Weston PD ANOVA Results

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# Weston 5-CSRTT ANOVA Results Report

This report details the standard univariate analyses of the Weston project data. The data used in this analysis represents the completed datasets obtained from the datafiles used for the spotfire website.

## Pretraining - Punish Incorrect

### Number of Sessions

This ANOVA was a 2 (Sex) x 2 (Genotype) x 2 (Test Site) design.

#### APP/PS1 Mice

pretrain.anova$APP$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 453.64 1 105.3192 0.00000000000005292 \*\*\*  
## Genotype 35.33 1 8.2025 0.006059 \*\*   
## Sex 10.86 1 2.5212 0.118509   
## Genotype:Sex 10.57 1 2.4543 0.123388   
## Residuals 219.67 51   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

pretrain.anova$TG5x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 506.54 1 200.4983 < 0.0000000000000002 \*\*\*  
## Genotype 2.01 1 0.7974 0.37489   
## Sex 7.66 1 3.0311 0.08601 .   
## Genotype:Sex 1.23 1 0.4859 0.48802   
## Residuals 179.38 71   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 3xTG Mice

pretrain.anova$TG3x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 458.50 1 45.0185 0.00000001127 \*\*\*  
## Genotype 5.80 1 0.5697 0.4536   
## Sex 11.23 1 1.1028 0.2982   
## Genotype:Sex 15.79 1 1.5504 0.2184   
## Residuals 560.16 55   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## Acquisition: 4 Months

### Number of Sessions

This ANOVA was a 2 (Sex) x 2 (Genotype) design.

#### APP/PS1 Mice

acq.4month.anova$APP$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 5889.2 1 233.0999 < 0.00000000000000022 \*\*\*  
## Genotype 198.8 1 7.8685 0.007588 \*\*   
## Sex 0.9 1 0.0372 0.848026   
## Genotype:Sex 57.8 1 2.2866 0.137985   
## Residuals 1061.1 42   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

acq.4month.anova$TG5x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 12245.3 1 460.7537 < 0.0000000000000002 \*\*\*  
## Genotype 96.5 1 3.6300 0.06162 .   
## Sex 205.0 1 7.7153 0.00733 \*\*   
## Genotype:Sex 3.2 1 0.1185 0.73185   
## Residuals 1568.0 59   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 3xTG Mice

acq.4month.anova$TG3x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 7097.2 1 406.1512 <0.0000000000000002 \*\*\*  
## Genotype 1.5 1 0.0871 0.7690   
## Sex 1.5 1 0.0871 0.7690   
## Genotype:Sex 5.1 1 0.2917 0.5913   
## Residuals 961.1 55   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## Acquisition: 7 Months

### Number of Sessions

This ANOVA was a 2 (Sex) x 2 (Genotype) design.

#### APP/PS1 Mice

acq.7month.anova$APP$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 2758.46 1 205.5769 <0.0000000000000002 \*\*\*  
## Genotype 1.57 1 0.1174 0.7336   
## Sex 13.49 1 1.0053 0.3218   
## Genotype:Sex 2.83 1 0.2112 0.6482   
## Residuals 563.56 42   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

acq.7month.anova$TG5x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 3681.1 1 252.7953 <0.0000000000000002 \*\*\*  
## Genotype 6.6 1 0.4509 0.5045   
## Sex 36.1 1 2.4815 0.1205   
## Genotype:Sex 12.4 1 0.8511 0.3600   
## Residuals 859.1 59   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 3xTG Mice

acq.7month.anova$TG3x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 3029.61 1 394.0013 < 0.0000000000000002 \*\*\*  
## Genotype 23.47 1 3.0519 0.08623 .   
## Sex 10.95 1 1.4237 0.23791   
## Genotype:Sex 0.08 1 0.0098 0.92159   
## Residuals 422.91 55   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## Acquisition: 10 Months

### Number of Sessions

This ANOVA was a 2 (Sex) x 2 (Genotype) design.

#### APP/PS1 Mice

acq.10month.anova$APP$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 10452.3 1 257.8817 < 0.0000000000000002 \*\*\*  
## Genotype 74.1 1 1.8293 0.18345   
## Sex 179.2 1 4.4204 0.04155 \*   
## Genotype:Sex 8.3 1 0.2057 0.65252   
## Residuals 1702.3 42   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

acq.10month.anova$TG5x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 23748.1 1 240.8855 < 0.00000000000000022 \*\*\*  
## Genotype 32.4 1 0.3291 0.568345   
## Sex 759.5 1 7.7043 0.007369 \*\*   
## Genotype:Sex 780.8 1 7.9201 0.006633 \*\*   
## Residuals 5816.6 59   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 3xTG Mice

acq.10month.anova$TG3x$Sessions

## Anova Table (Type III tests)  
##   
## Response: as.matrix(data.depend)  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 10819.1 1 156.7743 <0.0000000000000002 \*\*\*  
## Genotype 60.6 1 0.8788 0.3526   
## Sex 45.7 1 0.6629 0.4190   
## Genotype:Sex 10.1 1 0.1466 0.7033   
## Residuals 3795.6 55   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## PAL Training Data: 4 Months

### Total Session Length

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2026288283 1 76647660 45 1189.6380  
## Genotype 33843 1 76647660 45 0.0199  
## Sex 3429382 1 76647660 45 2.0134  
## Genotype:Sex 2239225 1 76647660 45 1.3147  
## Day 351342965 9 79450553 405 198.9971  
## Genotype:Day 1643905 9 79450553 405 0.9311  
## Sex:Day 2605413 9 79450553 405 1.4757  
## Genotype:Sex:Day 1152438 9 79450553 405 0.6527  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.8885   
## Sex 0.1628   
## Genotype:Sex 0.2576   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.4978   
## Sex:Day 0.1546   
## Genotype:Sex:Day 0.7516   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.013486 0.0000000000000000033594  
## Genotype:Day 0.013486 0.0000000000000000033594  
## Sex:Day 0.013486 0.0000000000000000033594  
## Genotype:Sex:Day 0.013486 0.0000000000000000033594  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.48624 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.48624 0.4530   
## Sex:Day 0.48624 0.2066   
## Genotype:Sex:Day 0.48624 0.6393   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.545121 4.959652e-79  
## Genotype:Day 0.545121 4.603591e-01  
## Sex:Day 0.545121 1.998876e-01  
## Genotype:Sex:Day 0.545121 6.567932e-01

#### 5xFAD Mice

summary(main.4month.anova$TG5x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 3684072623 1 206259765 57 1018.0955  
## Genotype 804975 1 206259765 57 0.2225  
## Sex 2460263 1 206259765 57 0.6799  
## Genotype:Sex 790163 1 206259765 57 0.2184  
## Day 224315179 9 161113838 513 79.3598  
## Genotype:Day 1499189 9 161113838 513 0.5304  
## Sex:Day 4601598 9 161113838 513 1.6280  
## Genotype:Sex:Day 4627728 9 161113838 513 1.6372  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.6390   
## Sex 0.4131   
## Genotype:Sex 0.6421   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.8527   
## Sex:Day 0.1042   
## Genotype:Sex:Day 0.1017   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.033348 0.00000000000000000094158  
## Genotype:Day 0.033348 0.00000000000000000094158  
## Sex:Day 0.033348 0.00000000000000000094158  
## Genotype:Sex:Day 0.033348 0.00000000000000000094158  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.52904 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.52904 0.7446   
## Sex:Day 0.52904 0.1561   
## Genotype:Sex:Day 0.52904 0.1537   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Day 0.5831352  
## Genotype:Day 0.5831352  
## Sex:Day 0.5831352  
## Genotype:Sex:Day 0.5831352  
## Pr(>F[HF])  
## Day 0.000000000000000000000000000000000000000000000000000002169404  
## Genotype:Day 0.761756646786216240485600792453624308109283447265625000000000  
## Sex:Day 0.148903472466957953468380537742632441222667694091796875000000  
## Genotype:Sex:Day 0.146462940305412847585841973341302946209907531738281250000000

#### 3xTG Mice

summary(main.4month.anova$TG3x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2937581661 1 144430533 53 1077.9703  
## Genotype 1492 1 144430533 53 0.0005  
## Sex 89164 1 144430533 53 0.0327  
## Genotype:Sex 1765143 1 144430533 53 0.6477  
## Day 322838475 9 157252557 477 108.8087  
## Genotype:Day 1422890 9 157252557 477 0.4796  
## Sex:Day 2412191 9 157252557 477 0.8130  
## Genotype:Sex:Day 934253 9 157252557 477 0.3149  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.9814   
## Sex 0.8571   
## Genotype:Sex 0.4245   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.8885   
## Sex:Day 0.6044   
## Genotype:Sex:Day 0.9701   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.023214 0.00000000000000000017695  
## Genotype:Day 0.023214 0.00000000000000000017695  
## Sex:Day 0.023214 0.00000000000000000017695  
## Genotype:Sex:Day 0.023214 0.00000000000000000017695  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.5318 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.5318 0.7835   
## Sex:Day 0.5318 0.5367   
## Genotype:Sex:Day 0.5318 0.8972   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.591007 6.167237e-66  
## Genotype:Day 0.591007 8.024149e-01  
## Sex:Day 0.591007 5.477271e-01  
## Genotype:Sex:Day 0.591007 9.128319e-01

### Total Completed Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.4month.anova$APP$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 370905 1 1698.5 45 9827.0008  
## Genotype 0 1 1698.5 45 0.0046  
## Sex 223 1 1698.5 45 5.8974  
## Genotype:Sex 10 1 1698.5 45 0.2606  
## Day 7362 9 5030.0 405 65.8617  
## Genotype:Day 90 9 5030.0 405 0.8014  
## Sex:Day 399 9 5030.0 405 3.5658  
## Genotype:Sex:Day 73 9 5030.0 405 0.6538  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.9459833   
## Sex 0.0192225 \*   
## Genotype:Sex 0.6121713   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.6152287   
## Sex:Day 0.0002792 \*\*\*  
## Genotype:Sex:Day 0.7506825   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

summary(main.4month.anova$TG5x$TotalTrials, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 304354 1 17872 57 970.7168  
## Genotype 1074 1 17872 57 3.4244  
## Sex 664 1 17872 57 2.1187  
## Genotype:Sex 100 1 17872 57 0.3187  
## Day 13342 9 12572 513 60.4904  
## Genotype:Day 265 9 12572 513 1.1999  
## Sex:Day 214 9 12572 513 0.9705  
## Genotype:Sex:Day 301 9 12572 513 1.3628  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.06942 .   
## Sex 0.15099   
## Genotype:Sex 0.57462   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.29256   
## Sex:Day 0.46353   
## Genotype:Sex:Day 0.20210   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Day 0.0032614  
## Genotype:Day 0.0032614  
## Sex:Day 0.0032614  
## Genotype:Sex:Day 0.0032614  
## p-value  
## Day 0.000000000000000000000000000000000000000047133  
## Genotype:Day 0.000000000000000000000000000000000000000047133  
## Sex:Day 0.000000000000000000000000000000000000000047133  
## Genotype:Sex:Day 0.000000000000000000000000000000000000000047133  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.39734 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.39734 0.3120   
## Sex:Day 0.39734 0.4182   
## Genotype:Sex:Day 0.39734 0.2514   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4272146 0.000000000000000000000000000000001635445  
## Genotype:Day 0.4272146 0.311858723244534119523052595468470826745  
## Sex:Day 0.4272146 0.422267603134225288918912610824918374419  
## Genotype:Sex:Day 0.4272146 0.249087744443746150757590385182993486524

#### 3xTG Mice

summary(main.4month.anova$TG3x$TotalTrials, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 372491 1 12340 53 1599.8725  
## Genotype 933 1 12340 53 4.0070  
## Sex 114 1 12340 53 0.4880  
## Genotype:Sex 257 1 12340 53 1.1042  
## Day 12308 9 11221 477 58.1363  
## Genotype:Day 281 9 11221 477 1.3265  
## Sex:Day 75 9 11221 477 0.3562  
## Genotype:Sex:Day 147 9 11221 477 0.6941  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.05044 .   
## Sex 0.48790   
## Genotype:Sex 0.29810   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.22030   
## Sex:Day 0.95499   
## Genotype:Sex:Day 0.71444   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.00014312 2.0248e-66  
## Genotype:Day 0.00014312 2.0248e-66  
## Sex:Day 0.00014312 2.0248e-66  
## Genotype:Sex:Day 0.00014312 2.0248e-66  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.39082 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.39082 0.2646   
## Sex:Day 0.39082 0.8156   
## Genotype:Sex:Day 0.39082 0.5789   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4220109 0.0000000000000000000000000000001602995  
## Genotype:Day 0.4220109 0.2626458739627003380334713256161194295  
## Sex:Day 0.4220109 0.8300262981644623838661800618865527213  
## Genotype:Sex:Day 0.4220109 0.5895244690733267844962028902955353260

### Session Accuracy

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1835039 1 36898 45 2237.9449  
## Genotype 6428 1 36898 45 7.8397  
## Sex 723 1 36898 45 0.8815  
## Genotype:Sex 0 1 36898 45 0.0006  
## Day 216244 9 57717 405 168.5988  
## Genotype:Day 917 9 57717 405 0.7147  
## Sex:Day 1485 9 57717 405 1.1580  
## Genotype:Sex:Day 623 9 57717 405 0.4855  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.007504 \*\*   
## Sex 0.352795   
## Genotype:Sex 0.980481   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.695525   
## Sex:Day 0.320724   
## Genotype:Sex:Day 0.884407   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0068269 0.000000000000000000000051925  
## Genotype:Day 0.0068269 0.000000000000000000000051925  
## Sex:Day 0.0068269 0.000000000000000000000051925  
## Genotype:Sex:Day 0.0068269 0.000000000000000000000051925  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.37918 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.37918 0.5618   
## Sex:Day 0.37918 0.3299   
## Genotype:Sex:Day 0.37918 0.7170   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4140651 7.687813e-56  
## Genotype:Day 0.4140651 5.734441e-01  
## Sex:Day 0.4140651 3.306546e-01  
## Genotype:Sex:Day 0.4140651 7.333037e-01

#### 5xFAD Mice

summary(main.4month.anova$TG5x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1176155 1 71363 57 939.4373  
## Genotype 331 1 71363 57 0.2646  
## Sex 813 1 71363 57 0.6491  
## Genotype:Sex 77 1 71363 57 0.0618  
## Day 134796 9 93767 513 81.9407  
## Genotype:Day 1599 9 93767 513 0.9720  
## Sex:Day 1610 9 93767 513 0.9788  
## Genotype:Sex:Day 1792 9 93767 513 1.0895  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.6090   
## Sex 0.4238   
## Genotype:Sex 0.8046   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.4623   
## Sex:Day 0.4565   
## Genotype:Sex:Day 0.3687   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.065513 0.00000000000068741  
## Genotype:Day 0.065513 0.00000000000068741  
## Sex:Day 0.065513 0.00000000000068741  
## Genotype:Sex:Day 0.065513 0.00000000000068741  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.58184 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.58184 0.4375   
## Sex:Day 0.58184 0.4331   
## Genotype:Sex:Day 0.58184 0.3669   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6476424 1.879612e-61  
## Genotype:Day 0.6476424 4.427036e-01  
## Sex:Day 0.6476424 4.380914e-01  
## Genotype:Sex:Day 0.6476424 3.680171e-01

#### 3xTG Mice

summary(main.4month.anova$TG3x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1933223 1 71867 53 1425.7053  
## Genotype 879 1 71867 53 0.6484  
## Sex 147 1 71867 53 0.1086  
## Genotype:Sex 8076 1 71867 53 5.9560  
## Day 235697 9 82575 477 151.2799  
## Genotype:Day 1099 9 82575 477 0.7056  
## Sex:Day 2196 9 82575 477 1.4096  
## Genotype:Sex:Day 1745 9 82575 477 1.1199  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.42429   
## Sex 0.74304   
## Genotype:Sex 0.01804 \*   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.70400   
## Sex:Day 0.18096   
## Genotype:Sex:Day 0.34672   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.033896 0.00000000000000023157  
## Genotype:Day 0.033896 0.00000000000000023157  
## Sex:Day 0.033896 0.00000000000000023157  
## Genotype:Sex:Day 0.033896 0.00000000000000023157  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.50613 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.50613 0.6068   
## Sex:Day 0.50613 0.2259   
## Genotype:Sex:Day 0.50613 0.3495   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5595804 5.086058e-76  
## Genotype:Day 0.5595804 6.207173e-01  
## Sex:Day 0.5595804 2.206152e-01  
## Genotype:Sex:Day 0.5595804 3.501271e-01

### Session Correction Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 390317 1 52503 40 297.3676  
## Genotype 11441 1 52503 40 8.7165  
## Sex 34 1 52503 40 0.0255  
## Genotype:Sex 4022 1 52503 40 3.0641  
## Day 211674 9 41974 360 201.7187  
## Genotype:Day 3376 9 41974 360 3.2171  
## Sex:Day 1923 9 41974 360 1.8324  
## Genotype:Sex:Day 4505 9 41974 360 4.2932  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0052560 \*\*   
## Sex 0.8738181   
## Genotype:Sex 0.0877079 .   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.0009119 \*\*\*  
## Sex:Day 0.0612461 .   
## Genotype:Sex:Day 0.00002573 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0061125 0.00000000000000000020074  
## Genotype:Day 0.0061125 0.00000000000000000020074  
## Sex:Day 0.0061125 0.00000000000000000020074  
## Genotype:Sex:Day 0.0061125 0.00000000000000000020074  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.47997 < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.47997 0.011914 \*   
## Sex:Day 0.47997 0.119394   
## Genotype:Sex:Day 0.47997 0.001862 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5453061 9.940488e-75  
## Genotype:Day 0.5453061 8.560406e-03  
## Sex:Day 0.5453061 1.095357e-01  
## Genotype:Sex:Day 0.5453061 1.076937e-03

#### 5xFAD Mice

summary(main.4month.anova$TG5x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 702860 1 41280 57 970.5175  
## Genotype 338 1 41280 57 0.4673  
## Sex 1016 1 41280 57 1.4028  
## Genotype:Sex 2445 1 41280 57 3.3759  
## Day 166978 9 76678 513 124.1270  
## Genotype:Day 967 9 76678 513 0.7192  
## Sex:Day 2051 9 76678 513 1.5243  
## Genotype:Sex:Day 3156 9 76678 513 2.3463  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.49700   
## Sex 0.24117   
## Genotype:Sex 0.07137 .   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.69152   
## Sex:Day 0.13608   
## Genotype:Sex:Day 0.01341 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.014114 0.000000000000000000000000010351  
## Genotype:Day 0.014114 0.000000000000000000000000010351  
## Sex:Day 0.014114 0.000000000000000000000000010351  
## Genotype:Sex:Day 0.014114 0.000000000000000000000000010351  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.47793 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.47793 0.58928   
## Sex:Day 0.47793 0.19171   
## Genotype:Sex:Day 0.47793 0.05074 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5217934 2.348042e-65  
## Genotype:Day 0.5217934 6.010459e-01  
## Sex:Day 0.5217934 1.862617e-01  
## Genotype:Sex:Day 0.5217934 4.521141e-02

#### 3xTG Mice

summary(main.4month.anova$TG3x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 389623 1 44075 53 468.5216  
## Genotype 132 1 44075 53 0.1592  
## Sex 859 1 44075 53 1.0325  
## Genotype:Sex 1571 1 44075 53 1.8886  
## Day 218548 9 65861 477 175.8703  
## Genotype:Day 1541 9 65861 477 1.2397  
## Sex:Day 1272 9 65861 477 1.0234  
## Genotype:Sex:Day 1065 9 65861 477 0.8567  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.6915   
## Sex 0.3142   
## Genotype:Sex 0.1751   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.2683   
## Sex:Day 0.4200   
## Genotype:Sex:Day 0.5642   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0057417 0.00000000000000000000000000000012095  
## Genotype:Day 0.0057417 0.00000000000000000000000000000012095  
## Sex:Day 0.0057417 0.00000000000000000000000000000012095  
## Genotype:Sex:Day 0.0057417 0.00000000000000000000000000000012095  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.46197 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.46197 0.2945   
## Sex:Day 0.46197 0.3976   
## Genotype:Sex:Day 0.46197 0.4943   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5062019 5.736342e-75  
## Genotype:Day 0.5062019 2.928832e-01  
## Sex:Day 0.5062019 4.009861e-01  
## Genotype:Sex:Day 0.5062019 5.025029e-01

### Correct Response Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2813.67 1 118.48 39 926.1947  
## Genotype 67.04 1 118.48 39 22.0666  
## Sex 50.66 1 118.48 39 16.6765  
## Genotype:Sex 22.81 1 118.48 39 7.5085  
## Day 288.20 9 226.78 351 49.5641  
## Genotype:Day 27.87 9 226.78 351 4.7932  
## Sex:Day 46.29 9 226.78 351 7.9610  
## Genotype:Sex:Day 22.71 9 226.78 351 3.9061  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.00003236918743 \*\*\*  
## Sex 0.0002131 \*\*\*  
## Genotype:Sex 0.0092150 \*\*   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.00000482218905 \*\*\*  
## Sex:Day 0.00000000009907 \*\*\*  
## Genotype:Sex:Day 0.00009549342382 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Day 0.000087905  
## Genotype:Day 0.000087905  
## Sex:Day 0.000087905  
## Genotype:Sex:Day 0.000087905  
## p-value  
## Day 0.00000000000000000000000000000000000000000000089296  
## Genotype:Day 0.00000000000000000000000000000000000000000000089296  
## Sex:Day 0.00000000000000000000000000000000000000000000089296  
## Genotype:Sex:Day 0.00000000000000000000000000000000000000000000089296  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.26807 < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.26807 0.0067738 \*\*   
## Sex:Day 0.26807 0.0002742 \*\*\*  
## Genotype:Sex:Day 0.26807 0.0171829 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.2870001 0.000000000000000003401325  
## Genotype:Day 0.2870001 0.005575898123094991803983  
## Sex:Day 0.2870001 0.000185060708164871463464  
## Genotype:Sex:Day 0.2870001 0.014935566136222429983738

#### 5xFAD Mice

summary(main.4month.anova$TG5x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2705.05 1 310.58 39 339.6802  
## Genotype 39.73 1 310.58 39 4.9893  
## Sex 0.11 1 310.58 39 0.0134  
## Genotype:Sex 1.18 1 310.58 39 0.1478  
## Day 183.73 9 340.59 351 21.0387  
## Genotype:Day 4.21 9 340.59 351 0.4825  
## Sex:Day 9.64 9 340.59 351 1.1035  
## Genotype:Sex:Day 7.21 9 340.59 351 0.8253  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.03131 \*   
## Sex 0.90854   
## Genotype:Sex 0.70271   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.88624   
## Sex:Day 0.35937   
## Genotype:Sex:Day 0.59312   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0065459 0.0000000000000000036921  
## Genotype:Day 0.0065459 0.0000000000000000036921  
## Sex:Day 0.0065459 0.0000000000000000036921  
## Genotype:Sex:Day 0.0065459 0.0000000000000000036921  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.50868 0.000000000000001429 \*\*\*  
## Genotype:Day 0.50868 0.7732   
## Sex:Day 0.50868 0.3589   
## Genotype:Sex:Day 0.50868 0.5242   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.584655 0.00000000000000001473954  
## Genotype:Day 0.584655 0.79814159205007728647985  
## Sex:Day 0.584655 0.36026730743903007114781  
## Genotype:Sex:Day 0.584655 0.53809604830446766676744

#### 3xTG Mice

summary(main.4month.anova$TG3x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 4804.0 1 455.82 43 453.1845  
## Genotype 54.4 1 455.82 43 5.1352  
## Sex 20.5 1 455.82 43 1.9348  
## Genotype:Sex 18.8 1 455.82 43 1.7722  
## Day 416.1 9 529.59 387 33.7891  
## Genotype:Day 19.6 9 529.59 387 1.5943  
## Sex:Day 23.6 9 529.59 387 1.9183  
## Genotype:Sex:Day 23.9 9 529.59 387 1.9392  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.02854 \*   
## Sex 0.17139   
## Genotype:Sex 0.19012   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.11485   
## Sex:Day 0.04805 \*   
## Genotype:Sex:Day 0.04532 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0024924 0.00000000000000000000000000028955  
## Genotype:Day 0.0024924 0.00000000000000000000000000028955  
## Sex:Day 0.0024924 0.00000000000000000000000000028955  
## Genotype:Sex:Day 0.0024924 0.00000000000000000000000000028955  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.46655 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.46655 0.1749   
## Sex:Day 0.46655 0.1059   
## Genotype:Sex:Day 0.46655 0.1024   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5233317 0.000000000000000000000004625112  
## Genotype:Day 0.5233317 0.167136249764406719098275289070  
## Sex:Day 0.5233317 0.097083260403840784813489506178  
## Genotype:Sex:Day 0.5233317 0.093671821335688243426176313733

### Reward Collection Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.4month.anova$APP$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 510.45 1 5.3151 37 3553.3662  
## Genotype 0.61 1 5.3151 37 4.2421  
## Sex 1.30 1 5.3151 37 9.0839  
## Genotype:Sex 0.06 1 5.3151 37 0.4445  
## Day 1.83 9 4.6497 333 14.5783  
## Genotype:Day 0.10 9 4.6497 333 0.8266  
## Sex:Day 0.40 9 4.6497 333 3.1826  
## Genotype:Sex:Day 0.12 9 4.6497 333 0.9808  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.046521 \*   
## Sex 0.004636 \*\*   
## Genotype:Sex 0.509087   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.591938   
## Sex:Day 0.001045 \*\*   
## Genotype:Sex:Day 0.455612   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.021661 0.000000000317  
## Genotype:Day 0.021661 0.000000000317  
## Sex:Day 0.021661 0.000000000317  
## Genotype:Sex:Day 0.021661 0.000000000317  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.49316 0.00000000006245 \*\*\*  
## Genotype:Day 0.49316 0.52041   
## Sex:Day 0.49316 0.01201 \*   
## Genotype:Sex:Day 0.49316 0.42513   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5687084 0.0000000000028196  
## Genotype:Day 0.5687084 0.5344912394844527  
## Sex:Day 0.5687084 0.0082758216197476  
## Genotype:Sex:Day 0.5687084 0.4318837956556029

#### 5xFAD Mice

summary(main.4month.anova$TG5x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 579.90 1 15.7605 46 1692.5523  
## Genotype 2.80 1 15.7605 46 8.1654  
## Sex 0.76 1 15.7605 46 2.2215  
## Genotype:Sex 0.24 1 15.7605 46 0.6864  
## Day 1.24 9 7.6468 414 7.4433  
## Genotype:Day 0.09 9 7.6468 414 0.5371  
## Sex:Day 0.33 9 7.6468 414 1.9622  
## Genotype:Sex:Day 0.14 9 7.6468 414 0.8306  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.006392 \*\*   
## Sex 0.142925   
## Genotype:Sex 0.411680   
## Day 0.0000000004201 \*\*\*  
## Genotype:Day 0.847510   
## Sex:Day 0.042276 \*   
## Genotype:Sex:Day 0.588151   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.045699 0.00000000012067  
## Genotype:Day 0.045699 0.00000000012067  
## Sex:Day 0.045699 0.00000000012067  
## Genotype:Sex:Day 0.045699 0.00000000012067  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.52675 0.000002953 \*\*\*  
## Genotype:Day 0.52675 0.73871   
## Sex:Day 0.52675 0.08924 .   
## Genotype:Sex:Day 0.52675 0.52381   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5946516 0.0000008199712  
## Genotype:Day 0.5946516 0.7600033097282  
## Sex:Day 0.5946516 0.0799393411342  
## Genotype:Sex:Day 0.5946516 0.5357134048828

#### 3xTG Mice

summary(main.4month.anova$TG3x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 541.03 1 11.2758 33 1583.4078  
## Genotype 0.13 1 11.2758 33 0.3669  
## Sex 1.87 1 11.2758 33 5.4868  
## Genotype:Sex 0.88 1 11.2758 33 2.5716  
## Day 1.67 9 6.9556 297 7.9263  
## Genotype:Day 0.08 9 6.9556 297 0.3589  
## Sex:Day 0.29 9 6.9556 297 1.3546  
## Genotype:Sex:Day 0.44 9 6.9556 297 2.0783  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.54885   
## Sex 0.02534 \*   
## Genotype:Sex 0.11833   
## Day 0.0000000001672 \*\*\*  
## Genotype:Day 0.95355   
## Sex:Day 0.20841   
## Genotype:Sex:Day 0.03131 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.011613 0.00000000011374  
## Genotype:Day 0.011613 0.00000000011374  
## Sex:Day 0.011613 0.00000000011374  
## Genotype:Sex:Day 0.011613 0.00000000011374  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.4992 0.000003133 \*\*\*  
## Genotype:Day 0.4992 0.85802   
## Sex:Day 0.4992 0.24880   
## Genotype:Sex:Day 0.4992 0.07855 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5875848 0.0000005440184  
## Genotype:Day 0.5875848 0.8849610868797  
## Sex:Day 0.5875848 0.2414349486734  
## Genotype:Sex:Day 0.5875848 0.0664819825725

## PAL Training Data: 7 Months

### Total Session Length

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1934158788 1 104514806 47 869.7855  
## Genotype 59 1 104514806 47 0.0000  
## Sex 5224940 1 104514806 47 2.3496  
## Genotype:Sex 4439071 1 104514806 47 1.9962  
## Day 343254269 9 106983486 423 150.7985  
## Genotype:Day 316005 9 106983486 423 0.1388  
## Sex:Day 6283665 9 106983486 423 2.7605  
## Genotype:Sex:Day 2608773 9 106983486 423 1.1461  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.995914   
## Sex 0.132016   
## Genotype:Sex 0.164279   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.998576   
## Sex:Day 0.003794 \*\*   
## Genotype:Sex:Day 0.328685   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.017881 0.000000000000000013554  
## Genotype:Day 0.017881 0.000000000000000013554  
## Sex:Day 0.017881 0.000000000000000013554  
## Genotype:Sex:Day 0.017881 0.000000000000000013554  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.48253 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.48253 0.97418   
## Sex:Day 0.48253 0.02517 \*   
## Genotype:Sex:Day 0.48253 0.33668   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5377627 4.723371e-69  
## Genotype:Day 0.5377627 9.812775e-01  
## Sex:Day 0.5377627 2.045236e-02  
## Genotype:Sex:Day 0.5377627 3.368088e-01

#### 5xFAD Mice

summary(main.7month.anova$TG5x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2594835732 1 158948913 58 946.8481  
## Genotype 4871450 1 158948913 58 1.7776  
## Sex 123280 1 158948913 58 0.0450  
## Genotype:Sex 14010197 1 158948913 58 5.1123  
## Day 319956285 9 140529295 522 132.0541  
## Genotype:Day 4576975 9 140529295 522 1.8890  
## Sex:Day 10422506 9 140529295 522 4.3016  
## Genotype:Sex:Day 2360139 9 140529295 522 0.9741  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.18766   
## Sex 0.83278   
## Genotype:Sex 0.02752 \*   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.05125 .   
## Sex:Day 0.0000206 \*\*\*  
## Genotype:Sex:Day 0.46046   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.049756 0.000000000000001033  
## Genotype:Day 0.049756 0.000000000000001033  
## Sex:Day 0.049756 0.000000000000001033  
## Genotype:Sex:Day 0.049756 0.000000000000001033  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.55625 < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.55625 0.0960625 .   
## Sex:Day 0.55625 0.0008579 \*\*\*  
## Genotype:Sex:Day 0.55625 0.4339060   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6151007 4.621961e-80  
## Genotype:Day 0.6151007 8.820147e-02  
## Sex:Day 0.6151007 5.197779e-04  
## Genotype:Sex:Day 0.6151007 4.387914e-01

#### 3xTG Mice

summary(main.7month.anova$TG3x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1766333077 1 90358401 55 1075.1443  
## Genotype 8537 1 90358401 55 0.0052  
## Sex 1715333 1 90358401 55 1.0441  
## Genotype:Sex 18168 1 90358401 55 0.0111  
## Day 383958926 9 100222281 495 210.7090  
## Genotype:Day 283529 9 100222281 495 0.1556  
## Sex:Day 3198661 9 100222281 495 1.7554  
## Genotype:Sex:Day 1851317 9 100222281 495 1.0160  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.94279   
## Sex 0.31134   
## Genotype:Sex 0.91663   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.99777   
## Sex:Day 0.07431 .   
## Genotype:Sex:Day 0.42590   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0053527 0.00000000000000000000000000000000034342  
## Genotype:Day 0.0053527 0.00000000000000000000000000000000034342  
## Sex:Day 0.0053527 0.00000000000000000000000000000000034342  
## Genotype:Sex:Day 0.0053527 0.00000000000000000000000000000000034342  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.49259 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.49259 0.9695   
## Sex:Day 0.49259 0.1314   
## Genotype:Sex:Day 0.49259 0.4040   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5411274 1.573817e-89  
## Genotype:Day 0.5411274 9.764825e-01  
## Sex:Day 0.5411274 1.242823e-01  
## Genotype:Sex:Day 0.5411274 4.075515e-01

### Total Completed Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.7month.anova$APP$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 358069 1 6203.2 47 2712.9980  
## Genotype 71 1 6203.2 47 0.5415  
## Sex 8 1 6203.2 47 0.0640  
## Genotype:Sex 348 1 6203.2 47 2.6399  
## Day 5845 9 6737.1 423 40.7734  
## Genotype:Day 172 9 6737.1 423 1.2008  
## Sex:Day 302 9 6737.1 423 2.1036  
## Genotype:Sex:Day 86 9 6737.1 423 0.5999  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.46547   
## Sex 0.80141   
## Genotype:Sex 0.11090   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.29254   
## Sex:Day 0.02812 \*   
## Genotype:Sex:Day 0.79731   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

summary(main.7month.anova$TG5x$TotalTrials, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 450157 1 4714.5 58 5538.0182  
## Genotype 398 1 4714.5 58 4.8945  
## Sex 11 1 4714.5 58 0.1297  
## Genotype:Sex 41 1 4714.5 58 0.5019  
## Day 5659 9 7066.7 522 46.4435  
## Genotype:Day 497 9 7066.7 522 4.0793  
## Sex:Day 317 9 7066.7 522 2.5991  
## Genotype:Sex:Day 85 9 7066.7 522 0.6939  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.030893 \*   
## Sex 0.720042   
## Genotype:Sex 0.481516   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.00004451 \*\*\*  
## Sex:Day 0.006117 \*\*   
## Genotype:Sex:Day 0.714711   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.000038406 1.7961e-89  
## Genotype:Day 0.000038406 1.7961e-89  
## Sex:Day 0.000038406 1.7961e-89  
## Genotype:Sex:Day 0.000038406 1.7961e-89  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.41086 < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.41086 0.004238 \*\*   
## Sex:Day 0.41086 0.041398 \*   
## Genotype:Sex:Day 0.41086 0.585873   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4423123 0.0000000000000000000000000001635184  
## Genotype:Day 0.4423123 0.0033019333134599133591779995811066  
## Sex:Day 0.4423123 0.0372419685645056924849782831188350  
## Genotype:Sex:Day 0.4423123 0.5961818861964063298586324890493415

#### 3xTG Mice

summary(main.7month.anova$TG3x$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.7month.anova$TG3x$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 466003 1 2769.9 55 9253.2077  
## Genotype 28 1 2769.9 55 0.5659  
## Sex 13 1 2769.9 55 0.2638  
## Genotype:Sex 5 1 2769.9 55 0.1022  
## Day 6912 9 7972.5 495 47.6844  
## Genotype:Day 31 9 7972.5 495 0.2105  
## Sex:Day 216 9 7972.5 495 1.4887  
## Genotype:Sex:Day 36 9 7972.5 495 0.2510  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.4551   
## Sex 0.6096   
## Genotype:Sex 0.7504   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.9929   
## Sex:Day 0.1489   
## Genotype:Sex:Day 0.9864   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### Session Accuracy

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1832920 1 40295 47 2137.8998  
## Genotype 792 1 40295 47 0.9236  
## Sex 1448 1 40295 47 1.6888  
## Genotype:Sex 26 1 40295 47 0.0301  
## Day 236652 9 58960 423 188.6467  
## Genotype:Day 1348 9 58960 423 1.0746  
## Sex:Day 2099 9 58960 423 1.6736  
## Genotype:Sex:Day 1266 9 58960 423 1.0092  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.34144   
## Sex 0.20010   
## Genotype:Sex 0.86306   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.38029   
## Sex:Day 0.09309 .   
## Genotype:Sex:Day 0.43165   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.038345 0.0000000000028457  
## Genotype:Day 0.038345 0.0000000000028457  
## Sex:Day 0.038345 0.0000000000028457  
## Genotype:Sex:Day 0.038345 0.0000000000028457  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.54056 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.54056 0.3746   
## Sex:Day 0.54056 0.1438   
## Genotype:Sex:Day 0.54056 0.4119   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6105244 8.216136e-88  
## Genotype:Day 0.6105244 3.766310e-01  
## Sex:Day 0.6105244 1.344081e-01  
## Genotype:Sex:Day 0.6105244 4.163624e-01

#### 5xFAD Mice

summary(main.7month.anova$TG5x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2187873 1 67553 58 1878.4651  
## Genotype 676 1 67553 58 0.5803  
## Sex 5938 1 67553 58 5.0980  
## Genotype:Sex 3097 1 67553 58 2.6590  
## Day 196616 9 63600 522 179.3040  
## Genotype:Day 1628 9 63600 522 1.4842  
## Sex:Day 2325 9 63600 522 2.1202  
## Genotype:Sex:Day 2396 9 63600 522 2.1850  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.44928   
## Sex 0.02773 \*   
## Genotype:Sex 0.10839   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.15042   
## Sex:Day 0.02635 \*   
## Genotype:Sex:Day 0.02175 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.10115 0.000000001014  
## Genotype:Day 0.10115 0.000000001014  
## Sex:Day 0.10115 0.000000001014  
## Genotype:Sex:Day 0.10115 0.000000001014  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.61474 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.61474 0.18821   
## Sex:Day 0.61474 0.05599 .   
## Genotype:Sex:Day 0.61474 0.04917 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6870496 2.561667e-106  
## Genotype:Day 0.6870496 1.803882e-01  
## Sex:Day 0.6870496 4.847260e-02  
## Genotype:Sex:Day 0.6870496 4.206671e-02

#### 3xTG Mice

summary(main.7month.anova$TG3x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2589079 1 54653 55 2605.5193  
## Genotype 79 1 54653 55 0.0799  
## Sex 303 1 54653 55 0.3053  
## Genotype:Sex 25 1 54653 55 0.0251  
## Day 273273 9 63505 495 236.6738  
## Genotype:Day 1202 9 63505 495 1.0409  
## Sex:Day 2083 9 63505 495 1.8042  
## Genotype:Sex:Day 1578 9 63505 495 1.3667  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.77846   
## Sex 0.58282   
## Genotype:Sex 0.87459   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.40598   
## Sex:Day 0.06503 .   
## Genotype:Sex:Day 0.20035   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.029044 0.00000000000000000083581  
## Genotype:Day 0.029044 0.00000000000000000083581  
## Sex:Day 0.029044 0.00000000000000000083581  
## Genotype:Sex:Day 0.029044 0.00000000000000000083581  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.51413 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.51413 0.3916   
## Sex:Day 0.51413 0.1181   
## Genotype:Sex:Day 0.51413 0.2406   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5671553 2.269176e-99  
## Genotype:Day 0.5671553 3.944290e-01  
## Sex:Day 0.5671553 1.104934e-01  
## Genotype:Sex:Day 0.5671553 2.359862e-01

### Session Correction Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 405816 1 27737 44 643.7666  
## Genotype 5356 1 27737 44 8.4964  
## Sex 512 1 27737 44 0.8122  
## Genotype:Sex 1474 1 27737 44 2.3379  
## Day 279165 9 55032 396 223.2038  
## Genotype:Day 1599 9 55032 396 1.2781  
## Sex:Day 2506 9 55032 396 2.0040  
## Genotype:Sex:Day 3829 9 55032 396 3.0613  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.005578 \*\*   
## Sex 0.372372   
## Genotype:Sex 0.133418   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.246847   
## Sex:Day 0.037664 \*   
## Genotype:Sex:Day 0.001470 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.01403 0.000000000000000032198  
## Genotype:Day 0.01403 0.000000000000000032198  
## Sex:Day 0.01403 0.000000000000000032198  
## Genotype:Sex:Day 0.01403 0.000000000000000032198  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.56243 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.56243 0.27394   
## Sex:Day 0.56243 0.07823 .   
## Genotype:Sex:Day 0.56243 0.01047 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6442855 4.614400e-97  
## Genotype:Day 0.6442855 2.689840e-01  
## Sex:Day 0.6442855 6.801436e-02  
## Genotype:Sex:Day 0.6442855 7.207338e-03

#### 5xFAD Mice

summary(main.7month.anova$TG5x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 497483 1 62661 58 460.4751  
## Genotype 4042 1 62661 58 3.7418  
## Sex 8430 1 62661 58 7.8028  
## Genotype:Sex 2808 1 62661 58 2.5993  
## Day 270117 9 70099 522 223.4944  
## Genotype:Day 1850 9 70099 522 1.5305  
## Sex:Day 2589 9 70099 522 2.1418  
## Genotype:Sex:Day 870 9 70099 522 0.7200  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.057952 .   
## Sex 0.007057 \*\*   
## Genotype:Sex 0.112340   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.133906   
## Sex:Day 0.024728 \*   
## Genotype:Sex:Day 0.690800   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.006742 0.000000000000000000000000000000000091187  
## Genotype:Day 0.006742 0.000000000000000000000000000000000091187  
## Sex:Day 0.006742 0.000000000000000000000000000000000091187  
## Genotype:Sex:Day 0.006742 0.000000000000000000000000000000000091187  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.45978 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.45978 0.19212   
## Sex:Day 0.45978 0.07402 .   
## Genotype:Sex:Day 0.45978 0.58357   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4995173 1.057727e-87  
## Genotype:Day 0.4995173 1.870994e-01  
## Sex:Day 0.4995173 6.810530e-02  
## Genotype:Sex:Day 0.4995173 5.946142e-01

#### 3xTG Mice

summary(main.7month.anova$TG3x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 327218 1 30189 55 596.1417  
## Genotype 37 1 30189 55 0.0674  
## Sex 96 1 30189 55 0.1742  
## Genotype:Sex 0 1 30189 55 0.0008  
## Day 299981 9 70339 495 234.5639  
## Genotype:Day 785 9 70339 495 0.6136  
## Sex:Day 1635 9 70339 495 1.2781  
## Genotype:Sex:Day 1677 9 70339 495 1.3113  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.7961   
## Sex 0.6780   
## Genotype:Sex 0.9776   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.7858   
## Sex:Day 0.2460   
## Genotype:Sex:Day 0.2280   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.00057603 6.8268e-56  
## Genotype:Day 0.00057603 6.8268e-56  
## Sex:Day 0.00057603 6.8268e-56  
## Genotype:Sex:Day 0.00057603 6.8268e-56  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.43195 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.43195 0.6487   
## Sex:Day 0.43195 0.2801   
## Genotype:Sex:Day 0.43195 0.2675   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4689051 2.848343e-82  
## Genotype:Day 0.4689051 6.619459e-01  
## Sex:Day 0.4689051 2.782979e-01  
## Genotype:Sex:Day 0.4689051 2.651374e-01

### Correct Response Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2091.64 1 172.44 34 412.4177  
## Genotype 91.15 1 172.44 34 17.9733  
## Sex 25.73 1 172.44 34 5.0735  
## Genotype:Sex 54.37 1 172.44 34 10.7208  
## Day 161.59 9 235.72 306 23.3082  
## Genotype:Day 22.32 9 235.72 306 3.2201  
## Sex:Day 20.75 9 235.72 306 2.9933  
## Genotype:Sex:Day 35.19 9 235.72 306 5.0765  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0001622 \*\*\*  
## Sex 0.0308619 \*   
## Genotype:Sex 0.0024391 \*\*   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.0009530 \*\*\*  
## Sex:Day 0.0019589 \*\*   
## Genotype:Sex:Day 0.000002099 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.00021839 0.000000000000000000000000000000066931  
## Genotype:Day 0.00021839 0.000000000000000000000000000000066931  
## Sex:Day 0.00021839 0.000000000000000000000000000000066931  
## Genotype:Sex:Day 0.00021839 0.000000000000000000000000000000066931  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.38983 0.0000000000003714 \*\*\*  
## Genotype:Day 0.38983 0.019337 \*   
## Sex:Day 0.38983 0.026689 \*   
## Genotype:Sex:Day 0.38983 0.001383 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.440176 0.00000000000001440666  
## Genotype:Day 0.440176 0.01495951904381020818  
## Sex:Day 0.440176 0.02135190860101834898  
## Genotype:Sex:Day 0.440176 0.00080007992229471432

#### 5xFAD Mice

summary(main.7month.anova$TG5x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2663.86 1 212.51 51 639.2838  
## Genotype 23.85 1 212.51 51 5.7231  
## Sex 0.10 1 212.51 51 0.0232  
## Genotype:Sex 17.04 1 212.51 51 4.0885  
## Day 173.98 9 175.23 459 50.6351  
## Genotype:Day 3.13 9 175.23 459 0.9104  
## Sex:Day 12.82 9 175.23 459 3.7321  
## Genotype:Sex:Day 5.73 9 175.23 459 1.6691  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0204662 \*   
## Sex 0.8794240   
## Genotype:Sex 0.0484359 \*   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.5157698   
## Sex:Day 0.0001529 \*\*\*  
## Genotype:Sex:Day 0.0938952 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Day 0.002347  
## Genotype:Day 0.002347  
## Sex:Day 0.002347  
## Genotype:Sex:Day 0.002347  
## p-value  
## Day 0.00000000000000000000000000000000000014998  
## Genotype:Day 0.00000000000000000000000000000000000014998  
## Sex:Day 0.00000000000000000000000000000000000014998  
## Genotype:Sex:Day 0.00000000000000000000000000000000000014998  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.49389 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.49389 0.46638   
## Sex:Day 0.49389 0.00424 \*\*   
## Genotype:Sex:Day 0.49389 0.15116   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5468861 0.00000000000000000000000000000000000863777  
## Genotype:Day 0.5468861 0.47363376915904986663719000716810114681721  
## Sex:Day 0.5468861 0.00297365393834857303506646886148701014463  
## Genotype:Sex:Day 0.5468861 0.14366314392550616485522141374531202018261

#### 3xTG Mice

summary(main.7month.anova$TG3x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2301.39 1 116.47 44 869.3812  
## Genotype 1.98 1 116.47 44 0.7484  
## Sex 0.18 1 116.47 44 0.0665  
## Genotype:Sex 9.07 1 116.47 44 3.4257  
## Day 131.05 9 131.24 396 43.9368  
## Genotype:Day 2.36 9 131.24 396 0.7911  
## Sex:Day 11.79 9 131.24 396 3.9520  
## Genotype:Sex:Day 2.28 9 131.24 396 0.7659  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.39168   
## Sex 0.79764   
## Genotype:Sex 0.07091 .   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.62478   
## Sex:Day 0.00007728 \*\*\*  
## Genotype:Sex:Day 0.64815   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Day 0.00071668  
## Genotype:Day 0.00071668  
## Sex:Day 0.00071668  
## Genotype:Sex:Day 0.00071668  
## p-value  
## Day 0.000000000000000000000000000000000000013765  
## Genotype:Day 0.000000000000000000000000000000000000013765  
## Sex:Day 0.000000000000000000000000000000000000013765  
## Genotype:Sex:Day 0.000000000000000000000000000000000000013765  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.37276 < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.37276 0.513141   
## Sex:Day 0.37276 0.007264 \*\*   
## Genotype:Sex:Day 0.37276 0.528132   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.4072342 0.00000000000000000000001330254  
## Genotype:Day 0.4072342 0.52281522002345592881056290935  
## Sex:Day 0.4072342 0.00561623831444664316225878764  
## Genotype:Sex:Day 0.4072342 0.53847878311921282268315280817

### Reward Collection Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.7month.anova$APP$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 484.83 1 4.6035 40 4212.7543  
## Genotype 0.48 1 4.6035 40 4.1848  
## Sex 0.02 1 4.6035 40 0.1313  
## Genotype:Sex 0.08 1 4.6035 40 0.7354  
## Day 1.04 9 3.9020 360 10.6617  
## Genotype:Day 0.08 9 3.9020 360 0.8066  
## Sex:Day 0.32 9 3.9020 360 3.2904  
## Genotype:Sex:Day 0.07 9 3.9020 360 0.6703  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0474017 \*   
## Sex 0.7189969   
## Genotype:Sex 0.3962403   
## Day 0.00000000000001092 \*\*\*  
## Genotype:Day 0.6103941   
## Sex:Day 0.0007189 \*\*\*  
## Genotype:Sex:Day 0.7358033   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.040286 0.000000012875  
## Genotype:Day 0.040286 0.000000012875  
## Sex:Day 0.040286 0.000000012875  
## Genotype:Sex:Day 0.040286 0.000000012875  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.59843 0.000000001227 \*\*\*  
## Genotype:Day 0.59843 0.554052   
## Sex:Day 0.59843 0.005635 \*\*   
## Genotype:Sex:Day 0.59843 0.657481   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.7024103 0.00000000005973718  
## Genotype:Day 0.7024103 0.57127078220890470  
## Sex:Day 0.7024103 0.00328405869737612  
## Genotype:Sex:Day 0.7024103 0.68162501765248673

#### 5xFAD Mice

summary(main.7month.anova$TG5x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 582.97 1 12.4786 47 2195.7148  
## Genotype 9.03 1 12.4786 47 33.9990  
## Sex 0.51 1 12.4786 47 1.9297  
## Genotype:Sex 0.58 1 12.4786 47 2.2032  
## Day 0.57 9 7.9042 423 3.3682  
## Genotype:Day 0.21 9 7.9042 423 1.2619  
## Sex:Day 0.25 9 7.9042 423 1.5125  
## Genotype:Sex:Day 0.17 9 7.9042 423 1.0324  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0000004848 \*\*\*  
## Sex 0.1713345   
## Genotype:Sex 0.1443976   
## Day 0.0005299 \*\*\*  
## Genotype:Day 0.2557158   
## Sex:Day 0.1409040   
## Genotype:Sex:Day 0.4130092   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.020922 0.00000000000000018105  
## Genotype:Day 0.020922 0.00000000000000018105  
## Sex:Day 0.020922 0.00000000000000018105  
## Genotype:Sex:Day 0.020922 0.00000000000000018105  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.53899 0.006432 \*\*  
## Genotype:Day 0.53899 0.282059   
## Sex:Day 0.53899 0.188597   
## Genotype:Sex:Day 0.53899 0.398260   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6085325 0.004383619  
## Genotype:Day 0.6085325 0.278327384  
## Sex:Day 0.6085325 0.180416733  
## Genotype:Sex:Day 0.6085325 0.401865227

#### 3xTG Mice

summary(main.7month.anova$TG3x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 691.88 1 10.5874 47 3071.4314  
## Genotype 0.04 1 10.5874 47 0.1995  
## Sex 3.18 1 10.5874 47 14.1184  
## Genotype:Sex 0.35 1 10.5874 47 1.5704  
## Day 0.54 9 5.2929 423 4.7717  
## Genotype:Day 0.21 9 5.2929 423 1.8937  
## Sex:Day 0.30 9 5.2929 423 2.6274  
## Genotype:Sex:Day 0.04 9 5.2929 423 0.3384  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.6571734   
## Sex 0.0004734 \*\*\*  
## Genotype:Sex 0.2163491   
## Day 0.000004528 \*\*\*  
## Genotype:Day 0.0511798 .   
## Sex:Day 0.0057649 \*\*   
## Genotype:Sex:Day 0.9618656   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.12123 0.000029766  
## Genotype:Day 0.12123 0.000029766  
## Sex:Day 0.12123 0.000029766  
## Genotype:Sex:Day 0.12123 0.000029766  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.70633 0.00008025 \*\*\*  
## Genotype:Day 0.70633 0.07734 .   
## Sex:Day 0.70633 0.01495 \*   
## Genotype:Sex:Day 0.70633 0.92395   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.828718 0.00002409802  
## Genotype:Day 0.828718 0.06499875617  
## Sex:Day 0.828718 0.01001893960  
## Genotype:Sex:Day 0.828718 0.94325655924

## PAL Training Data: 10 Months

### Total Session Length

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1503133961 1 84905580 36 637.3294  
## Genotype 1452732 1 84905580 36 0.6160  
## Sex 124560 1 84905580 36 0.0528  
## Genotype:Sex 1095780 1 84905580 36 0.4646  
## Day 127743447 9 65289687 324 70.4363  
## Genotype:Day 2342770 9 65289687 324 1.2918  
## Sex:Day 2680951 9 65289687 324 1.4782  
## Genotype:Sex:Day 2729813 9 65289687 324 1.5052  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.4377   
## Sex 0.8195   
## Genotype:Sex 0.4998   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.2402   
## Sex:Day 0.1547   
## Genotype:Sex:Day 0.1448   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.048368 0.0000044471  
## Genotype:Day 0.048368 0.0000044471  
## Sex:Day 0.048368 0.0000044471  
## Genotype:Sex:Day 0.048368 0.0000044471  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.57041 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.57041 0.2684   
## Sex:Day 0.57041 0.1974   
## Genotype:Sex:Day 0.57041 0.1886   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Day 0.6765546  
## Genotype:Day 0.6765546  
## Sex:Day 0.6765546  
## Genotype:Sex:Day 0.6765546  
## Pr(>F[HF])  
## Day 0.0000000000000000000000000000000000000000000000007979826  
## Genotype:Day 0.2614492315788610743432229810423450544476509094238281250  
## Sex:Day 0.1857489470335037806680844596485258080065250396728515625  
## Genotype:Sex:Day 0.1765328818712927072542839823654503561556339263916015625

#### 5xFAD Mice

summary(main.10month.anova$TG5x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2581481236 1 97997061 51 1343.4642  
## Genotype 10918427 1 97997061 51 5.6822  
## Sex 2451941 1 97997061 51 1.2760  
## Genotype:Sex 2387592 1 97997061 51 1.2426  
## Day 195078853 9 103439892 459 96.1817  
## Genotype:Day 2897272 9 103439892 459 1.4285  
## Sex:Day 1882842 9 103439892 459 0.9283  
## Genotype:Sex:Day 1376068 9 103439892 459 0.6785  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.0209 \*   
## Sex 0.2639   
## Genotype:Sex 0.2702   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.1730   
## Sex:Day 0.5000   
## Genotype:Sex:Day 0.7287   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.088657 0.000000025474  
## Genotype:Day 0.088657 0.000000025474  
## Sex:Day 0.088657 0.000000025474  
## Genotype:Sex:Day 0.088657 0.000000025474  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.62722 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.62722 0.2071   
## Sex:Day 0.62722 0.4709   
## Genotype:Sex:Day 0.62722 0.6581   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.7142116 4.678025e-72  
## Genotype:Day 0.7142116 1.985675e-01  
## Sex:Day 0.7142116 4.790842e-01  
## Genotype:Sex:Day 0.7142116 6.774909e-01

#### 3xTG Mice

summary(main.10month.anova$TG3x$TotalTime, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1963057591 1 74846481 50 1311.3894  
## Genotype 973368 1 74846481 50 0.6502  
## Sex 6856099 1 74846481 50 4.5801  
## Genotype:Sex 14145 1 74846481 50 0.0094  
## Day 240292817 9 86366397 450 139.1124  
## Genotype:Day 4517270 9 86366397 450 2.6152  
## Sex:Day 1537731 9 86366397 450 0.8902  
## Genotype:Sex:Day 1485143 9 86366397 450 0.8598  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.423845   
## Sex 0.037248 \*   
## Genotype:Sex 0.922951   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.005934 \*\*   
## Sex:Day 0.533824   
## Genotype:Sex:Day 0.561382   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.034803 0.000000000000016121  
## Genotype:Day 0.034803 0.000000000000016121  
## Sex:Day 0.034803 0.000000000000016121  
## Genotype:Sex:Day 0.034803 0.000000000000016121  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.58774 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.58774 0.02256 \*   
## Sex:Day 0.58774 0.49254   
## Genotype:Sex:Day 0.58774 0.51372   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6654489 1.906904e-83  
## Genotype:Day 0.6654489 1.746159e-02  
## Sex:Day 0.6654489 5.021455e-01  
## Genotype:Sex:Day 0.6654489 5.247032e-01

### Total Completed Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.10month.anova$APP$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 240207 1 7936.6 36 1089.5659  
## Genotype 225 1 7936.6 36 1.0198  
## Sex 15 1 7936.6 36 0.0695  
## Genotype:Sex 90 1 7936.6 36 0.4104  
## Day 1563 9 3133.8 324 17.9545  
## Genotype:Day 39 9 3133.8 324 0.4477  
## Sex:Day 195 9 3133.8 324 2.2419  
## Genotype:Sex:Day 191 9 3133.8 324 2.1959  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.31931   
## Sex 0.79361   
## Genotype:Sex 0.52580   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.90824   
## Sex:Day 0.01930 \*   
## Genotype:Sex:Day 0.02208 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

summary(main.10month.anova$TG5x$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.10month.anova$TG5x$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 429978 1 6199.2 51 3537.3918  
## Genotype 517 1 6199.2 51 4.2502  
## Sex 147 1 6199.2 51 1.2078  
## Genotype:Sex 158 1 6199.2 51 1.2992  
## Day 2724 9 5447.9 459 25.5049  
## Genotype:Day 260 9 5447.9 459 2.4294  
## Sex:Day 22 9 5447.9 459 0.2100  
## Genotype:Sex:Day 45 9 5447.9 459 0.4250  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.04436 \*   
## Sex 0.27693   
## Genotype:Sex 0.25968   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.01053 \*   
## Sex:Day 0.99294   
## Genotype:Sex:Day 0.92176   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 3xTG Mice

summary(main.10month.anova$TG3x$TotalTrials, multivariate=FALSE)

## Warning in summary.Anova.mlm(main.10month.anova$TG3x$TotalTrials, multivariate = FALSE): Singular error SSP matrix:  
## non-sphericity test and corrections not available

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 451543 1 815.36 50 27689.8719  
## Genotype 65 1 815.36 50 3.9913  
## Sex 3 1 815.36 50 0.2127  
## Genotype:Sex 0 1 815.36 50 0.0111  
## Day 2115 9 3039.24 450 34.7949  
## Genotype:Day 142 9 3039.24 450 2.3383  
## Sex:Day 19 9 3039.24 450 0.3084  
## Genotype:Sex:Day 5 9 3039.24 450 0.0810  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.05119 .   
## Sex 0.64663   
## Genotype:Sex 0.91648   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.01392 \*   
## Sex:Day 0.97210   
## Genotype:Sex:Day 0.99984   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### Session Accuracy

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 769092 1 38820 36 713.2313  
## Genotype 358 1 38820 36 0.3323  
## Sex 326 1 38820 36 0.3024  
## Genotype:Sex 15 1 38820 36 0.0136  
## Day 60881 9 44277 324 49.4998  
## Genotype:Day 492 9 44277 324 0.4000  
## Sex:Day 919 9 44277 324 0.7475  
## Genotype:Sex:Day 1109 9 44277 324 0.9014  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.5679   
## Sex 0.5858   
## Genotype:Sex 0.9078   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.9346   
## Sex:Day 0.6652   
## Genotype:Sex:Day 0.5243   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.057811 0.000023603  
## Genotype:Day 0.057811 0.000023603  
## Sex:Day 0.057811 0.000023603  
## Genotype:Sex:Day 0.057811 0.000023603  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.58065 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.58065 0.8559   
## Sex:Day 0.58065 0.5945   
## Genotype:Sex:Day 0.58065 0.4847   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6908927 0.000000000000000000000000000000000000002802547  
## Genotype:Day 0.6908927 0.884089110992027027435824493295513093471527100  
## Sex:Day 0.6908927 0.616624778472601775547445868141949176788330078  
## Genotype:Sex:Day 0.6908927 0.497353207175562861408479875535704195499420166

#### 5xFAD Mice

summary(main.10month.anova$TG5x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1330969 1 36196 51 1875.3247  
## Genotype 2231 1 36196 51 3.1429  
## Sex 520 1 36196 51 0.7322  
## Genotype:Sex 1 1 36196 51 0.0009  
## Day 81242 9 64816 459 63.9245  
## Genotype:Day 1825 9 64816 459 1.4359  
## Sex:Day 619 9 64816 459 0.4867  
## Genotype:Sex:Day 1064 9 64816 459 0.8368  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.08223 .   
## Sex 0.39617   
## Genotype:Sex 0.97621   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.16990   
## Sex:Day 0.88372   
## Genotype:Sex:Day 0.58241   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.075682 0.0000000021612  
## Genotype:Day 0.075682 0.0000000021612  
## Sex:Day 0.075682 0.0000000021612  
## Genotype:Sex:Day 0.075682 0.0000000021612  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.57902 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.57902 0.2093   
## Sex:Day 0.57902 0.7935   
## Genotype:Sex:Day 0.57902 0.5286   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Day 0.6527039  
## Genotype:Day 0.6527039  
## Sex:Day 0.6527039  
## Genotype:Sex:Day 0.6527039  
## Pr(>F[HF])  
## Day 0.00000000000000000000000000000000000000000000000004009196  
## Genotype:Day 0.20179006174520502936431398666172754019498825073242187500  
## Sex:Day 0.81450026423452848156614436447853222489356994628906250000  
## Genotype:Sex:Day 0.54013482140217261573411633435171097517013549804687500000

#### 3xTG Mice

summary(main.10month.anova$TG3x$Accuracy, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1622361 1 54016 50 1501.7432  
## Genotype 0 1 54016 50 0.0004  
## Sex 4151 1 54016 50 3.8420  
## Genotype:Sex 287 1 54016 50 0.2659  
## Day 131154 9 58655 450 111.8002  
## Genotype:Day 2007 9 58655 450 1.7107  
## Sex:Day 415 9 58655 450 0.3537  
## Genotype:Sex:Day 1026 9 58655 450 0.8743  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.98494   
## Sex 0.05557 .   
## Genotype:Sex 0.60834   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.08414 .   
## Sex:Day 0.95599   
## Genotype:Sex:Day 0.54821   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.050614 0.0000000000085606  
## Genotype:Day 0.050614 0.0000000000085606  
## Sex:Day 0.050614 0.0000000000085606  
## Genotype:Sex:Day 0.050614 0.0000000000085606  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.54229 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.54229 0.1345   
## Sex:Day 0.54229 0.8757   
## Genotype:Sex:Day 0.54229 0.4969   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.608049 2.908298e-67  
## Genotype:Day 0.608049 1.255243e-01  
## Sex:Day 0.608049 8.938386e-01  
## Genotype:Sex:Day 0.608049 5.063958e-01

### Session Correction Trials

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 433822 1 31727 36 492.2490  
## Genotype 131 1 31727 36 0.1488  
## Sex 112 1 31727 36 0.1276  
## Genotype:Sex 112 1 31727 36 0.1276  
## Day 124832 9 43490 324 103.3335  
## Genotype:Day 1033 9 43490 324 0.8553  
## Sex:Day 3060 9 43490 324 2.5328  
## Genotype:Sex:Day 1824 9 43490 324 1.5096  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.701912   
## Sex 0.723023   
## Genotype:Sex 0.723023   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.565723   
## Sex:Day 0.008075 \*\*   
## Genotype:Sex:Day 0.143180   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.092858 0.0013537  
## Genotype:Day 0.092858 0.0013537  
## Sex:Day 0.092858 0.0013537  
## Genotype:Sex:Day 0.092858 0.0013537  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.65593 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.65593 0.52725   
## Sex:Day 0.65593 0.02241 \*   
## Genotype:Sex:Day 0.65593 0.17734   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.7990037 3.292999e-72  
## Genotype:Day 0.7990037 5.450654e-01  
## Sex:Day 0.7990037 1.459429e-02  
## Genotype:Sex:Day 0.7990037 1.621120e-01

#### 5xFAD Mice

summary(main.10month.anova$TG5x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 721755 1 45104 51 816.0969  
## Genotype 3 1 45104 51 0.0033  
## Sex 98 1 45104 51 0.1107  
## Genotype:Sex 1 1 45104 51 0.0010  
## Day 166867 9 66624 459 127.7343  
## Genotype:Day 527 9 66624 459 0.4033  
## Sex:Day 1673 9 66624 459 1.2806  
## Genotype:Sex:Day 2164 9 66624 459 1.6564  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.95413   
## Sex 0.74067   
## Genotype:Sex 0.97523   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.93333   
## Sex:Day 0.24488   
## Genotype:Sex:Day 0.09711 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.031412 0.00000000000000075885  
## Genotype:Day 0.031412 0.00000000000000075885  
## Sex:Day 0.031412 0.00000000000000075885  
## Genotype:Sex:Day 0.031412 0.00000000000000075885  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.52197 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.52197 0.8354   
## Sex:Day 0.52197 0.2746   
## Genotype:Sex:Day 0.52197 0.1503   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5813985 2.377121e-70  
## Genotype:Day 0.5813985 8.541541e-01  
## Sex:Day 0.5813985 2.711019e-01  
## Genotype:Sex:Day 0.5813985 1.421931e-01

#### 3xTG Mice

summary(main.10month.anova$TG3x$Corrections, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 553315 1 38103 50 726.0786  
## Genotype 51 1 38103 50 0.0676  
## Sex 1411 1 38103 50 1.8519  
## Genotype:Sex 206 1 38103 50 0.2704  
## Day 242218 9 58428 450 207.2800  
## Genotype:Day 1530 9 58428 450 1.3090  
## Sex:Day 713 9 58428 450 0.6105  
## Genotype:Sex:Day 1213 9 58428 450 1.0378  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.7960   
## Sex 0.1797   
## Genotype:Sex 0.6054   
## Day <0.0000000000000002 \*\*\*  
## Genotype:Day 0.2296   
## Sex:Day 0.7884   
## Genotype:Sex:Day 0.4086   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.012233 0.00000000000000000000012203  
## Genotype:Day 0.012233 0.00000000000000000000012203  
## Sex:Day 0.012233 0.00000000000000000000012203  
## Genotype:Sex:Day 0.012233 0.00000000000000000000012203  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.49552 <0.0000000000000002 \*\*\*  
## Genotype:Day 0.49552 0.2647   
## Sex:Day 0.49552 0.6733   
## Genotype:Sex:Day 0.49552 0.3924   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5500505 6.191241e-86  
## Genotype:Day 0.5500505 2.609718e-01  
## Sex:Day 0.5500505 6.903322e-01  
## Genotype:Sex:Day 0.5500505 3.956282e-01

### Correct Response Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1630.27 1 119.71 31 422.1874  
## Genotype 12.14 1 119.71 31 3.1449  
## Sex 0.32 1 119.71 31 0.0817  
## Genotype:Sex 32.20 1 119.71 31 8.3387  
## Day 37.88 9 110.93 279 10.5857  
## Genotype:Day 10.35 9 110.93 279 2.8913  
## Sex:Day 5.65 9 110.93 279 1.5780  
## Genotype:Sex:Day 9.11 9 110.93 279 2.5451  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.085990 .   
## Sex 0.776946   
## Genotype:Sex 0.007015 \*\*   
## Day 0.00000000000004162 \*\*\*  
## Genotype:Day 0.002771 \*\*   
## Sex:Day 0.121438   
## Genotype:Sex:Day 0.008010 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.018982 0.00000018305  
## Genotype:Day 0.018982 0.00000018305  
## Sex:Day 0.018982 0.00000018305  
## Genotype:Sex:Day 0.018982 0.00000018305  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.55756 0.000000008742 \*\*\*  
## Genotype:Day 0.55756 0.01578 \*   
## Sex:Day 0.55756 0.16913   
## Genotype:Sex:Day 0.55756 0.03014 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.6781474 0.0000000003053739  
## Genotype:Day 0.6781474 0.0097437701313076  
## Sex:Day 0.6781474 0.1543219027162584  
## Genotype:Sex:Day 0.6781474 0.0208629255327096

#### 5xFAD Mice

summary(main.10month.anova$TG5x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 1941.19 1 132.793 44 643.1974  
## Genotype 120.52 1 132.793 44 39.9321  
## Sex 2.49 1 132.793 44 0.8252  
## Genotype:Sex 0.03 1 132.793 44 0.0115  
## Day 36.39 9 72.619 396 22.0515  
## Genotype:Day 3.04 9 72.619 396 1.8394  
## Sex:Day 0.35 9 72.619 396 0.2102  
## Genotype:Sex:Day 1.70 9 72.619 396 1.0283  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0000001145 \*\*\*  
## Sex 0.36862   
## Genotype:Sex 0.91518   
## Day < 0.00000000000000022 \*\*\*  
## Genotype:Day 0.05973 .   
## Sex:Day 0.99290   
## Genotype:Sex:Day 0.41647   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.0084211 0.000000000000000000010894  
## Genotype:Day 0.0084211 0.000000000000000000010894  
## Sex:Day 0.0084211 0.000000000000000000010894  
## Genotype:Sex:Day 0.0084211 0.000000000000000000010894  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.49028 0.0000000000000004657 \*\*\*  
## Genotype:Day 0.49028 0.1160   
## Sex:Day 0.49028 0.9446   
## Genotype:Sex:Day 0.49028 0.3977   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.5516987 0.000000000000000008784309  
## Genotype:Day 0.5516987 0.106818406337129523375751  
## Sex:Day 0.5516987 0.957265893700446790504088  
## Genotype:Sex:Day 0.5516987 0.401593619347904384753178

#### 3xTG Mice

summary(main.10month.anova$TG3x$CorrectLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 2342.04 1 209.007 45 504.2494  
## Genotype 10.67 1 209.007 45 2.2965  
## Sex 1.49 1 209.007 45 0.3206  
## Genotype:Sex 17.84 1 209.007 45 3.8416  
## Day 51.95 9 92.138 405 25.3737  
## Genotype:Day 2.09 9 92.138 405 1.0219  
## Sex:Day 1.86 9 92.138 405 0.9084  
## Genotype:Sex:Day 5.14 9 92.138 405 2.5109  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.13666   
## Sex 0.57408   
## Genotype:Sex 0.05620 .   
## Day < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.42153   
## Sex:Day 0.51776   
## Genotype:Sex:Day 0.00833 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.011341 0.00000000000000000020928  
## Genotype:Day 0.011341 0.00000000000000000020928  
## Sex:Day 0.011341 0.00000000000000000020928  
## Genotype:Sex:Day 0.011341 0.00000000000000000020928  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.45828 < 0.0000000000000002 \*\*\*  
## Genotype:Day 0.45828 0.39858   
## Sex:Day 0.45828 0.46252   
## Genotype:Sex:Day 0.45828 0.04163 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.510301 0.0000000000000000008297643  
## Genotype:Day 0.510301 0.4025583393068153936766862  
## Sex:Day 0.510301 0.4702800028254768838209543  
## Genotype:Sex:Day 0.510301 0.0354968877774294241933539

### Reward Collection Latency

This ANOVA was a 10 (Sessions) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

summary(main.10month.anova$APP$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 230.718 1 4.7772 29 1400.5840  
## Genotype 0.068 1 4.7772 29 0.4114  
## Sex 0.047 1 4.7772 29 0.2825  
## Genotype:Sex 0.184 1 4.7772 29 1.1168  
## Day 0.058 9 4.4811 261 0.3752  
## Genotype:Day 0.024 9 4.4811 261 0.1557  
## Sex:Day 0.133 9 4.4811 261 0.8638  
## Genotype:Sex:Day 0.050 9 4.4811 261 0.3241  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.5263   
## Sex 0.5991   
## Genotype:Sex 0.2993   
## Day 0.9463   
## Genotype:Day 0.9977   
## Sex:Day 0.5582   
## Genotype:Sex:Day 0.9667   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.043285 0.00068626  
## Genotype:Day 0.043285 0.00068626  
## Sex:Day 0.043285 0.00068626  
## Genotype:Sex:Day 0.043285 0.00068626  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])  
## Day 0.66407 0.8935  
## Genotype:Day 0.66407 0.9875  
## Sex:Day 0.66407 0.5225  
## Genotype:Sex:Day 0.66407 0.9232  
##   
## HF eps Pr(>F[HF])  
## Day 0.8556399 0.9284128  
## Genotype:Day 0.8556399 0.9953143  
## Sex:Day 0.8556399 0.5444522  
## Genotype:Sex:Day 0.8556399 0.9526079

#### 5xFAD Mice

summary(main.10month.anova$TG5x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 685.65 1 16.3200 49 2058.6166  
## Genotype 26.20 1 16.3200 49 78.6679  
## Sex 1.90 1 16.3200 49 5.6946  
## Genotype:Sex 2.97 1 16.3200 49 8.9079  
## Day 0.17 9 6.9272 441 1.1741  
## Genotype:Day 0.06 9 6.9272 441 0.4126  
## Sex:Day 0.25 9 6.9272 441 1.7899  
## Genotype:Sex:Day 0.08 9 6.9272 441 0.6001  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.000000000009234 \*\*\*  
## Sex 0.02092 \*   
## Genotype:Sex 0.00442 \*\*   
## Day 0.30966   
## Genotype:Day 0.92845   
## Sex:Day 0.06799 .   
## Genotype:Sex:Day 0.79712   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.033637 0.000000000000031361  
## Genotype:Day 0.033637 0.000000000000031361  
## Sex:Day 0.033637 0.000000000000031361  
## Genotype:Sex:Day 0.033637 0.000000000000031361  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])  
## Day 0.60299 0.3215  
## Genotype:Day 0.60299 0.8539  
## Sex:Day 0.60299 0.1090  
## Genotype:Sex:Day 0.60299 0.7135  
##   
## HF eps Pr(>F[HF])  
## Day 0.6868309 0.3194931  
## Genotype:Day 0.6868309 0.8752670  
## Sex:Day 0.6868309 0.0984479  
## Genotype:Sex:Day 0.6868309 0.7351414

#### 3xTG Mice

summary(main.10month.anova$TG3x$RewardLat, multivariate=FALSE)

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 685.03 1 15.0187 48 2189.3775  
## Genotype 0.24 1 15.0187 48 0.7515  
## Sex 0.96 1 15.0187 48 3.0639  
## Genotype:Sex 0.00 1 15.0187 48 0.0000  
## Day 0.20 9 5.1569 432 1.8506  
## Genotype:Day 0.10 9 5.1569 432 0.9456  
## Sex:Day 0.07 9 5.1569 432 0.6222  
## Genotype:Sex:Day 0.09 9 5.1569 432 0.8497  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.39033   
## Sex 0.08644 .   
## Genotype:Sex 0.99701   
## Day 0.05763 .   
## Genotype:Day 0.48506   
## Sex:Day 0.77831   
## Genotype:Sex:Day 0.57059   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Day 0.060633 0.0000000010643  
## Genotype:Day 0.060633 0.0000000010643  
## Sex:Day 0.060633 0.0000000010643  
## Genotype:Sex:Day 0.060633 0.0000000010643  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Day 0.63589 0.09309 .  
## Genotype:Day 0.63589 0.45996   
## Sex:Day 0.63589 0.70480   
## Genotype:Sex:Day 0.63589 0.52812   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Day 0.731753 0.08186991  
## Genotype:Day 0.731753 0.46790099  
## Sex:Day 0.731753 0.72760736  
## Genotype:Sex:Day 0.731753 0.54110307