

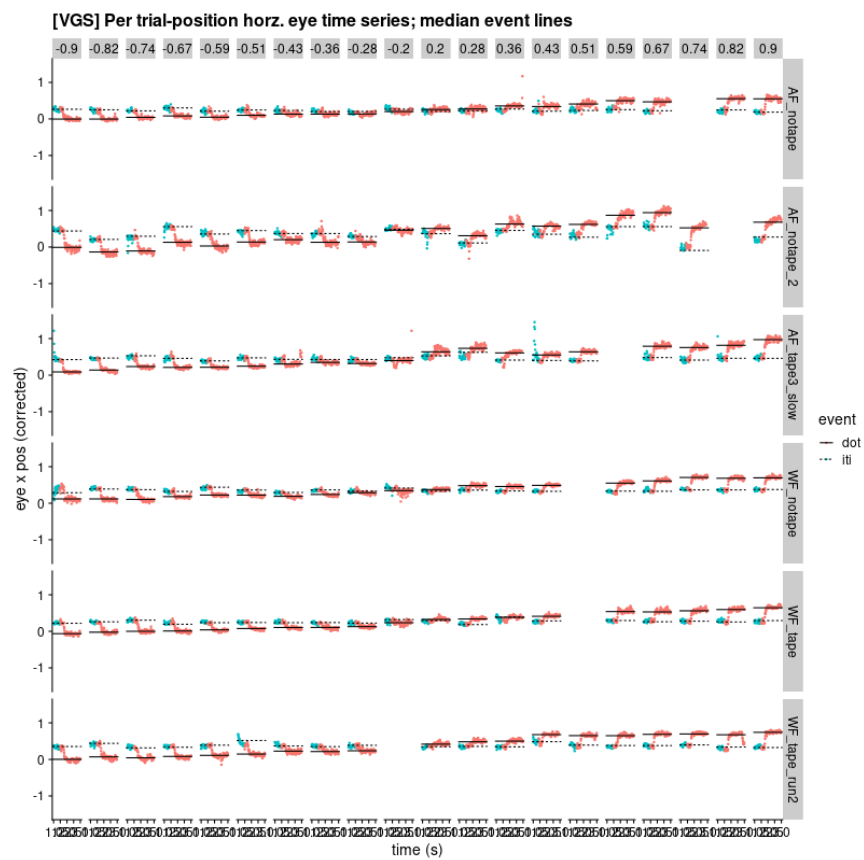
32 Channel Tape

2022-09-15

1 Raw

surprisingly clear raw X position traces

```
plot_raw(med_all)
```



2 Distribution

Looking at the distribution of eye fixation during the last second (post any visually guided saccade):

2.1 Tape vs no Tape

The difference between tape and no tape is not significant

```
dot_1s <- med_dot %>% filter(t>2) %>% mutate(xnorm=X_CorrectedGaze - dot)
t.test(data=dot_1s, xnorm ~ tape)
```

Welch Two Sample t-test

```
data: xnorm by tape
t = -1.6083, df = 6506.1, p-value = 0.1078
alternative hypothesis: true difference in means between group notape and group tape is
95 percent confidence interval:
 -0.006913934  0.000682061
sample estimates:
mean in group notape    mean in group tape
      0.000973872         0.004089809
```

2.1.1 Might matter for more for lower quality data

```
dot_1s %>% filter(fname=='AF') %>% t.test(data=., xnorm ~ tape)
```

Welch Two Sample t-test

```
data: xnorm by tape
t = -2.3179, df = 1540.2, p-value = 0.02058
alternative hypothesis: true difference in means between group notape and group tape is
95 percent confidence interval:
 -0.019246746 -0.001602955
sample estimates:
mean in group notape    mean in group tape
      0.002698138         0.013122989
```

```
dot_1s %>% filter(fname=='WF') %>% t.test(data=., xnorm ~ tape)
```

Welch Two Sample t-test

```
data: xnorm by tape
t = -1.4163, df = 2480.6, p-value = 0.1568
alternative hypothesis: true difference in means between group notape and group tape is
95 percent confidence interval:
 -0.0048420964  0.0007808953
sample estimates:
mean in group notape    mean in group tape
      -0.0024533921          -0.0004227915

summary(lm(data=dot_1s, xnorm ~ tape*fname))
```

Call:

```
lm(formula = xnorm ~ tape * fname, data = dot_1s)
```

Residuals:

	Min	1Q	Median	3Q	Max
	-0.31320	-0.03113	-0.00258	0.02607	2.86668

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.002698	0.001677	1.608	0.107780
tapetape	0.010425	0.002903	3.591	0.000331 ***
fnameWF	-0.005152	0.002899	-1.777	0.075660 .
tapetape:fnameWF	-0.008394	0.004102	-2.047	0.040741 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.07968 on 6782 degrees of freedom

Multiple R-squared: 0.004046, Adjusted R-squared: 0.003605

F-statistic: 9.184 on 3 and 6782 DF, p-value: 4.629e-06

2.2 Participant

but there is a significant difference between AF (lights on, long time in scanner) and WF (lights off)

```
t.test(data=dot_1s, xnorm ~ fname)
```

Welch Two Sample t-test

data: xnorm by fname

t = 3.7554, df = 4376.1, p-value = 0.0001753

alternative hypothesis: true difference in means between group AF and group WF is not 0

95 percent confidence interval:

0.003479549 0.011080645

sample estimates:

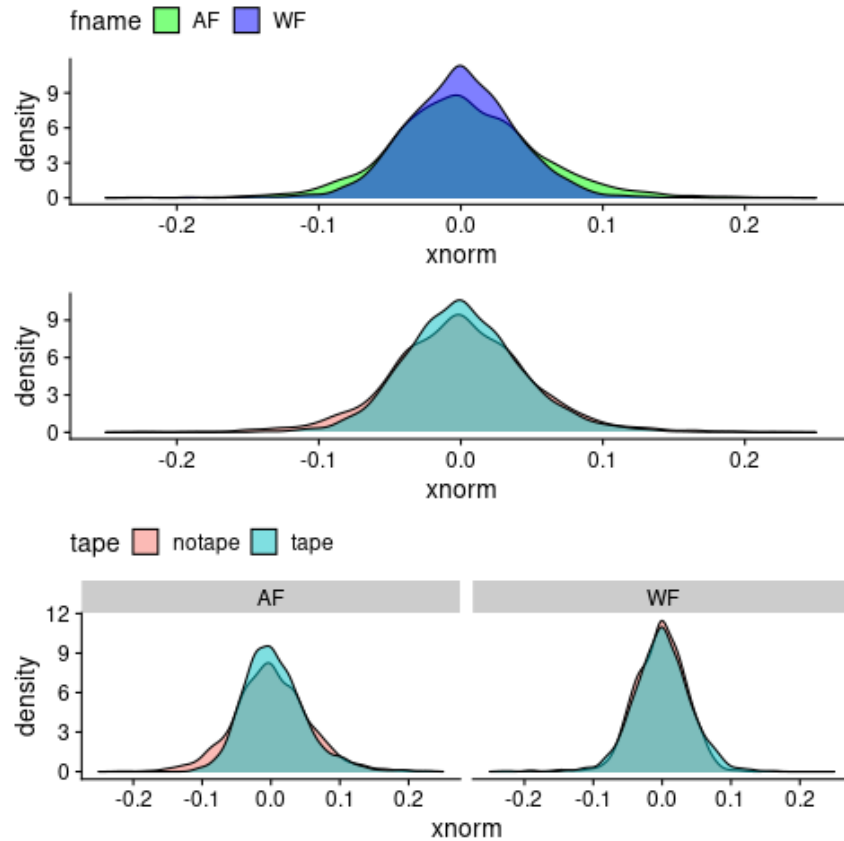
mean in group AF mean in group WF

0.006179244 -0.001100853

2.3 Both

For AF, tape/notape could also be first/second.

```
library(cowplot)
theme_set(theme_cowplot())
p <- ggplot(dot_1s) + aes(x=xnorm) + geom_density(alpha=.5) + xlim(x=c(-.25,.25))
plot_grid(
  p + aes(fill=fname) + theme(legend.position='top') +
    scale_fill_manual(values=c('green','blue')),
  p + aes(fill=tape) + theme(legend.position='bottom'),
  p + aes(fill=tape) + facet_grid(~fname) + theme(legend.position='none'),
  nrow=3)
```



2.4 plots

```
p_distside <- ggplot(med_dot) +
  aes(x=x_norm, fill=paste(tape,fname)) +
  cowplot::theme_cowplot() +
  geom_density(alpha=.4)+
  facet_grid(side~loc) +
  geom_vline(xintercept=0) +
  labs(x="median iti - x pos",
       title="distirubtion of x gaze during dot",
       fill="data from") +
  lims(x=c(-1,1)) + theme(legend.position='top')

p_distfname <- ggplot(med_dot) +
  aes(x=x_norm, fill=as.factor(pos)) +
  cowplot::theme_cowplot() +
  geom_density(alpha=.4)+
  facet_grid(tape~fname) +
  geom_vline(xintercept=0) +
  labs(x="median iti - x pos",
       title="",
```

```

    fill="stim position") +
  lims(x=c(-1,1))+ theme(legend.position='none')

p_dist_side_fname <- cowplot::plot_grid(p_distside, p_distfname,
  nrow=2,      rel_heights = c(2,1))
print(p_dist_side_fname)

```

