Weston PAL 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) 2652.73 1 121.9413 0.00000000000002125 \*\*\*  
## Genotype 674.85 1 31.0215 0.00000135280308005 \*\*\*  
## Sex 23.27 1 1.0697 0.3065   
## Genotype:Sex 9.62 1 0.4423 0.5094   
## Residuals 978.94 45   
## ---  
## 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) 1426.37 1 133.3445 < 0.00000000000000022 \*\*\*  
## Genotype 94.69 1 8.8520 0.004263 \*\*   
## Sex 3.34 1 0.3124 0.578347   
## Genotype:Sex 6.75 1 0.6313 0.430107   
## Residuals 620.42 58   
## ---  
## 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) 1147.55 1 89.4696 0.000000000002885 \*\*\*  
## Genotype 34.48 1 2.6884 0.10806   
## Sex 78.17 1 6.0949 0.01742 \*   
## Genotype:Sex 27.07 1 2.1104 0.15324   
## Residuals 577.18 45   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

## PAL Training Data: 4 Months

### Total Session Length

This ANOVA was a 9 (Bin) 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) 1803451066 1 33433428 44 2373.4284  
## Genotype 19210165 1 33433428 44 25.2815  
## Sex 16687401 1 33433428 44 21.9614  
## Genotype:Sex 27525767 1 33433428 44 36.2252  
## Week 126924346 8 30348129 352 184.0203  
## Genotype:Week 1960367 8 30348129 352 2.8422  
## Sex:Week 2138375 8 30348129 352 3.1003  
## Genotype:Sex:Week 3018884 8 30348129 352 4.3769  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0000087876 \*\*\*  
## Sex 0.0000269697 \*\*\*  
## Genotype:Sex 0.0000003167 \*\*\*  
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.004524 \*\*   
## Sex:Week 0.002146 \*\*   
## Genotype:Sex:Week 0.0000467582 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.022136 0.000000000000000033481  
## Genotype:Week 0.022136 0.000000000000000033481  
## Sex:Week 0.022136 0.000000000000000033481  
## Genotype:Sex:Week 0.022136 0.000000000000000033481  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.48148 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.48148 0.027452 \*   
## Sex:Week 0.48148 0.018365 \*   
## Genotype:Sex:Week 0.48148 0.002459 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.533435 1.067044e-65  
## Genotype:Week 0.533435 2.280424e-02  
## Sex:Week 0.533435 1.473024e-02  
## Genotype:Sex:Week 0.533435 1.641139e-03

#### 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) 3038923758 1 77151941 58 2284.5515  
## Genotype 2157495 1 77151941 58 1.6219  
## Sex 15867488 1 77151941 58 11.9286  
## Genotype:Sex 1931013 1 77151941 58 1.4517  
## Week 97765930 8 48479573 464 116.9652  
## Genotype:Week 1481803 8 48479573 464 1.7728  
## Sex:Week 4148400 8 48479573 464 4.9631  
## Genotype:Sex:Week 1861734 8 48479573 464 2.2273  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.207904   
## Sex 0.001039 \*\*   
## Genotype:Sex 0.233154   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.080217 .   
## Sex:Week 0.000006511 \*\*\*  
## Genotype:Sex:Week 0.024454 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0276 0.0000000000000000000000016555  
## Genotype:Week 0.0276 0.0000000000000000000000016555  
## Sex:Week 0.0276 0.0000000000000000000000016555  
## Genotype:Sex:Week 0.0276 0.0000000000000000000000016555  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.5117 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.5117 0.1334325   
## Sex:Week 0.5117 0.0006621 \*\*\*  
## Genotype:Sex:Week 0.5117 0.0652396 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5554099 3.422495e-60  
## Genotype:Week 0.5554099 1.273818e-01  
## Sex:Week 0.5554099 4.350948e-04  
## Genotype:Sex:Week 0.5554099 5.961215e-02

#### 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) 1944290081 1 64419791 45 1358.1704  
## Genotype 7729581 1 64419791 45 5.3994  
## Sex 547592 1 64419791 45 0.3825  
## Genotype:Sex 16192035 1 64419791 45 11.3108  
## Week 192812775 8 40859511 360 212.3514  
## Genotype:Week 605362 8 40859511 360 0.6667  
## Sex:Week 1403971 8 40859511 360 1.5462  
## Genotype:Sex:Week 782279 8 40859511 360 0.8616  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.024719 \*   
## Sex 0.539378   
## Genotype:Sex 0.001582 \*\*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.720861   
## Sex:Week 0.139850   
## Genotype:Sex:Week 0.549206   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.01702 0.000000000000000000089256  
## Genotype:Week 0.01702 0.000000000000000000089256  
## Sex:Week 0.01702 0.000000000000000000089256  
## Genotype:Sex:Week 0.01702 0.000000000000000000089256  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.45772 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.45772 0.6029   
## Sex:Week 0.45772 0.1957   
## Genotype:Sex:Week 0.45772 0.4805   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.503294 1.969928e-67  
## Genotype:Week 0.503294 6.168648e-01  
## Sex:Week 0.503294 1.903609e-01  
## Genotype:Sex:Week 0.503294 4.887891e-01

### Total Completed Trials

This ANOVA was a 9 (Bin) x 2 (Sex) x 2 (Genotype) Split-Plot design.

#### APP/PS1 Mice

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

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 479860 1 1645.8 44 12828.5898  
## Genotype 627 1 1645.8 44 16.7754  
## Sex 407 1 1645.8 44 10.8700  
## Genotype:Sex 482 1 1645.8 44 12.8830  
## Week 2321 8 2356.6 352 43.3351  
## Genotype:Week 542 8 2356.6 352 10.1240  
## Sex:Week 267 8 2356.6 352 4.9789  
## Genotype:Sex:Week 336 8 2356.6 352 6.2677  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0001775 \*\*\*  
## Sex 0.0019390 \*\*   
## Genotype:Sex 0.0008292 \*\*\*  
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.0000000000009826 \*\*\*  
## Sex:Week 0.0000073626580863 \*\*\*  
## Genotype:Sex:Week 0.0000001361324783 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.00000023116 4.7921e-109  
## Genotype:Week 0.00000023116 4.7921e-109  
## Sex:Week 0.00000023116 4.7921e-109  
## Genotype:Sex:Week 0.00000023116 4.7921e-109  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.25975 0.00000000000002826 \*\*\*  
## Genotype:Week 0.25975 0.00008622304579907 \*\*\*  
## Sex:Week 0.25975 0.008125 \*\*   
## Genotype:Sex:Week 0.25975 0.002495 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.2728626 0.000000000000007060477  
## Genotype:Week 0.2728626 0.000061921540617801196  
## Sex:Week 0.2728626 0.007143340518841729755  
## Genotype:Sex:Week 0.2728626 0.002085204068534183761

#### 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) 669741 1 1064.9 58 36477.7948  
## Genotype 43 1 1064.9 58 2.3673  
## Sex 36 1 1064.9 58 1.9752  
## Genotype:Sex 20 1 1064.9 58 1.0920  
## Week 1633 8 2989.4 464 31.6886  
## Genotype:Week 141 8 2989.4 464 2.7437  
## Sex:Week 51 8 2989.4 464 0.9819  
## Genotype:Sex:Week 20 8 2989.4 464 0.3947  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.129342   
## Sex 0.165227   
## Genotype:Sex 0.300365   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.005747 \*\*   
## Sex:Week 0.449309   
## Genotype:Sex:Week 0.923407   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0000036757 7.3191e-122  
## Genotype:Week 0.0000036757 7.3191e-122  
## Sex:Week 0.0000036757 7.3191e-122  
## Genotype:Sex:Week 0.0000036757 7.3191e-122  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.24183 0.00000000002124 \*\*\*  
## Genotype:Week 0.24183 0.07044 .   
## Sex:Week 0.24183 0.37548   
## Genotype:Sex:Week 0.24183 0.66791   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.2500328 0.00000000001044346  
## Genotype:Week 0.2500328 0.06850057301940179  
## Sex:Week 0.2500328 0.37770835786456636  
## Genotype:Sex:Week 0.2500328 0.67478145120068200

#### 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) 480933 1 3988.9 45 5425.5896  
## Genotype 116 1 3988.9 45 1.3065  
## Sex 3 1 3988.9 45 0.0330  
## Genotype:Sex 556 1 3988.9 45 6.2765  
## Week 4523 8 5596.1 360 36.3691  
## Genotype:Week 106 8 5596.1 360 0.8526  
## Sex:Week 89 8 5596.1 360 0.7178  
## Genotype:Sex:Week 410 8 5596.1 360 3.2973  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.259071   
## Sex 0.856662   
## Genotype:Sex 0.015922 \*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.556915   
## Sex:Week 0.675808   
## Genotype:Sex:Week 0.001197 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.000016517 1.0357e-75  
## Genotype:Week 0.000016517 1.0357e-75  
## Sex:Week 0.000016517 1.0357e-75  
## Genotype:Sex:Week 0.000016517 1.0357e-75  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.30767 0.00000000000001314 \*\*\*  
## Genotype:Week 0.30767 0.44926   
## Sex:Week 0.30767 0.51733   
## Genotype:Sex:Week 0.30767 0.03124 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.3268339 0.000000000000002260441  
## Genotype:Week 0.3268339 0.454866492165517777302  
## Sex:Week 0.3268339 0.525142997736294470101  
## Genotype:Sex:Week 0.3268339 0.028441951070438186572

### Session Accuracy

This ANOVA was a 9 (Bin) 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) 1736034 1 11038 44 6920.1596  
## Genotype 109 1 11038 44 0.4341  
## Sex 105 1 11038 44 0.4192  
## Genotype:Sex 3727 1 11038 44 14.8559  
## Week 32713 8 11432 352 125.9041  
## Genotype:Week 487 8 11432 352 1.8737  
## Sex:Week 125 8 11432 352 0.4812  
## Genotype:Sex:Week 675 8 11432 352 2.5979  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.5134384   
## Sex 0.5207026   
## Genotype:Sex 0.0003738 \*\*\*  
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.0630773 .   
## Sex:Week 0.8693904   
## Genotype:Sex:Week 0.0090452 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.039748 0.00000000000034882  
## Genotype:Week 0.039748 0.00000000000034882  
## Sex:Week 0.039748 0.00000000000034882  
## Genotype:Sex:Week 0.039748 0.00000000000034882  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.5281 < 0.0000000000000002 \*\*\*  
## Genotype:Week 0.5281 0.11298   
## Sex:Week 0.5281 0.75954   
## Genotype:Sex:Week 0.5281 0.03491 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5911852 2.812301e-59  
## Genotype:Week 0.5911852 1.043279e-01  
## Sex:Week 0.5911852 7.800725e-01  
## Genotype:Sex:Week 0.5911852 2.901858e-02

#### 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) 1821708 1 17291 58 6110.5341  
## Genotype 722 1 17291 58 2.4222  
## Sex 3536 1 17291 58 11.8619  
## Genotype:Sex 1 1 17291 58 0.0031  
## Week 24818 8 17538 464 82.0738  
## Genotype:Week 521 8 17538 464 1.7243  
## Sex:Week 1451 8 17538 464 4.7981  
## Genotype:Sex:Week 197 8 17538 464 0.6500  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.125067   
## Sex 0.001071 \*\*   
## Genotype:Sex 0.955810   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.090476 .   
## Sex:Week 0.00001096 \*\*\*  
## Genotype:Sex:Week 0.735516   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.043167 0.000000000000000000040316  
## Genotype:Week 0.043167 0.000000000000000000040316  
## Sex:Week 0.043167 0.000000000000000000040316  
## Genotype:Sex:Week 0.043167 0.000000000000000000040316  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.48277 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.48277 0.147817   
## Sex:Week 0.48277 0.001144 \*\*   
## Genotype:Sex:Week 0.48277 0.622071   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.5215104  
## Genotype:Week 0.5215104  
## Sex:Week 0.5215104  
## Genotype:Sex:Week 0.5215104  
## Pr(>F[HF])  
## Week 0.000000000000000000000000000000000000000000004667117  
## Genotype:Week 0.142407177193422801453337456223380286246538162231445  
## Sex:Week 0.000802605613745729440725029668612933164695277810097  
## Genotype:Sex:Week 0.633846987895991365036252318532206118106842041015625

#### 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) 1922063 1 18747 45 4613.7141  
## Genotype 1465 1 18747 45 3.5159  
## Sex 1506 1 18747 45 3.6154  
## Genotype:Sex 1978 1 18747 45 4.7473  
## Week 58075 8 14301 360 182.7464  
## Genotype:Week 314 8 14301 360 0.9876  
## Sex:Week 894 8 14301 360 2.8124  
## Genotype:Sex:Week 199 8 14301 360 0.6258  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.067280 .   
## Sex 0.063662 .   
## Genotype:Sex 0.034621 \*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.445230   
## Sex:Week 0.004907 \*\*   
## Genotype:Sex:Week 0.756125   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.034006 0.0000000000000084277  
## Genotype:Week 0.034006 0.0000000000000084277  
## Sex:Week 0.034006 0.0000000000000084277  
## Genotype:Sex:Week 0.034006 0.0000000000000084277  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.49707 < 0.0000000000000002 \*\*\*  
## Genotype:Week 0.49707 0.41535   
## Sex:Week 0.49707 0.02715 \*   
## Genotype:Sex:Week 0.49707 0.64372   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5512739 2.363451e-68  
## Genotype:Week 0.5512739 4.203205e-01  
## Sex:Week 0.5512739 2.247532e-02  
## Genotype:Sex:Week 0.5512739 6.601550e-01

### Session Correction Trials

This ANOVA was a 9 (Bin) 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) 266281 1 10886 44 1076.2856  
## Genotype 1017 1 10886 44 4.1088  
## Sex 1869 1 10886 44 7.5535  
## Genotype:Sex 1835 1 10886 44 7.4159  
## Week 57181 8 14410 352 174.5995  
## Genotype:Week 591 8 14410 352 1.8032  
## Sex:Week 1240 8 14410 352 3.7857  
## Genotype:Sex:Week 1785 8 14410 352 5.4500  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0487454 \*   
## Sex 0.0086524 \*\*   
## Genotype:Sex 0.0092344 \*\*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.0752949 .   
## Sex:Week 0.0002811 \*\*\*  
## Genotype:Sex:Week 0.000001717 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.007138 0.00000000000000000000000021416  
## Genotype:Week 0.007138 0.00000000000000000000000021416  
## Sex:Week 0.007138 0.00000000000000000000000021416  
## Genotype:Sex:Week 0.007138 0.00000000000000000000000021416  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.47581 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.47581 0.1338239   
## Sex:Week 0.47581 0.0064796 \*\*   
## Genotype:Sex:Week 0.47581 0.0004801 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5264881 3.484867e-63  
## Genotype:Week 0.5264881 1.264464e-01  
## Sex:Week 0.5264881 4.752367e-03  
## Genotype:Sex:Week 0.5264881 2.761442e-04

#### 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) 586434 1 23334 58 1457.6399  
## Genotype 2087 1 23334 58 5.1883  
## Sex 2852 1 23334 58 7.0892  
## Genotype:Sex 4 1 23334 58 0.0107  
## Week 42931 8 23041 464 108.0677  
## Genotype:Week 802 8 23041 464 2.0182  
## Sex:Week 2680 8 23041 464 6.7463  
## Genotype:Sex:Week 372 8 23041 464 0.9352  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.02644 \*   
## Sex 0.01002 \*   
## Genotype:Sex 0.91814   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.04276 \*   
## Sex:Week 0.00000002215 \*\*\*  
## Genotype:Sex:Week 0.48692   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.022728 0.00000000000000000000000001902  
## Genotype:Week 0.022728 0.00000000000000000000000001902  
## Sex:Week 0.022728 0.00000000000000000000000001902  
## Genotype:Sex:Week 0.022728 0.00000000000000000000000001902  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.46091 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.46091 0.09865 .   
## Sex:Week 0.46091 0.00006754 \*\*\*  
## Genotype:Sex:Week 0.46091 0.43891   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.4960852  
## Genotype:Week 0.4960852  
## Sex:Week 0.4960852  
## Genotype:Sex:Week 0.4960852  
## Pr(>F[HF])  
## Week 0.000000000000000000000000000000000000000000000000001875365  
## Genotype:Week 0.093275748634057464858670982721378095448017120361328125000  
## Sex:Week 0.000039733370424428991741355732258966781955678015947341919  
## Genotype:Sex:Week 0.443729654515019333871350681874901056289672851562500000000

#### 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) 207895 1 15730 45 594.7435  
## Genotype 280 1 15730 45 0.7997  
## Sex 1393 1 15730 45 3.9861  
## Genotype:Sex 186 1 15730 45 0.5322  
## Week 50089 8 16398 360 137.4543  
## Genotype:Week 241 8 16398 360 0.6607  
## Sex:Week 1042 8 16398 360 2.8584  
## Genotype:Sex:Week 581 8 16398 360 1.5935  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.375929   
## Sex 0.051947 .   
## Genotype:Sex 0.469444   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.726084   
## Sex:Week 0.004301 \*\*   
## Genotype:Sex:Week 0.125173   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.005616 0.00000000000000000000000000038583  
## Genotype:Week 0.005616 0.00000000000000000000000000038583  
## Sex:Week 0.005616 0.00000000000000000000000000038583  
## Genotype:Sex:Week 0.005616 0.00000000000000000000000000038583  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.42935 < 0.0000000000000002 \*\*\*  
## Genotype:Week 0.42935 0.59749   
## Sex:Week 0.42935 0.03228 \*   
## Genotype:Sex:Week 0.42935 0.18690   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.4691496  
## Genotype:Week 0.4691496  
## Sex:Week 0.4691496  
## Genotype:Sex:Week 0.4691496  
## Pr(>F[HF])  
## Week 0.00000000000000000000000000000000000000000000000001855015  
## Genotype:Week 0.61060311599848737795781516979332081973552703857421875000  
## Sex:Week 0.02792500172204854733126744292803778080269694328308105469  
## Genotype:Sex:Week 0.18182633042800394607141356573265511542558670043945312500

### Correct Response Latency

This ANOVA was a 9 (Bin) 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) 2504.81 1 135.807 44 811.5300  
## Genotype 116.76 1 135.807 44 37.8272  
## Sex 144.95 1 135.807 44 46.9631  
## Genotype:Sex 38.15 1 135.807 44 12.3616  
## Week 35.36 8 77.066 352 20.1892  
## Genotype:Week 6.23 8 77.066 352 3.5545  
## Sex:Week 3.89 8 77.066 352 2.2230  
## Genotype:Sex:Week 6.31 8 77.066 352 3.6034  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.00000020282 \*\*\*  
## Sex 0.00000001878 \*\*\*  
## Genotype:Sex 0.0010295 \*\*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.0005619 \*\*\*  
## Sex:Week 0.0253372 \*   
## Genotype:Sex:Week 0.0004854 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0089697 0.000000000000000000000010472  
## Genotype:Week 0.0089697 0.000000000000000000000010472  
## Sex:Week 0.0089697 0.000000000000000000000010472  
## Genotype:Sex:Week 0.0089697 0.000000000000000000000010472  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.51962 0.00000000000003759 \*\*\*  
## Genotype:Week 0.51962 0.007310 \*\*   
## Sex:Week 0.51962 0.065702 .   
## Genotype:Sex:Week 0.51962 0.006733 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5806041 0.000000000000001510459  
## Genotype:Week 0.5806041 0.005244929232487993871  
## Sex:Week 0.5806041 0.058035804380691044524  
## Genotype:Sex:Week 0.5806041 0.004791287786212839600

#### 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) 2377.87 1 120.56 57 1124.2549  
## Genotype 10.34 1 120.56 57 4.8909  
## Sex 0.05 1 120.56 57 0.0257  
## Genotype:Sex 4.63 1 120.56 57 2.1894  
## Week 45.65 8 52.49 456 49.5758  
## Genotype:Week 1.55 8 52.49 456 1.6809  
## Sex:Week 1.24 8 52.49 456 1.3512  
## Genotype:Sex:Week 0.19 8 52.49 456 0.2094  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.03102 \*   
## Sex 0.87320   
## Genotype:Sex 0.14447   
## Week < 0.0000000000000002 \*\*\*  
## Genotype:Week 0.10069   
## Sex:Week 0.21607   
## Genotype:Sex:Week 0.98924   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Week 0.0082582  
## Genotype:Week 0.0082582  
## Sex:Week 0.0082582  
## Genotype:Sex:Week 0.0082582  
## p-value  
## Week 0.0000000000000000000000000000000000066038  
## Genotype:Week 0.0000000000000000000000000000000000066038  
## Sex:Week 0.0000000000000000000000000000000000066038  
## Genotype:Sex:Week 0.0000000000000000000000000000000000066038  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.42714 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.42714 0.1654   
## Sex:Week 0.42714 0.2566   
## Genotype:Sex:Week 0.42714 0.9108   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4576835 0.000000000000000000000000001184561  
## Genotype:Week 0.4576835 0.161102715486692388280332011163409  
## Sex:Week 0.4576835 0.254671320856100502627583637149655  
## Genotype:Sex:Week 0.4576835 0.921008451678631545611608544277260

#### 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) 2816.23 1 193.03 44 641.9453  
## Genotype 15.28 1 193.03 44 3.4840  
## Sex 1.71 1 193.03 44 0.3909  
## Genotype:Sex 13.26 1 193.03 44 3.0215  
## Week 80.75 8 78.51 352 45.2576  
## Genotype:Week 3.28 8 78.51 352 1.8390  
## Sex:Week 2.54 8 78.51 352 1.4243  
## Genotype:Sex:Week 1.90 8 78.51 352 1.0622  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.06864 .   
## Sex 0.53507   
## Genotype:Sex 0.08916 .   
## Week < 0.0000000000000002 \*\*\*  
## Genotype:Week 0.06884 .   
## Sex:Week 0.18482   
## Genotype:Sex:Week 0.38916   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.013732 0.000000000000000000013336  
## Genotype:Week 0.013732 0.000000000000000000013336  
## Sex:Week 0.013732 0.000000000000000000013336  
## Genotype:Sex:Week 0.013732 0.000000000000000000013336  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.47883 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.47883 0.1265   
## Sex:Week 0.47883 0.2297   
## Genotype:Sex:Week 0.47883 0.3756   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5301851 0.000000000000000000000000001579941  
## Genotype:Week 0.5301851 0.119017665329257296691345402450679  
## Sex:Week 0.5301851 0.225099378206242706212947268795688  
## Genotype:Sex:Week 0.5301851 0.378375576187766959890268481103703

### Reward Collection Latency

This ANOVA was a 9 (Bin) 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) 501.73 1 7.4283 44 2971.8927  
## Genotype 0.00 1 7.4283 44 0.0012  
## Sex 2.41 1 7.4283 44 14.2967  
## Genotype:Sex 0.10 1 7.4283 44 0.5992  
## Week 0.65 8 1.9735 352 14.5818  
## Genotype:Week 0.07 8 1.9735 352 1.5649  
## Sex:Week 0.14 8 1.9735 352 3.1773  
## Genotype:Sex:Week 0.22 8 1.9735 352 4.7996  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.972977   
## Sex 0.000467 \*\*\*  
## Genotype:Sex 0.443030   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.133976   
## Sex:Week 0.001714 \*\*   
## Genotype:Sex:Week 0.00001279 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.046233 0.0000000000035204  
## Genotype:Week 0.046233 0.0000000000035204  
## Sex:Week 0.046233 0.0000000000035204  
## Genotype:Sex:Week 0.046233 0.0000000000035204  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.52904 0.00000000008844 \*\*\*  
## Genotype:Week 0.52904 0.1822250   
## Sex:Week 0.52904 0.0131757 \*   
## Genotype:Sex:Week 0.52904 0.0008213 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.592355 0.000000000008215651  
## Genotype:Week 0.592355 0.174819819399825466  
## Sex:Week 0.592355 0.009959431058443713  
## Genotype:Sex:Week 0.592355 0.000465694046212542

#### 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) 618.29 1 8.1861 57 4305.1726  
## Genotype 4.68 1 8.1861 57 32.6022  
## Sex 9.17 1 8.1861 57 63.8718  
## Genotype:Sex 1.00 1 8.1861 57 6.9318  
## Week 0.49 8 3.0292 456 9.2740  
## Genotype:Week 0.04 8 3.0292 456 0.7303  
## Sex:Week 0.29 8 3.0292 456 5.3703  
## Genotype:Sex:Week 0.09 8 3.0292 456 1.6101  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.000000427484445 \*\*\*  
## Sex 0.000000000070866 \*\*\*  
## Genotype:Sex 0.01088 \*   
## Week 0.000000000007136 \*\*\*  
## Genotype:Week 0.66476   
## Sex:Week 0.000001812475929 \*\*\*  
## Genotype:Sex:Week 0.11946   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic  
## Week 0.0082684  
## Genotype:Week 0.0082684  
## Sex:Week 0.0082684  
## Genotype:Sex:Week 0.0082684  
## p-value  
## Week 0.0000000000000000000000000000000000067985  
## Genotype:Week 0.0000000000000000000000000000000000067985  
## Sex:Week 0.0000000000000000000000000000000000067985  
## Genotype:Sex:Week 0.0000000000000000000000000000000000067985  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.37914 0.000009311 \*\*\*  
## Genotype:Week 0.37914 0.53663   
## Sex:Week 0.37914 0.00141 \*\*   
## Genotype:Sex:Week 0.37914 0.18832   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4028465 0.000005398188  
## Genotype:Week 0.4028465 0.544350280842  
## Sex:Week 0.4028465 0.001087290921  
## Genotype:Sex:Week 0.4028465 0.185203941151

#### 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) 614.12 1 7.8548 45 3518.2574  
## Genotype 0.00 1 7.8548 45 0.0083  
## Sex 2.26 1 7.8548 45 12.9411  
## Genotype:Sex 2.42 1 7.8548 45 13.8718  
## Week 2.91 8 3.2398 360 40.3637  
## Genotype:Week 0.08 8 3.2398 360 1.1327  
## Sex:Week 0.09 8 3.2398 360 1.2807  
## Genotype:Sex:Week 0.06 8 3.2398 360 0.7965  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.9279684   
## Sex 0.0007956 \*\*\*  
## Genotype:Sex 0.0005433 \*\*\*  
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.3403075   
## Sex:Week 0.2521771   
## Genotype:Sex:Week 0.6060026   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.023557 0.000000000000000020709  
## Genotype:Week 0.023557 0.000000000000000020709  
## Sex:Week 0.023557 0.000000000000000020709  
## Genotype:Sex:Week 0.023557 0.000000000000000020709  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.41897 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.41897 0.3403   
## Sex:Week 0.41897 0.2824   
## Genotype:Sex:Week 0.41897 0.5098   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4567417 0.0000000000000000000003093324  
## Genotype:Week 0.4567417 0.3415780901174736983172408600  
## Sex:Week 0.4567417 0.2810614414124777415970868333  
## Genotype:Sex:Week 0.4567417 0.5191013958872618960782574504

## PAL Training Data: 10 Months

### Total Session Length

This ANOVA was a 9 (Bin) 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) 785666161 1 14876515 28 1478.7504  
## Genotype 127502 1 14876515 28 0.2400  
## Sex 5751176 1 14876515 28 10.8246  
## Genotype:Sex 61738 1 14876515 28 0.1162  
## Week 48900682 8 13676360 224 100.1158  
## Genotype:Week 910146 8 13676360 224 1.8634  
## Sex:Week 1188402 8 13676360 224 2.4331  
## Genotype:Sex:Week 462130 8 13676360 224 0.9461  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.628038   
## Sex 0.002708 \*\*   
## Genotype:Sex 0.735738   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.066895 .   
## Sex:Week 0.015337 \*   
## Genotype:Sex:Week 0.479329   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.012155 0.0000000012312  
## Genotype:Week 0.012155 0.0000000012312  
## Sex:Week 0.012155 0.0000000012312  
## Genotype:Sex:Week 0.012155 0.0000000012312  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.50969 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.50969 0.1204   
## Sex:Week 0.50969 0.0503 .   
## Genotype:Sex:Week 0.50969 0.4413   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.6074148  
## Genotype:Week 0.6074148  
## Sex:Week 0.6074148  
## Genotype:Sex:Week 0.6074148  
## Pr(>F[HF])  
## Week 0.0000000000000000000000000000000000000000002802146  
## Genotype:Week 0.1068025264041793515046308016280818264931440353394  
## Sex:Week 0.0394672153588696977832839252187113743275403976440  
## Genotype:Sex:Week 0.4516738091318456271849868244316894561052322387695

#### 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) 2374386062 1 73724374 55 1771.3441  
## Genotype 15017230 1 73724374 55 11.2032  
## Sex 8533928 1 73724374 55 6.3665  
## Genotype:Sex 2715562 1 73724374 55 2.0259  
## Week 35059559 8 47272952 440 40.7903  
## Genotype:Week 2710813 8 47272952 440 3.1539  
## Sex:Week 6654715 8 47272952 440 7.7425  
## Genotype:Sex:Week 2564365 8 47272952 440 2.9835  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.001478 \*\*   
## Sex 0.014550 \*   
## Genotype:Sex 0.160289   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.001747 \*\*   
## Sex:Week 0.0000000009853 \*\*\*  
## Genotype:Sex:Week 0.002886 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.11167 0.00000000027211  
## Genotype:Week 0.11167 0.00000000027211  
## Sex:Week 0.11167 0.00000000027211  
## Genotype:Sex:Week 0.11167 0.00000000027211  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.62127 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.62127 0.008865 \*\*   
## Sex:Week 0.62127 0.0000008392 \*\*\*  
## Genotype:Sex:Week 0.62127 0.012366 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.6904072 0.0000000000000000000000000000000002476925  
## Genotype:Week 0.6904072 0.0065627935141976704788713270488642592682  
## Sex:Week 0.6904072 0.0000002432546671747556023355368859384384  
## Genotype:Sex:Week 0.6904072 0.0094442083415306708749081820997162139975

#### 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) 1822323565 1 62954495 44 1273.6539  
## Genotype 2973149 1 62954495 44 2.0780  
## Sex 10309717 1 62954495 44 7.2056  
## Genotype:Sex 7525101 1 62954495 44 5.2594  
## Week 46259454 8 34580437 352 58.8603  
## Genotype:Week 597824 8 34580437 352 0.7607  
## Sex:Week 3236125 8 34580437 352 4.1176  
## Genotype:Sex:Week 1648141 8 34580437 352 2.0971  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.156517   
## Sex 0.010206 \*   
## Genotype:Sex 0.026663 \*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.637759   
## Sex:Week 0.000103 \*\*\*  
## Genotype:Sex:Week 0.035417 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.10968 0.00000081923  
## Genotype:Week 0.10968 0.00000081923  
## Sex:Week 0.10968 0.00000081923  
## Genotype:Sex:Week 0.10968 0.00000081923  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.61504 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.61504 0.577127   
## Sex:Week 0.61504 0.001452 \*\*   
## Genotype:Sex:Week 0.61504 0.068011 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.7018179  
## Genotype:Week 0.7018179  
## Sex:Week 0.7018179  
## Genotype:Sex:Week 0.7018179  
## Pr(>F[HF])  
## Week 0.0000000000000000000000000000000000000000003759665  
## Genotype:Week 0.5932603178723613313039209060661960393190383911133  
## Sex:Week 0.0007946897596717105273847470137127402267651632428  
## Genotype:Sex:Week 0.0585553040415969158760667312435543863102793693542

### Total Completed Trials

This ANOVA was a 9 (Bin) 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) 326509 1 55.942 28 163425.2255  
## Genotype 0 1 55.942 28 0.0038  
## Sex 8 1 55.942 28 4.1675  
## Genotype:Sex 0 1 55.942 28 0.1930  
## Week 128 8 278.715 224 12.8210  
## Genotype:Week 11 8 278.715 224 1.1515  
## Sex:Week 27 8 278.715 224 2.7079  
## Genotype:Sex:Week 8 8 278.715 224 0.7540  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.951346   
## Sex 0.050731 .   
## Genotype:Sex 0.663778   
## Week 0.00000000000000373 \*\*\*  
## Genotype:Week 0.329977   
## Sex:Week 0.007275 \*\*   
## Genotype:Sex:Week 0.643682   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#### 5xFAD Mice

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

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 657855 1 773.44 55 46780.6975  
## Genotype 58 1 773.44 55 4.1288  
## Sex 2 1 773.44 55 0.1464  
## Genotype:Sex 26 1 773.44 55 1.8217  
## Week 68 8 1501.42 440 2.4836  
## Genotype:Week 36 8 1501.42 440 1.3185  
## Sex:Week 43 8 1501.42 440 1.5691  
## Genotype:Sex:Week 42 8 1501.42 440 1.5440  
## Pr(>F)   
## (Intercept) < 0.0000000000000002 \*\*\*  
## Genotype 0.04700 \*   
## Sex 0.70347   
## Genotype:Sex 0.18264   
## Week 0.01211 \*   
## Genotype:Week 0.23204   
## Sex:Week 0.13180   
## Genotype:Sex:Week 0.13979   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0070664 0.000000000000000000000000000000000012851  
## Genotype:Week 0.0070664 0.000000000000000000000000000000000012851  
## Sex:Week 0.0070664 0.000000000000000000000000000000000012851  
## Genotype:Sex:Week 0.0070664 0.000000000000000000000000000000000012851  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.50961 0.04352 \*  
## Genotype:Week 0.50961 0.26344   
## Sex:Week 0.50961 0.18240   
## Genotype:Sex:Week 0.50961 0.18936   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5555112 0.03848934  
## Genotype:Week 0.5555112 0.26068525  
## Sex:Week 0.5555112 0.17694159  
## Genotype:Sex:Week 0.5555112 0.18408010

#### 3xTG Mice

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

##   
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity  
##   
## SS num Df Error SS den Df F  
## (Intercept) 515338 1 2498.4 44 9075.5922  
## Genotype 103 1 2498.4 44 1.8099  
## Sex 188 1 2498.4 44 3.3107  
## Genotype:Sex 146 1 2498.4 44 2.5695  
## Week 374 8 1650.3 352 9.9638  
## Genotype:Week 56 8 1650.3 352 1.4934  
## Sex:Week 83 8 1650.3 352 2.2215  
## Genotype:Sex:Week 46 8 1650.3 352 1.2372  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.18542   
## Sex 0.07564 .   
## Genotype:Sex 0.11610   
## Week 0.000000000001594 \*\*\*  
## Genotype:Week 0.15808   
## Sex:Week 0.02544 \*   
## Genotype:Sex:Week 0.27617   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.00014112 5.1699e-56  
## Genotype:Week 0.00014112 5.1699e-56  
## Sex:Week 0.00014112 5.1699e-56  
## Genotype:Sex:Week 0.00014112 5.1699e-56  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.40126 0.00000303 \*\*\*  
## Genotype:Week 0.40126 0.21661   
## Sex:Week 0.40126 0.08397 .   
## Genotype:Sex:Week 0.40126 0.29875   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4365426 0.000001279109  
## Genotype:Week 0.4365426 0.212899172765  
## Sex:Week 0.4365426 0.078082959908  
## Genotype:Sex:Week 0.4365426 0.298292140299

### Session Accuracy

This ANOVA was a 9 (Bin) 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) 1216978 1 8475.3 28 4020.5343  
## Genotype 567 1 8475.3 28 1.8729  
## Sex 42 1 8475.3 28 0.1374  
## Genotype:Sex 309 1 8475.3 28 1.0218  
## Week 16067 8 5446.5 224 82.6005  
## Genotype:Week 194 8 5446.5 224 0.9965  
## Sex:Week 245 8 5446.5 224 1.2586  
## Genotype:Sex:Week 164 8 5446.5 224 0.8418  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.1820   
## Sex 0.7137   
## Genotype:Sex 0.3207   
## Week <0.0000000000000002 \*\*\*  
## Genotype:Week 0.4396   
## Sex:Week 0.2664   
## Genotype:Sex:Week 0.5667   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.056687 0.00026247  
## Genotype:Week 0.056687 0.00026247  
## Sex:Week 0.056687 0.00026247  
## Genotype:Sex:Week 0.056687 0.00026247  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.61255 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.61255 0.4214   
## Sex:Week 0.61255 0.2859   
## Genotype:Sex:Week 0.61255 0.5204   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.758195  
## Genotype:Week 0.758195  
## Sex:Week 0.758195  
## Genotype:Sex:Week 0.758195  
## Pr(>F[HF])  
## Week 0.000000000000000000000000000000000000000000000005086912  
## Genotype:Week 0.429814459459105124849997991987038403749465942382812500  
## Sex:Week 0.278790023268840392312029052845900878310203552246093750  
## Genotype:Sex:Week 0.540330255750613996923448212328366935253143310546875000

#### 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) 1800393 1 19854 55 4987.5342  
## Genotype 8982 1 19854 55 24.8834  
## Sex 2410 1 19854 55 6.6753  
## Genotype:Sex 1031 1 19854 55 2.8560  
## Week 22058 8 14921 440 81.3057  
## Genotype:Week 3087 8 14921 440 11.3803  
## Sex:Week 1888 8 14921 440 6.9586  
## Genotype:Sex:Week 746 8 14921 440 2.7499  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.00000645615113694 \*\*\*  
## Sex 0.012463 \*   
## Genotype:Sex 0.096696 .   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.00000000000001055 \*\*\*  
## Sex:Week 0.00000001194040585 \*\*\*  
## Genotype:Sex:Week 0.005687 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.080264 0.00000000000049676  
## Genotype:Week 0.080264 0.00000000000049676  
## Sex:Week 0.080264 0.00000000000049676  
## Genotype:Sex:Week 0.080264 0.00000000000049676  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.53906 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.53906 0.000000006589 \*\*\*  
## Sex:Week 0.53906 0.000014762246 \*\*\*  
## Genotype:Sex:Week 0.53906 0.02555 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.5906248  
## Genotype:Week 0.5906248  
## Sex:Week 0.5906248  
## Genotype:Sex:Week 0.5906248  
## Pr(>F[HF])  
## Week 0.0000000000000000000000000000000000000000000000001922641  
## Genotype:Week 0.0000000014684312275622635424361661637959741710801608860  
## Sex:Week 0.0000066075777998950043353940109192024010553723201155663  
## Genotype:Sex:Week 0.0215167726786731419719167490711697610095143318176269531

#### 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) 1575152 1 19391 44 3574.2083  
## Genotype 322 1 19391 44 0.7312  
## Sex 51 1 19391 44 0.1162  
## Genotype:Sex 35 1 19391 44 0.0803  
## Week 13883 8 12395 352 49.2832  
## Genotype:Week 136 8 12395 352 0.4842  
## Sex:Week 468 8 12395 352 1.6616  
## Genotype:Sex:Week 91 8 12395 352 0.3245  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.3971   
## Sex 0.7348   
## Genotype:Sex 0.7782   
## Week <0.0000000000000002 \*\*\*  
## Genotype:Week 0.8674   
## Sex:Week 0.1065   
## Genotype:Sex:Week 0.9565   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.056543 0.000000000072149  
## Genotype:Week 0.056543 0.000000000072149  
## Sex:Week 0.056543 0.000000000072149  
## Genotype:Sex:Week 0.056543 0.000000000072149  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.54977 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.54977 0.7647   
## Sex:Week 0.54977 0.1544   
## Genotype:Sex:Week 0.54977 0.8775   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.6184008 0.0000000000000000000000000000000009338762  
## Genotype:Week 0.6184008 0.7859982136446329592516235607035923749208  
## Sex:Week 0.6184008 0.1458131904205251794248709984458400867879  
## Genotype:Sex:Week 0.6184008 0.8962748598037307834474063383822795003653

### Session Correction Trials

This ANOVA was a 9 (Bin) 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) 119195 1 7461.8 28 447.2702  
## Genotype 501 1 7461.8 28 1.8789  
## Sex 0 1 7461.8 28 0.0002  
## Genotype:Sex 475 1 7461.8 28 1.7837  
## Week 24292 8 7407.2 224 91.8260  
## Genotype:Week 216 8 7407.2 224 0.8168  
## Sex:Week 168 8 7407.2 224 0.6341  
## Genotype:Sex:Week 224 8 7407.2 224 0.8471  
## Pr(>F)   
## (Intercept) <0.0000000000000002 \*\*\*  
## Genotype 0.1813   
## Sex 0.9892   
## Genotype:Sex 0.1925   
## Week <0.0000000000000002 \*\*\*  
## Genotype:Week 0.5885   
## Sex:Week 0.7487   
## Genotype:Sex:Week 0.5622   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0028742 0.0000000000000020388  
## Genotype:Week 0.0028742 0.0000000000000020388  
## Sex:Week 0.0028742 0.0000000000000020388  
## Genotype:Sex:Week 0.0028742 0.0000000000000020388  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.45109 <0.0000000000000002 \*\*\*  
## Genotype:Week 0.45109 0.5067   
## Sex:Week 0.45109 0.6233   
## Genotype:Sex:Week 0.45109 0.4889   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5260729 0.000000000000000000000000000000000004128114  
## Genotype:Week 0.5260729 0.522202499451749457826110756286652758717537  
## Sex:Week 0.5260729 0.647118070177584270297188595577608793973923  
## Genotype:Sex:Week 0.5260729 0.502916821980323280882885228493250906467438

#### 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) 535401 1 26837 55 1097.2387  
## Genotype 19732 1 26837 55 40.4383  
## Sex 197 1 26837 55 0.4033  
## Genotype:Sex 3190 1 26837 55 6.5365  
## Week 30605 8 25261 440 66.6352  
## Genotype:Week 1228 8 25261 440 2.6733  
## Sex:Week 4770 8 25261 440 10.3846  
## Genotype:Sex:Week 1817 8 25261 440 3.9555  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.0000000420745079 \*\*\*  
## Sex 0.5280022   
## Genotype:Sex 0.0133585 \*   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.0070835 \*\*   
## Sex:Week 0.0000000000002346 \*\*\*  
## Genotype:Sex:Week 0.0001547 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.094606 0.000000000011911  
## Genotype:Week 0.094606 0.000000000011911  
## Sex:Week 0.094606 0.000000000011911  
## Genotype:Sex:Week 0.094606 0.000000000011911  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.63701 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.63701 0.021442 \*   
## Sex:Week 0.63701 0.000000002831 \*\*\*  
## Genotype:Sex:Week 0.63701 0.001629 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps  
## Week 0.7098147  
## Genotype:Week 0.7098147  
## Sex:Week 0.7098147  
## Genotype:Sex:Week 0.7098147  
## Pr(>F[HF])  
## Week 0.000000000000000000000000000000000000000000000000003153599  
## Genotype:Week 0.017113835864440596346014444861793890595436096191406250000  
## Sex:Week 0.000000000426982711672578775334574441302493141847662627697  
## Genotype:Sex:Week 0.001010944671772660233971530274743599875364452600479125977

#### 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) 321985 1 30688 44 461.6526  
## Genotype 87 1 30688 44 0.1243  
## Sex 106 1 30688 44 0.1515  
## Genotype:Sex 4 1 30688 44 0.0051  
## Week 29102 8 13016 352 98.3801  
## Genotype:Week 522 8 13016 352 1.7652  
## Sex:Week 958 8 13016 352 3.2401  
## Genotype:Sex:Week 470 8 13016 352 1.5877  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.726139   
## Sex 0.698938   
## Genotype:Sex 0.943625   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.082737 .   
## Sex:Week 0.001425 \*\*   
## Genotype:Sex:Week 0.126999   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.052272 0.000000000022398  
## Genotype:Week 0.052272 0.000000000022398  
## Sex:Week 0.052272 0.000000000022398  
## Genotype:Sex:Week 0.052272 0.000000000022398  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.56869 < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.56869 0.128402   
## Sex:Week 0.56869 0.009874 \*\*   
## Genotype:Sex:Week 0.56869 0.171213   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.6423482 1.509039e-55  
## Genotype:Week 0.6423482 1.189565e-01  
## Sex:Week 0.6423482 7.055568e-03  
## Genotype:Sex:Week 0.6423482 1.626232e-01

### Correct Response Latency

This ANOVA was a 9 (Bin) 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) 1069.58 1 23.072 28 1298.0136  
## Genotype 0.16 1 23.072 28 0.1972  
## Sex 43.33 1 23.072 28 52.5862  
## Genotype:Sex 0.72 1 23.072 28 0.8719  
## Week 13.27 8 20.023 224 18.5572  
## Genotype:Week 0.54 8 20.023 224 0.7504  
## Sex:Week 4.31 8 20.023 224 6.0295  
## Genotype:Sex:Week 1.35 8 20.023 224 1.8943  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.66039   
## Sex 0.00000006797 \*\*\*  
## Genotype:Sex 0.35841   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.64689   
## Sex:Week 0.00000050837 \*\*\*  
## Genotype:Sex:Week 0.06195 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.0070584 0.0000000000094663  
## Genotype:Week 0.0070584 0.0000000000094663  
## Sex:Week 0.0070584 0.0000000000094663  
## Genotype:Sex:Week 0.0070584 0.0000000000094663  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.42691 0.0000000002528 \*\*\*  
## Genotype:Week 0.42691 0.5406888   
## Sex:Week 0.42691 0.0004796 \*\*\*  
## Genotype:Sex:Week 0.42691 0.1278975   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4934121 0.00000000001341239  
## Genotype:Week 0.4934121 0.55816843602988797  
## Sex:Week 0.4934121 0.00021374552894037  
## Genotype:Sex:Week 0.4934121 0.11733983051959627

#### 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) 1913.38 1 117.888 55 892.6786  
## Genotype 2.19 1 117.888 55 1.0211  
## Sex 11.39 1 117.888 55 5.3137  
## Genotype:Sex 12.03 1 117.888 55 5.6110  
## Week 2.76 8 44.184 440 3.4326  
## Genotype:Week 1.44 8 44.184 440 1.7934  
## Sex:Week 1.48 8 44.184 440 1.8474  
## Genotype:Sex:Week 0.26 8 44.184 440 0.3271  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.3166819   
## Sex 0.0249562 \*   
## Genotype:Sex 0.0213875 \*   
## Week 0.0007599 \*\*\*  
## Genotype:Week 0.0763556 .   
## Sex:Week 0.0666490 .   
## Genotype:Sex:Week 0.9555578   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.042796 0.0000000000000000015108  
## Genotype:Week 0.042796 0.0000000000000000015108  
## Sex:Week 0.042796 0.0000000000000000015108  
## Genotype:Sex:Week 0.042796 0.0000000000000000015108  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.5007 0.00953 \*\*  
## Genotype:Week 0.5007 0.13106   
## Sex:Week 0.5007 0.12071   
## Genotype:Sex:Week 0.5007 0.85985   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.5449414 0.007579241  
## Genotype:Week 0.5449414 0.124812053  
## Sex:Week 0.5449414 0.114391167  
## Genotype:Sex:Week 0.5449414 0.874388767

#### 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) 1990.90 1 111.824 44 783.3727  
## Genotype 0.50 1 111.824 44 0.1970  
## Sex 0.61 1 111.824 44 0.2393  
## Genotype:Sex 0.61 1 111.824 44 0.2409  
## Week 17.48 8 34.826 352 22.0837  
## Genotype:Week 0.83 8 34.826 352 1.0531  
## Sex:Week 3.93 8 34.826 352 4.9643  
## Genotype:Sex:Week 0.36 8 34.826 352 0.4604  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.6593   
## Sex 0.6271   
## Genotype:Sex 0.6260   
## Week < 0.00000000000000022 \*\*\*  
## Genotype:Week 0.3958   
## Sex:Week 0.0000077 \*\*\*  
## Genotype:Sex:Week 0.8835   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.038652 0.00000000000022654  
## Genotype:Week 0.038652 0.00000000000022654  
## Sex:Week 0.038652 0.00000000000022654  
## Genotype:Sex:Week 0.038652 0.00000000000022654  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.55372 0.0000000000000003929 \*\*\*  
## Genotype:Week 0.55372 0.38433   
## Sex:Week 0.55372 0.00049 \*\*\*  
## Genotype:Sex:Week 0.55372 0.78357   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.623378 0.000000000000000007133788  
## Genotype:Week 0.623378 0.387378478418266614102805  
## Sex:Week 0.623378 0.000254273824431939176553  
## Genotype:Sex:Week 0.623378 0.805005338044205154268695

### Reward Collection Latency

This ANOVA was a 9 (Bin) 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) 278.052 1 3.7713 28 2064.4049  
## Genotype 0.110 1 3.7713 28 0.8169  
## Sex 1.924 1 3.7713 28 14.2818  
## Genotype:Sex 0.639 1 3.7713 28 4.7462  
## Week 0.285 8 0.8891 224 8.9662  
## Genotype:Week 0.049 8 0.8891 224 1.5554  
## Sex:Week 0.261 8 0.8891 224 8.2073  
## Genotype:Sex:Week 0.099 8 0.8891 224 3.1224  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.3737864   
## Sex 0.0007573 \*\*\*  
## Genotype:Sex 0.0379401 \*   
## Week 0.0000000001178 \*\*\*  
## Genotype:Week 0.1395350   
## Sex:Week 0.0000000009888 \*\*\*  
## Genotype:Sex:Week 0.0022963 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.075278 0.001744  
## Genotype:Week 0.075278 0.001744  
## Sex:Week 0.075278 0.001744  
## Genotype:Sex:Week 0.075278 0.001744  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.55968 0.0000007681 \*\*\*  
## Genotype:Week 0.55968 0.18415   
## Sex:Week 0.55968 0.0000026064 \*\*\*  
## Genotype:Sex:Week 0.55968 0.01383 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.6793802 0.00000006963153  
## Genotype:Week 0.6793802 0.17067477106330  
## Sex:Week 0.6793802 0.00000030234753  
## Genotype:Sex:Week 0.6793802 0.00842536501358

#### 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) 720.52 1 18.0503 55 2195.4365  
## Genotype 36.91 1 18.0503 55 112.4670  
## Sex 13.21 1 18.0503 55 40.2626  
## Genotype:Sex 4.71 1 18.0503 55 14.3469  
## Week 0.27 8 2.6592 440 5.6333  
## Genotype:Week 0.04 8 2.6592 440 0.8464  
## Sex:Week 0.32 8 2.6592 440 6.6422  
## Genotype:Sex:Week 0.35 8 2.6592 440 7.3182  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.000000000000006524 \*\*\*  
## Sex 0.000000044313915018 \*\*\*  
## Genotype:Sex 0.0003785 \*\*\*  
## Week 0.000000807486114017 \*\*\*  
## Genotype:Week 0.5621605   
## Sex:Week 0.000000032687988544 \*\*\*  
## Genotype:Sex:Week 0.000000003800258477 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.036838 0.000000000000000000065965  
## Genotype:Week 0.036838 0.000000000000000000065965  
## Sex:Week 0.036838 0.000000000000000000065965  
## Genotype:Sex:Week 0.036838 0.000000000000000000065965  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.45548 0.0004138 \*\*\*  
## Genotype:Week 0.45548 0.4884832   
## Sex:Week 0.45548 0.00008846 \*\*\*  
## Genotype:Sex:Week 0.45548 0.00003165 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.4918019 0.00027106400  
## Genotype:Week 0.4918019 0.49560397746  
## Sex:Week 0.4918019 0.00005183059  
## Genotype:Sex:Week 0.4918019 0.00001719992

#### 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) 532.87 1 8.2703 44 2834.9759  
## Genotype 0.05 1 8.2703 44 0.2678  
## Sex 2.85 1 8.2703 44 15.1725  
## Genotype:Sex 1.94 1 8.2703 44 10.3322  
## Week 0.18 8 1.6619 352 4.8093  
## Genotype:Week 0.04 8 1.6619 352 1.1269  
## Sex:Week 0.38 8 1.6619 352 9.9805  
## Genotype:Sex:Week 0.04 8 1.6619 352 1.1148  
## Pr(>F)   
## (Intercept) < 0.00000000000000022 \*\*\*  
## Genotype 0.60741   
## Sex 0.00033 \*\*\*  
## Genotype:Sex 0.00245 \*\*   
## Week 0.000012413834157 \*\*\*  
## Genotype:Week 0.34424   
## Sex:Week 0.000000000001516 \*\*\*  
## Genotype:Sex:Week 0.35237   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
##   
## Mauchly Tests for Sphericity  
##   
## Test statistic p-value  
## Week 0.091246 0.000000068327  
## Genotype:Week 0.091246 0.000000068327  
## Sex:Week 0.091246 0.000000068327  
## Genotype:Sex:Week 0.091246 0.000000068327  
##   
##   
## Greenhouse-Geisser and Huynh-Feldt Corrections  
## for Departure from Sphericity  
##   
## GG eps Pr(>F[GG])   
## Week 0.60821 0.0003967 \*\*\*  
## Genotype:Week 0.60821 0.3468870   
## Sex:Week 0.60821 0.00000001915 \*\*\*  
## Genotype:Sex:Week 0.60821 0.3532069   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## HF eps Pr(>F[HF])  
## Week 0.6929864 0.000186167258588  
## Genotype:Week 0.6929864 0.347078021621244  
## Sex:Week 0.6929864 0.000000002460276  
## Genotype:Sex:Week 0.6929864 0.353836764914562