

UCL Institute of Cognitive Neuroscience Matlab Course

Lecture 5: Practical Exercise

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[1] Import the SeqMemData.mat file into Matlab. This contains sequence and source memory accuracy data for two conditions (successive objects in the sequence either being located in the same room or a different room) from 38 participants that each completed two experimental blocks of the experiment, as well as the average time between viewing successive objects in the sequence for each participant and condition. First, average the SequenceMemory, SourceMemory and AverageTime values across blocks for each condition (the condition labels are provided in 'Key') to obtain mean performance values for each participant in each condition. Next, assess whether there is any significant difference in mean sequence memory accuracy between conditions across participants, and in mean source memory accuracy between conditions across participants. Next, assess whether there is a significant correlation between average time and sequence memory accuracy, and between average time and source memory within each condition across participants. Finally, assess whether there is a significant correlation between sequence and source memory scores in each condition across participants. Save the test statistics and p-values from each analysis, as well as the averaged data, in a *.mat file named 'SeqMemAnalysis.mat'

[2] Import all information from the Data1.xlsx file into Matlab. Compute the mean and standard error of accuracy and RT values for each condition across all participants. Assess whether there is any significant difference in accuracy and reaction times between conditions across all participants. Assess whether there is any difference in mean accuracy between participant's that are left- and right-handed. Compute the correlation coefficient and p value for the relationship between age and mean accuracy across both conditions for each participant. Save the mean and standard error of accuracy and RT values for each condition, as well as the results of all statistical analyses, in a *.mat file named 'Data1Analysis.mat'