PBS 111 Homework 2

Winter 21

1. Using the data from a perceptual learning experiment (percep\_learn.csv), carry our four analyses: (please treat the variable ‘trial’ as a factor for now.)
2. A traditional repeated measures analysis with no corrections.
3. The above analysis with corrections.
4. The MANOVA approach.
5. See if margarine A is superior to B in reducing cholesterol. Treat measurement period as a factor. Data are in chol2\_dat.txt.

Description of dataset.

A study tested whether cholesterol was reduced after using a certain brand of margarine as part of a low fat, low cholesterol diet. The subjects consumed on average 2.31g of the active ingredient, stanol easter, a day. This data set contains information on 18 people using margarine to reduce cholesterol over three time points. The data set can be used to demonstrate paired t-tests, repeated measures ANOVA and a mixed between-within ANOVA using the final variable ‘Margarine’. The dataset is also good for discussion about meaningful differences as the difference between weeks 4 and 8 is very small but significant.

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| Variable name | Variable | Data type |
| ID | Participant number |  |
| Before | Cholesterol before the diet (mmol/L) | Scale |
| After4weeks | Cholesterol after 4 weeks on the diet (mmol/L) | Scale |
| After8weeks | Cholesterol after 8 weeks on the diet (mmol/L) | Scale |
| Margarine | Margarine type A or B | Binary |