102008_Sternberg_singleNEUROIMAGING.rnw
compiled November 27, 2018
This file summarizes 102008's behavioral performance on the DMCC Sternberg task, NEUROIMAGING version.

Quality Control: expected stimuli and responses?

The first block of code reads in the eprime output files (e-recovery or .csv), and then checks whether the expected number and types of trials was present in each run and block. Unless a run was known to end early, any error messages printed below should be investigated. NOTE: if you have more than two runs you will need to update this code.

This checks if for NN trials the probe word was not in the words of this trial or the previous; for NP trials the probe word was in the current trial but not the previous; for RN trials the probe word was in the previous trials but not the current.

```
## [1] "was there an error with the NN, NP, or RN trial words? FALSE"
```

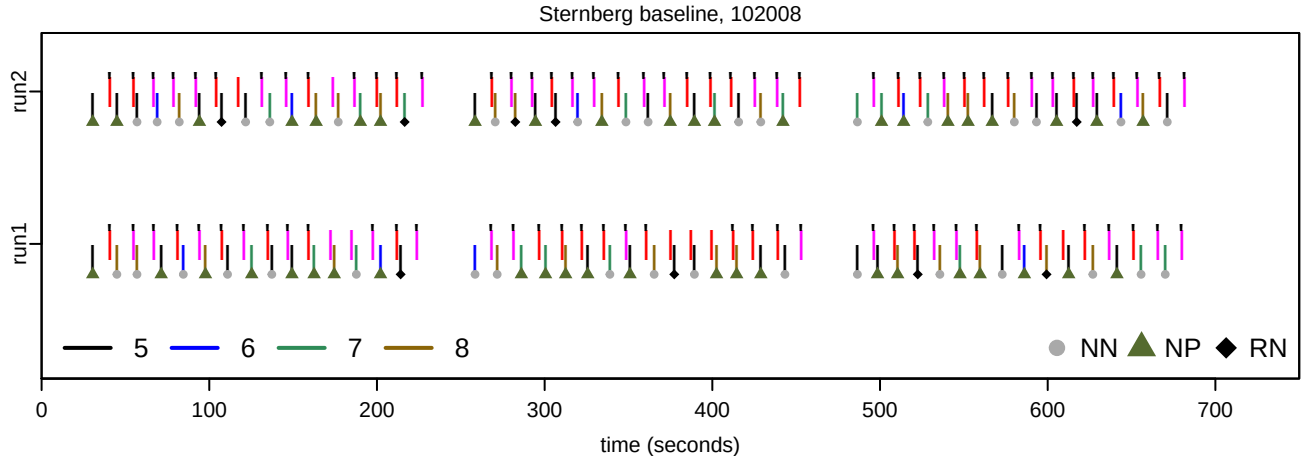
This code checks if the number of trials in each run is correct (e.g., 9 NP list length 5 in baseline run 2).

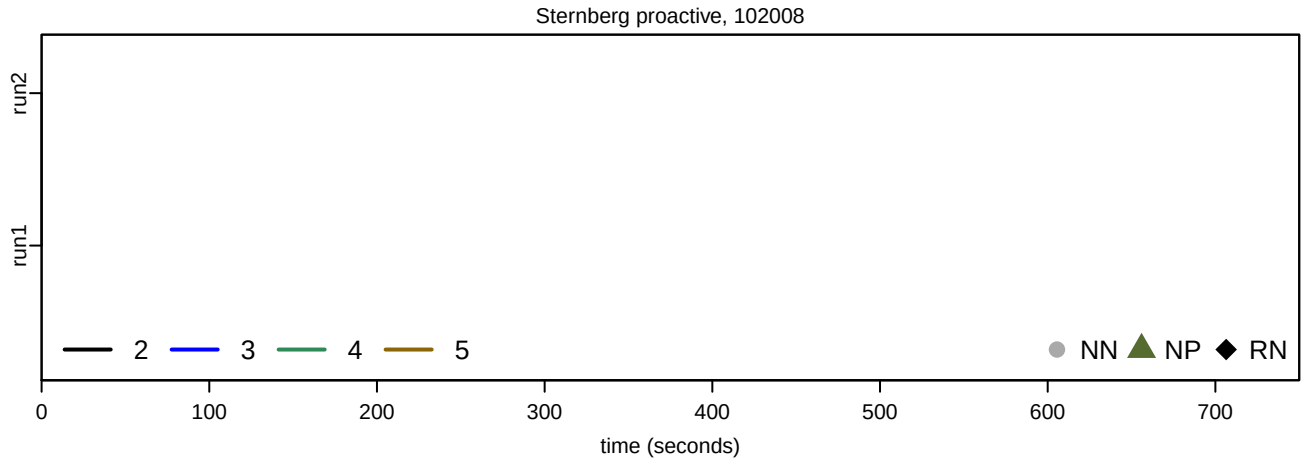
```
## [1] "was there an error with the number of trials? FALSE"
```

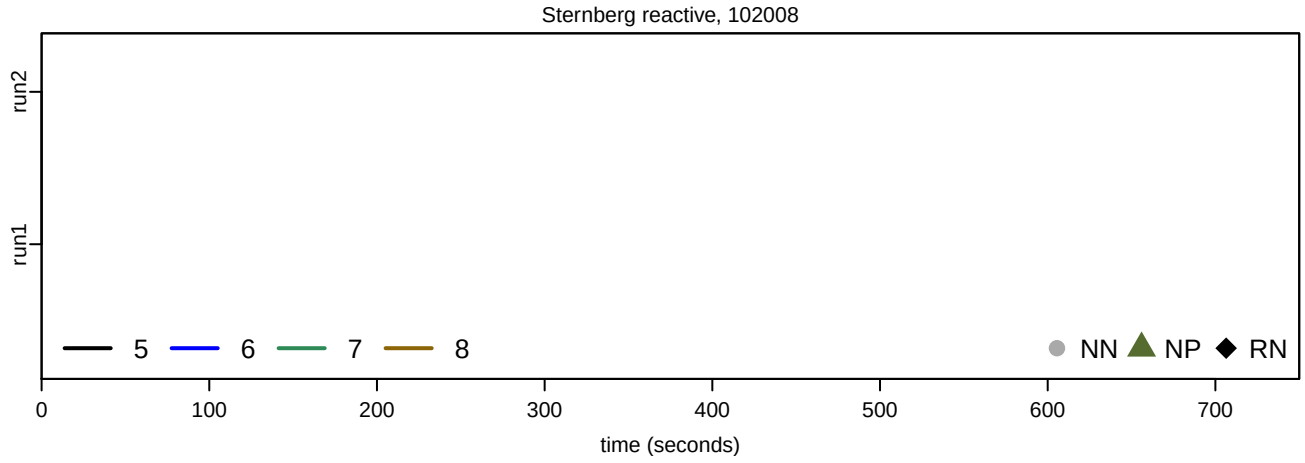
This code checks if the expected words were presented.

```
## [1] "was there an error with the presented words? FALSE"
```

These plots show the time and type of every trial (blues and greens) and response (red and pink); black tick marks indicate correct trials. The trial types and responses should be random, and errors should be approximately equal across the runs within each session (check if a participant appears to have stopped responding or suddenly increased in errors). Proactive should have list lengths of 2, 3, 4, and 5; Baseline and Reactive should have list lengths of 5, 6, 7, and 8.

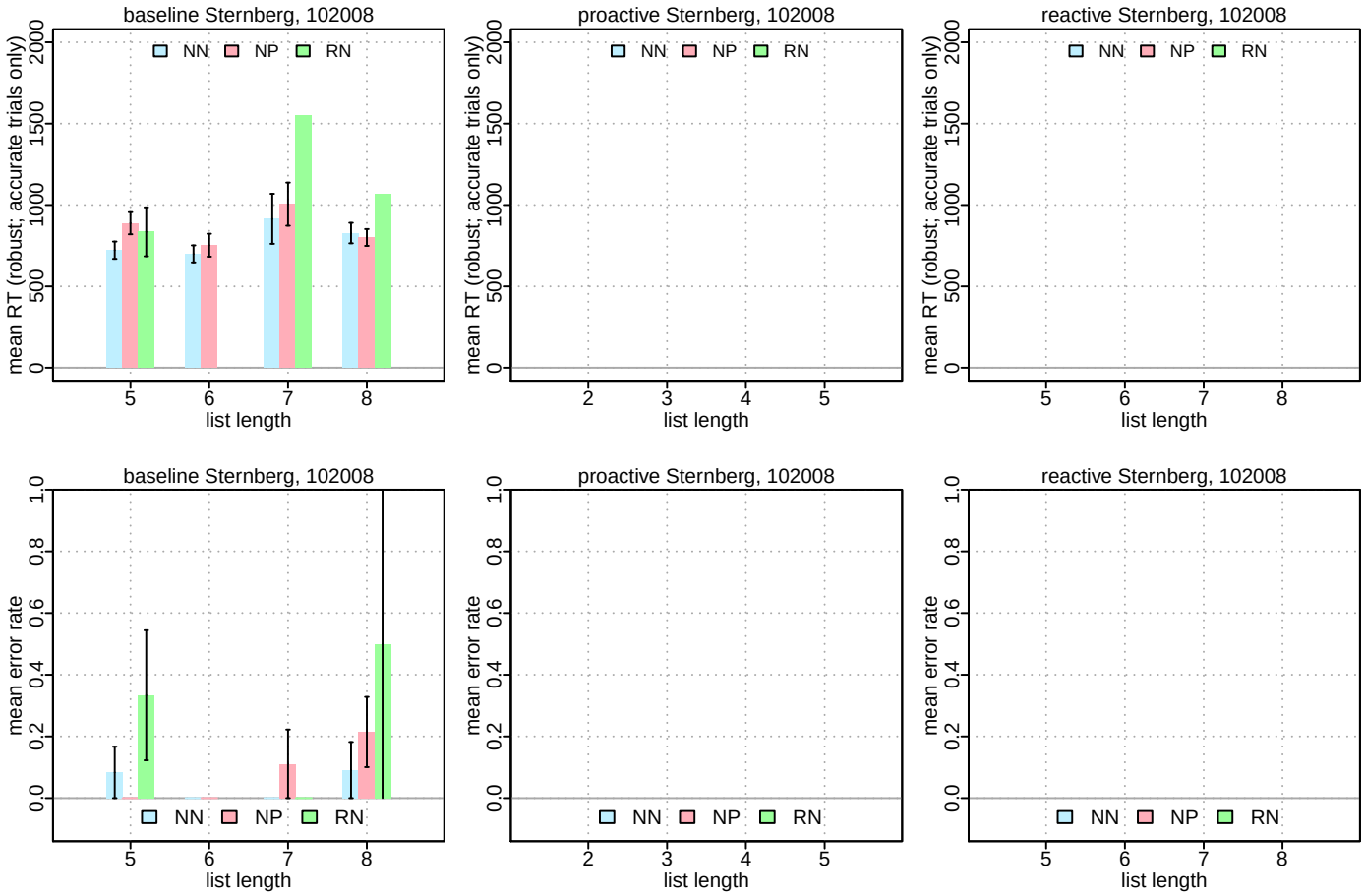




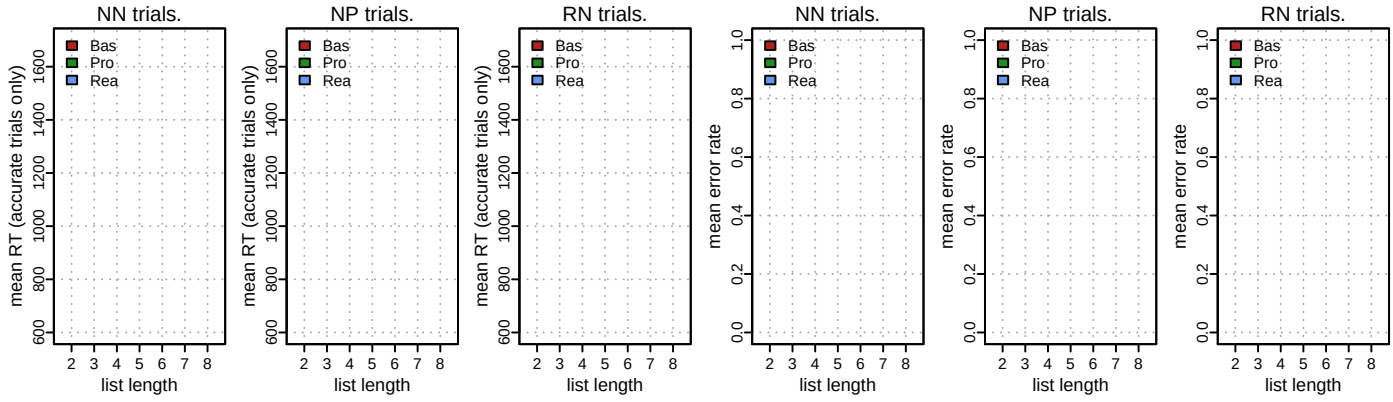


Single-subject statistics for 102008

We hope that the NN trials (blue) will have the lowest error rate, and that the RN (green) trials will be slower (bigger RT) than NN and NP trials. The error rate might be higher and RT slower with longer list lengths.
Robust statistics for RT? TRUE (Robust statistics never used for ERR, since typically very few errors.)



The following figures have the same means and SEMs as in the above barplots, rearranged to facilitate across-session comparisons.



```
##     session trial.type list.len num.trials   ERR.mean  ACC.mean    ACC.sem   RT.mean
## 1  baseline         NN        5         12 0.08333333 0.9166667 0.08333333  722.3333
## 2  baseline         NN        6          5 0.00000000 1.0000000 0.00000000  699.6000
## 3  baseline         NN        7          8 0.00000000 1.0000000 0.00000000  915.2500
## 4  baseline         NN        8         11 0.09090909 0.9090909 0.09090909  827.7500
## 5  baseline         NP        5         18 0.00000000 1.0000000 0.00000000  888.1250
## 6  baseline         NP        6          4 0.00000000 1.0000000 0.00000000  753.0000
## 7  baseline         NP        7          9 0.11111111 0.8888889 0.11111111 1005.2500
## 8  baseline         NP        8         14 0.21428571 0.7857143 0.11380393  800.6667
## 9  baseline         RN        5          6 0.33333333 0.6666667 0.21081851  835.2500
## 10 baseline         RN        7          1 0.00000000 1.0000000         NA 1549.0000
## 11 baseline         RN        8          2 0.50000000 0.5000000 0.50000000 1069.0000
```

Sternberg derived measures for 102008

Calculated from the mean RT and error rates in the above table.

```
## [1] "Critical Trial, baseline NN RT: 722.333 ERR: 0.083 IES: 788"
## [1] "Critical Trial, baseline NP RT: 888.125 ERR: 0 IES: 888.125"
## [1] "Critical Trial, baseline RN RT: 835.25 ERR: 0.333 IES: 1252.875"
## [1]
## [1] "Recency Effect, baseline RT: 112.917 ERR: 0.25 IES: 464.875"
```