

raincloud plot, modified with reporting S.E. of the group

A fun attempt to play with Raincloud Plots!

First, import the data here

Set up the needed libraries

Let's define a theme to make pretty plots

```
raincloud_theme <- theme(  
  #axis.title.x = element_blank(),  
  #axis.title.y = element_blank(),  
  axis.text = element_text(size = 14, face="bold", color="black"),  
  legend.title=element_text(size=16),  
  legend.text=element_text(size=16),  
  legend.position = "right",  
  panel.border = element_blank(),  
  panel.grid.minor = element_blank(),  
  panel.background = element_blank(),  
  panel.grid.major = element_blank(),  
  axis.line.x = element_line(colour = 'black', size=0.5, linetype='solid'),  
  axis.line.y = element_line(colour = 'black', size=0.5, linetype='solid'))
```

Summarising the data: in this plot we are interested in the average stimulus rating for each participant, separately for category (food vs curiosity) and decision (accept vs reject)

```
data_by_subj <- aggregate(raw_rate~participant+category+choice, data=df, FUN=mean)  
  
data_by_subj["Decision"] <-NA  
data_by_subj$Decision[data_by_subj$choice==0] <- "Reject"  
data_by_subj$Decision[data_by_subj$choice==1] <- "Accept"
```

let's also calculate some summary statistics for each condition (i.e. 1.food-accept, 2.food-reject, 3.curiosity-accept, 4.curiosity-reject), including mean, S.D., & S.E. of rating. They will be used in plotting `geom_pointrange`

```
gbq1 <- aggregate(raw_rate~category+choice, data=df, FUN=mean)  
names(gbq1)[3] <- "mean_rate"  
gbq2 <- aggregate(raw_rate~category+choice, data=df, FUN=sd)  
names(gbq2)[3] <- "sd_rate"  
gbq <- merge(gbq1, gbq2, by = c("category", "choice"))  
  
data.frame(gbq)
```

```
##   category choice mean_rate sd_rate  
## 1 curiosity     0  3.597118 1.875814  
## 2 curiosity     1  4.859530 1.862462  
## 3    food      0  3.084396 1.917381  
## 4    food      1  5.319922 1.780219
```

```

names(gbq)=c("category","choice","mean_rate","sd_rate")

gbq["se_rate"] <- gbq$sd_rate/sqrt(length(unique(df$participant)))

gbq["Decision"] <- NA
gbq$Decision[gbq$choice==0] <- "Reject"
gbq$Decision[gbq$choice==1] <- "Accept"

gbq$ymin = with(gbq, mean_rate - se_rate)
gbq$ymax = with(gbq, mean_rate + se_rate)

```

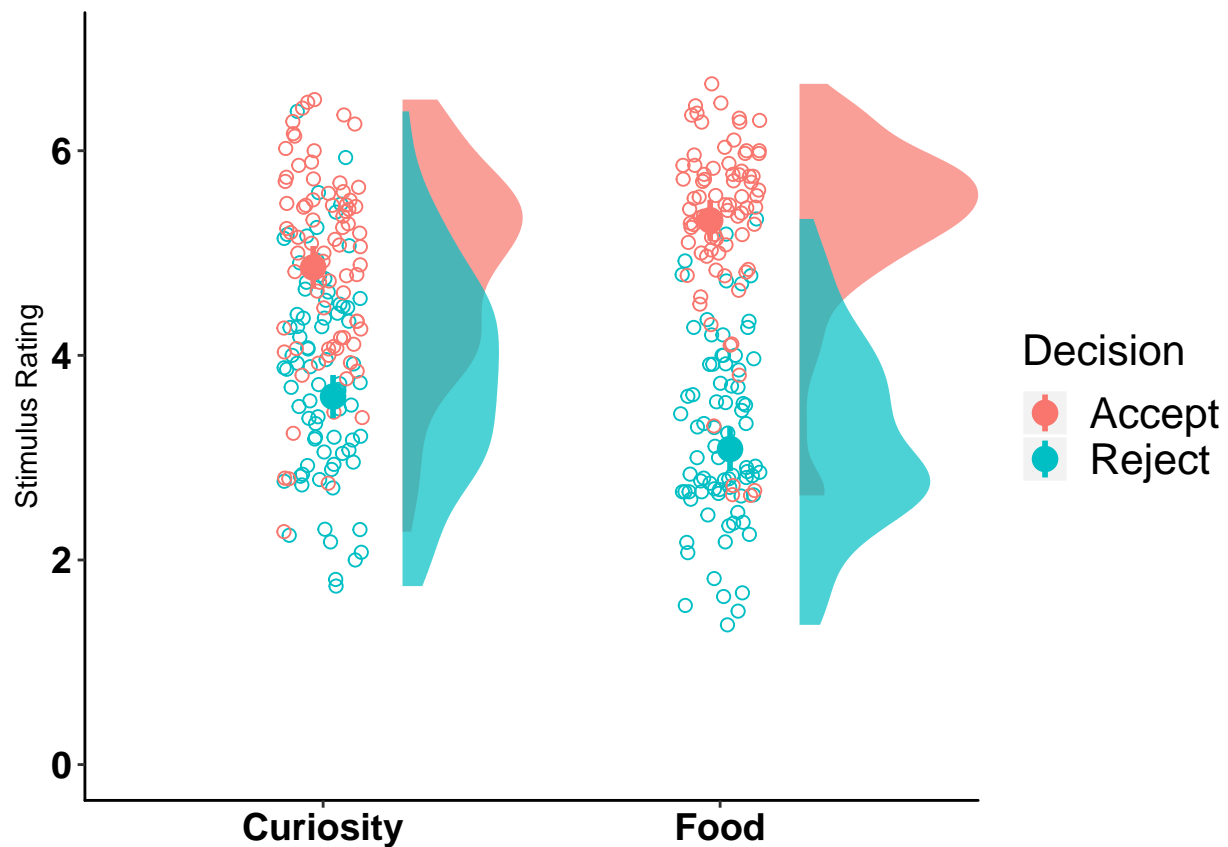
Ready to plot?!

```

g <- ggplot() +
  geom_flat_violin(data = data_by_subj, aes(y = raw_rate, x = category, fill=Decision), position = position_jitter, width=0.5) +
  geom_point(data=data_by_subj, aes(y = raw_rate, x = category, color = Decision), position = position_jitter, width=0.5) +
  geom_pointrange (data=gbq, aes(y = mean_rate, x = category, ymin= ymin, ymax= ymax, color=Decision), position = position_jitter, width=0.5) +
  scale_x_discrete(labels=c("Curiosity","Food")) +
  ylim(0,7) +

  #guides(fill=guide_legend(title="Choices")) +
  raincloud theme +
  labs(x=NULL, y="Stimulus Rating")
g

```



If you want to save the plot as an image

```
ggsave("D:/Github_folder/R_ggplot_plot/rainplot_trial.jpg", width = 20, height = 20, units = "cm", dpi=
```