

# The Reading Group study: Matlab code

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This document provides the information about using the matlab programs associated with the Reading Group study.

## 1 Data Collection

The instructions for starting and ending the SCO and NSCM scores are posted on the reading group laptop.

## 2 Data backup

The SCO and the NSCM data log files should be stored in

`./ReadingGroup/SCO/data/`

and

`./ReadingGroup/NSCM/data/`

folders, respectively.

## 3 Analysis

### 3.1 SCO task

The analysis files for the SCO task are stored in `./ReadingGroup/SCO/analysis/` folder.

- `Plot_progress.m`: Plots the progress (i.e. cumulative scores) of the subjects.
- `ReadLogFiles.m`: Reads the data log files and calculates the number of presentations and scores for all phones. These values are stored in the mat file `'Data_<subject ID>.mat'` and the text file `'scores_<subject ID>.txt'`.
- `Make_ScoreTables.m`: Reads the `'Data_<subject ID>.mat'` files and makes `.csv` (comma delimited text) files of scores of all subjects. The `.csv` file can be imported in a MS Excel spreadsheet.

After the scores for a subject are calculated, the low-scoring phones should be shortlisted and should be stored in ‘usage\_<subject ID>.txt’ file. See the format of past usage files. This file should be stored in

~/ReadingSvana\_2/bin/testdata/ReadingGroup/

folder on the reading group laptop. The NSCM code will not recognize the subject ID, unless it finds the corresponding usage file.

## 3.2 NSCM task

The analysis files for the SCO task are stored in ./ReadingGroup/NSCM/analysis/ folder.

- **ReadLogFiles.m**: Reads the data log files and calculates the number of presentations and scores for all phones. These values are stored in the mat file ‘Data\_<subject ID>.mat’.
- **Read\_IPA.m**: Reads IPA transcriptions inputs from the Excel spreadsheets and scores for all phones. These values are stored in the mat file ‘IPAData\_<subject ID>.mat’.
- **MakeCM.m**: Reads the ‘Data\_<subject ID>.mat’, generates confusion matrices and stores those in ‘CM\_<subject ID>.mat’ files.
- **MakeCM\_Laura.m**: Performs the functions of **ReadLogFiles.m** and **MakeCM.m**, but for Laura. Laura’s data is stored in a slightly different format, which was changed after Laura was tested.
- **MakeCM\_IPACombined.m**: Combines the data from ‘Data\_<subject ID>.mat’ and ‘IPAData\_<subject ID>.mat’, generates the combined confusion matrices and stores those in ‘CM\_IPACombined\_<subject ID>.mat’ files.
- **Make\_CMTable.m**: Reads ‘Data\_<subject ID>.mat’ and stores consonant and vowel CMs in ‘CM.C\_<subject ID>.txt’ and ‘CM.V\_<subject ID>.txt’ files, respectively.
- **Make\_ScoreTable.m**: Reads ‘CM\_<subject ID>.mat’ files and stores consonant and vowels CMs for initial position, final position and overall in ‘NSCMProfile\_<subject ID>.txt’ file.