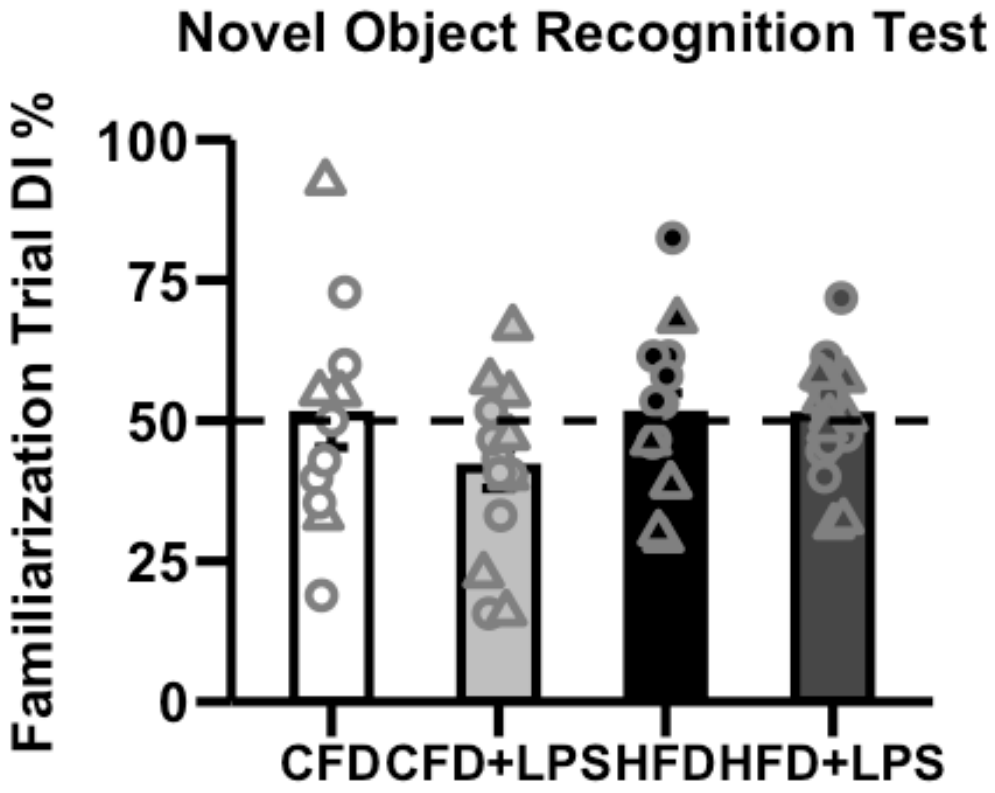
Script used for graphing behavior data

This script will go through a csv file containing a DV of interest and:

1. Plot the data as a bar graph
2. Show individual points
3. The points will vary depending on the Sex IV column in the csv file
4. Note: the DV will need to be changed manually per graph

```
library(ggplot2)
library(dplyr)
#read in data file
DATA = read.csv("NORT_PND22.csv", header = TRUE)

shapes <-c(21, 24) # circle and triangle for female/male
shapesPERGROUP <-shapes[as.factor(DATA$Sex)]

DATA_summary <- DATA %>% # the names of the new data frame and the data frame to be
summarised
  group_by(Condition) %>%   # the grouping variable
  summarise(mean = mean(Fam_DI),  # calculates the mean of each group
            sd = sd(Fam_DI), # calculates the standard deviation of each group
            n = n(),  # calculates the sample size per group
            SE = sd(Fam_DI )/sqrt(n())) # calculates the standard error of each
group

DATAPlot <- ggplot(DATA_summary, aes(Condition , mean)) +
  geom_col(width=0.45, colour="black", lwd=1.5) + aes(fill = Condition) +

  #fill with specific colors: light to dark
  scale_fill_manual(values = c("#FFFFFF", "#BFBFBF", "#000000", "#474747"),
guide=FALSE) +

  #plot standard error instead of sd
  geom_errorbar(aes(ymin = mean - SE, ymax = mean + SE), width=0.2, lwd=1.5) +
  geom_point(data = DATA, aes(x = Condition, y = Fam_DI, shape = shapesPERGROUP),

             #0.000005 for even layout of jitter
             position=position_jitter(width=0.09,height=0),
             #pch gives you different scatter types, 20 gives filled-in dots
             col ="#808080", stroke=2,pch=shapesPERGROUP,
             alpha=1,
             #size gives different point sizes
             size=2.5,
             show.legend=TRUE)

DATAPlot + labs(y = "Familiarization Trial DI %", x="") + theme_classic() +
```

```
  #add graph title
  ggtitle("Novel Object Recognition Test\n") +
  theme(plot.title = element_text(hjust=0.5, size=18, face='bold'))+
  theme(axis.title.x = element_text(face='bold',size=18,hjust=.5, margin =
margin(b=0,t=10,r=0,l=0)),
        axis.title.y = element_text(face='bold',size=18, color='black', margin =
margin(b=0,t=0,r=10,l=0)),
        axis.text.x = element_text(size=16,color='black', face='bold'),
        axis.text.y = element_text(size=18,color='black', face='bold')) +
  #change axes (ticks) thickness, length of ticks
  theme(axis.line = element_line(size = 1.5), axis.ticks = element_line(colour =
"black", size = 1.5), axis.ticks.length = unit(0.4, "cm")) +
  #change size of graph
  theme(aspect.ratio = 1/1.25) +
  geom_hline(yintercept=50, linetype="dashed", size=1.25) +
  # Make bars touch x-axis, and specify breaks between axis lines
  scale_y_continuous(expand = c(0,0), breaks = seq(0, 100, 25) ) +
  #change y-axis range
  coord_cartesian(ylim = c(0, 100))
```




```
# Save plot with ggsave, scale changes how big each element is, dpi = resolution
#ggsave(file="Fam_DI_new.png", path = NULL,scale =3, width = 2.5, height = 1.9,
units = "in", dpi = 600)
```