOVA

Mixed design ANOVA

- E.g. experiment where participants were randomly assigned to one of 3 conditions (control vs. placebo vs. treatment), and where DV was measured 3 times (pretest vs. posttest vs. follow up - 3 weeks later)
- We are performing mixed ANOVA in 3 (treatment) x 3 (time) design with the latter factor within subjects

(Some) Assumptions in mixed design

- Homogeneity of variances across levels of between factor - tested with Levene's test
- Sphericity of the repeated measurements = variances across each level of within factor are the same, correlations between pairs of levels are the same - tested with Mauchly's test
- Homogeneity of inter-correlations = variance-covariance matrices across levels of between factor - tested with Box's M test

Preparing for mid-term exam 1

- Review chapters on ANOVA (GLM 1), ANCOVA (GLM 2), factorial ANOVA (GLM 3), repeated-measures design (GLM 4), and mixed design ANOVA (GLM 5) from Andy Field's book
- Make sure you know how to interpret and report statistics in ANOVA tables, e.g. know how F value, Mean Square, or η_p^2 is calculated
- Make sure you know what: main effect, 2 way interaction, 3 way interation, simple main effect, and covariate effect mean
- Make sure you how to check assumptions of homogeneity of variance, sphericity, and homogeneity of intercorrelations

Preparing for mid-term exam 2

- Make sure you know how to perform posthocs both in oneway and factorial ANOVA.
- Make sure you know how to perform planned comparison analysis in oneway ANOVA - how to build contrasts, how to check whether to contrasts are orthogonal, how to build polynomial contrasts
- Make sure you know how to decompose (2 way and 3 way) interactions to obtain simple main effects with /EMMEANS command

- Make sure you know how to decompose 3-way interaction to obtain simple interaction terms (with /LMATRIX command)
- Make sure you know how to decompose 2-way interaction in mixed design ANOVA (with /LMATRIX and /MMATRIX commands)