

acoustic_analysis

```
"  
cur_exp = "exp7"  
features = c("duration", "meanIntensity", "meanpit")  
# info = c('participant','verb','condition', 'word', 'word_num')  
info = c('participant','item_id','location_condition', 'word', 'word_num', 'present_num')  
bRemove_outliers = 0  
# I have experimented with removing outliers, it doesn't have much effect on duration, some people with  
  
tAll_trials = read.csv(file.path '..', cur_exp, 'tAll_trials.csv'))  
  
df0 = read.csv(paste0('measure_', cur_exp, '.csv'), header = T)  
df0$location_condition = NA  
df0$item_id = NA  
  
for (iR in 1:nrow(df0)){  
  df0$location_condition[iR] = as.character(tAll_trials[tAll_trials$trial_id == df0$trialId[iR], 'location_condition'])  
  df0$item_id[iR] = as.character(tAll_trials[tAll_trials$trial_id == df0$trialId[iR], 'filler_or_item_id'])  
  df0$present_num[iR] = as.numeric(rownames(tAll_trials[tAll_trials$trial_id == df0$trialId[iR],]))  
}  
  
df1 = df0[startsWith(df0$item_id, "item"),]  
  
# df0 = read.csv("measure_nonrhyming_84total_60No_24Yes_20181210.csv", header = T)  
# df0 = transform(df0, trialId=as.numeric(trialId))  
# sort(df0$trialId, decreasing = FALSE)  
# colnamesC(df1)  
  
df2 = df1[df1$word != 'sp',] # there can be sp everywhere not just beginning or end  
# code for word_num  
df2 <- df2 %>%  
  dplyr::group_by(participant, trialId) %>%  
  # dplyr::group_by(participant, question, trialId) %>%  
  dplyr::mutate(word_num=1:dplyr::n()) %>%  
  dplyr::select(c(info, features))  
  
## Adding missing grouping variables: `trialId`  
c(df_Verb, df_Agent, df_Patient) %<-% process_data_with_yes(df2)  
  
## [1] 0  
  
# c(df_Verb, df_Agent, df_Patient) %<-% process_data_without_yes(df2)  
  
df_Agent$condition = mapvalues(df_Agent$location_condition, c('Agent'), c('contrast'))  
df_Verb$condition = mapvalues(df_Verb$location_condition, c('Verb'), c('contrast'))  
df_Patient$condition = mapvalues(df_Patient$location_condition, c('Patient'), c('contrast'))  
  
df_Agent$Location = 'Agent'  
df_Verb$Location = 'Verb'
```

```

df_Patient$Location = "Patient"

combined_dataset = rbind(df_Agent,df_Verb,df_Patient)

# http://www.cookbook-r.com/Graphs/Plotting\_means\_and\_error\_bars\_\(ggplot2\)/

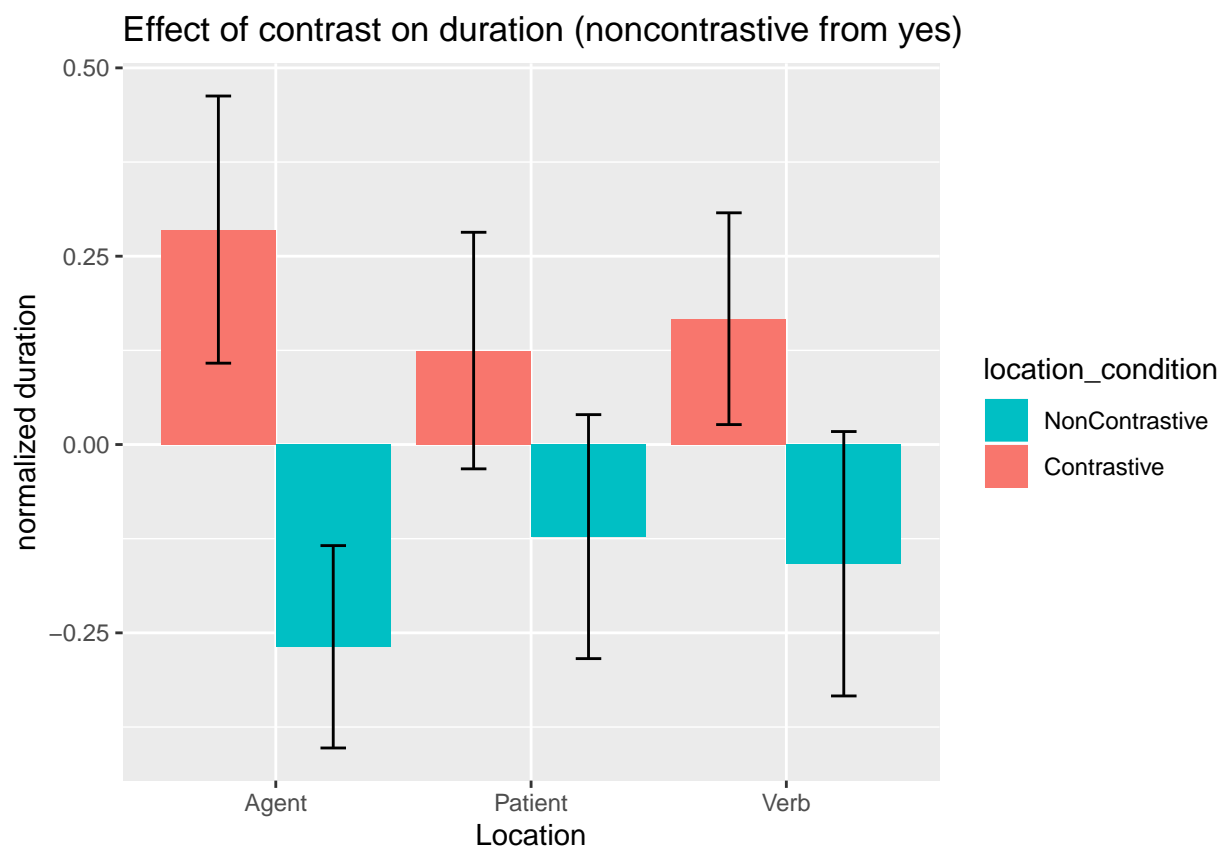
for (iF in features){
  print(iF)

  summarized_dataset = summarySE(combined_dataset,measurevar=iF ,groupvars=c('Location','condition'))

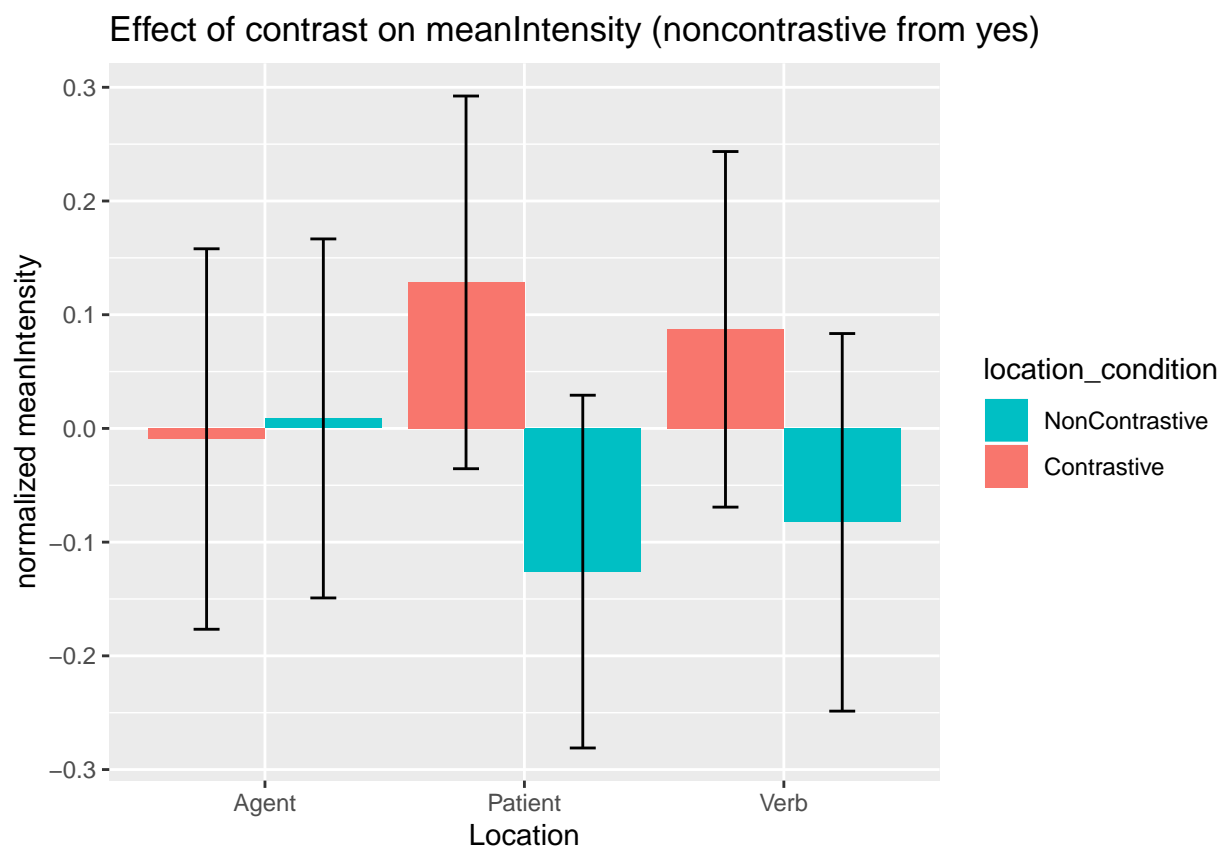
  print(
    ggplot(summarized_dataset, aes(x=Location, y=get(iF), fill=condition)) +
    geom_bar(position=position_dodge(), stat="identity") +
    geom_errorbar(aes(ymin=get(iF)-ci, ymax=get(iF)+ci),
                  width=.2,
                  position=position_dodge(.9))+
    xlab("Location") +
    ylab(paste0("normalized ", iF)) +
    scale_fill_hue(name="location_condition",
                  breaks=c("Control", "contrast"),
                  labels=c("NonContrastive", "Contrastive")) +
    ggtitle(paste0('Effect of contrast on ', iF, ' (noncontrastive from yes)'))
  )
}

## [1] "duration"

```

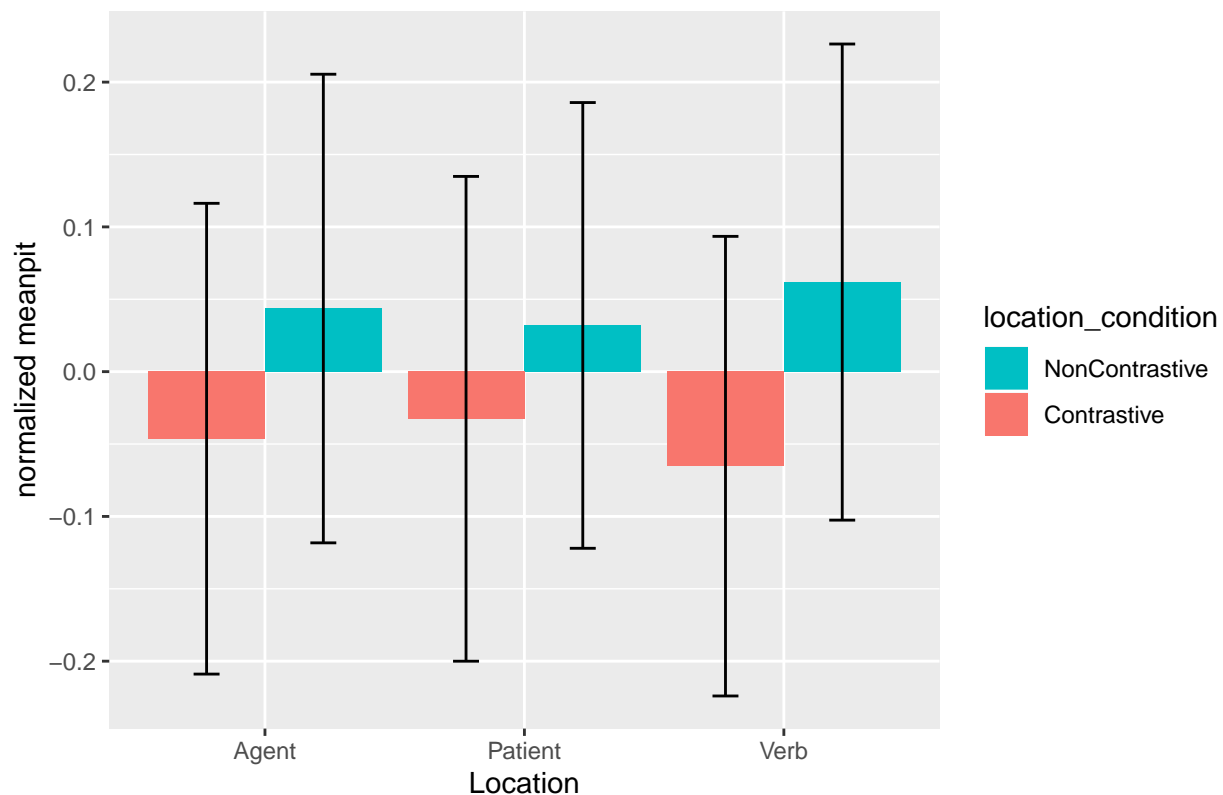


```
## [1] "meanIntensity"
```



```
## [1] "meanpit"
```

Effect of contrast on meanpit (noncontrastive from yes)



```
c(df_Verb, df_Agent, df_Patient) %<-% process_data_without_yes(df2)
```

```
## [1] 0
```

```
for (iF in features){
  print(iF)

  df_Agent$condition = mapvalues(df_Agent$location_condition, c('Agent'), c('contrast'))
  df_Verb$condition = mapvalues(df_Verb$location_condition, c('Verb'), c('contrast'))
  df_Patient$condition = mapvalues(df_Patient$location_condition, c('Patient'), c('contrast'))

  df_Agent$Location = 'Agent'
  df_Verb$Location = 'Verb'
  df_Patient$Location = "Patient"

  combined_dataset = rbind(df_Agent, df_Verb, df_Patient)

  # http://www.cookbook-r.com/Graphs/Plotting\_means\_and\_error\_bars\_\(ggplot2\)/

  summarized_dataset = summarySE(combined_dataset, measurevar=iF, groupvars=c('Location', 'condition'))

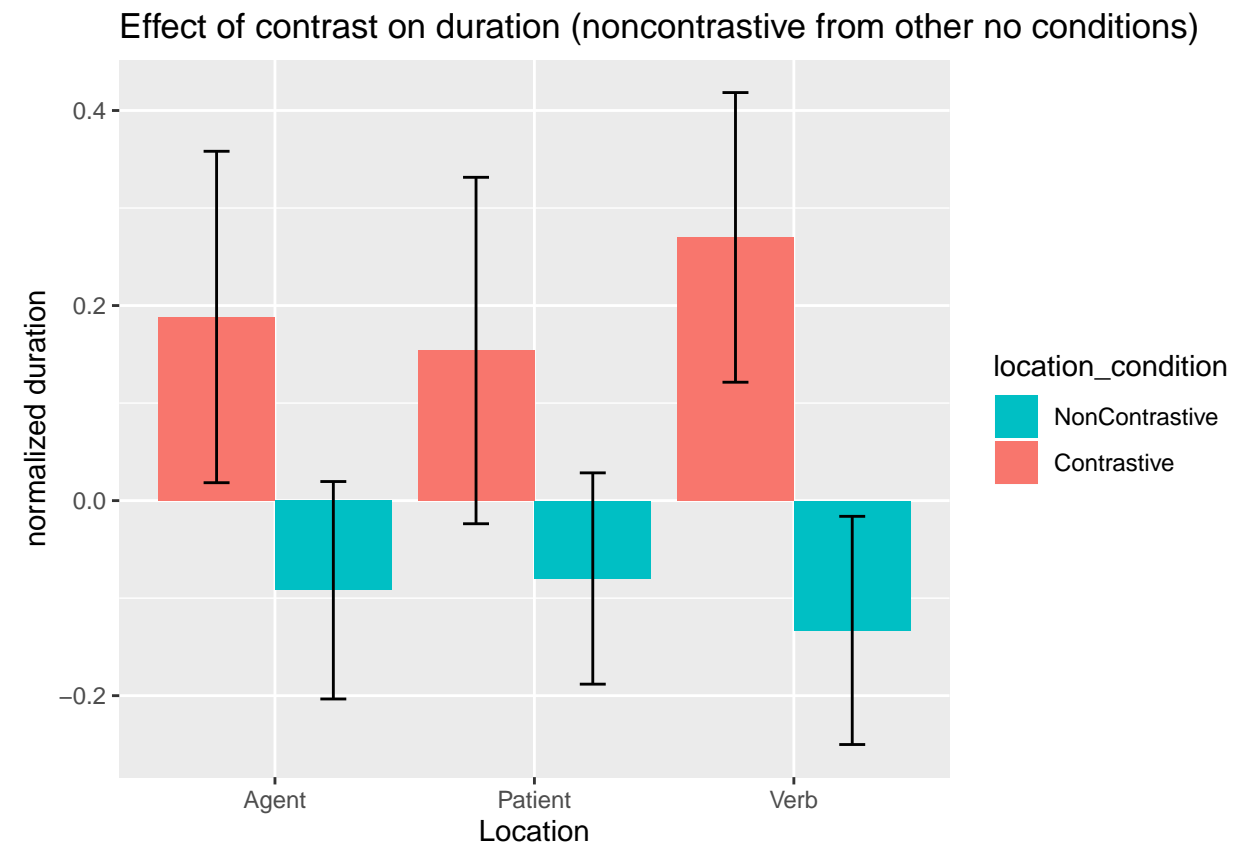
  print(
    ggplot(summarized_dataset, aes(x=Location, y=get(iF), fill=condition)) +
    geom_bar(position=position_dodge(), stat="identity") +
    geom_errorbar(aes(ymin=get(iF)-ci, ymax=get(iF)+ci),
      width=.2,
```

```

        position=position_dodge(.9))+
xlab("Location") +
ylab(paste0("normalized ", iF)) +
scale_fill_hue(name="location_condition",
               breaks=c("Control", "contrast"),
               labels=c("NonContrastive", "Contrastive")) +
ggtitle(paste0('Effect of contrast on ', iF, ' (noncontrastive from other no conditions)'))
)
}

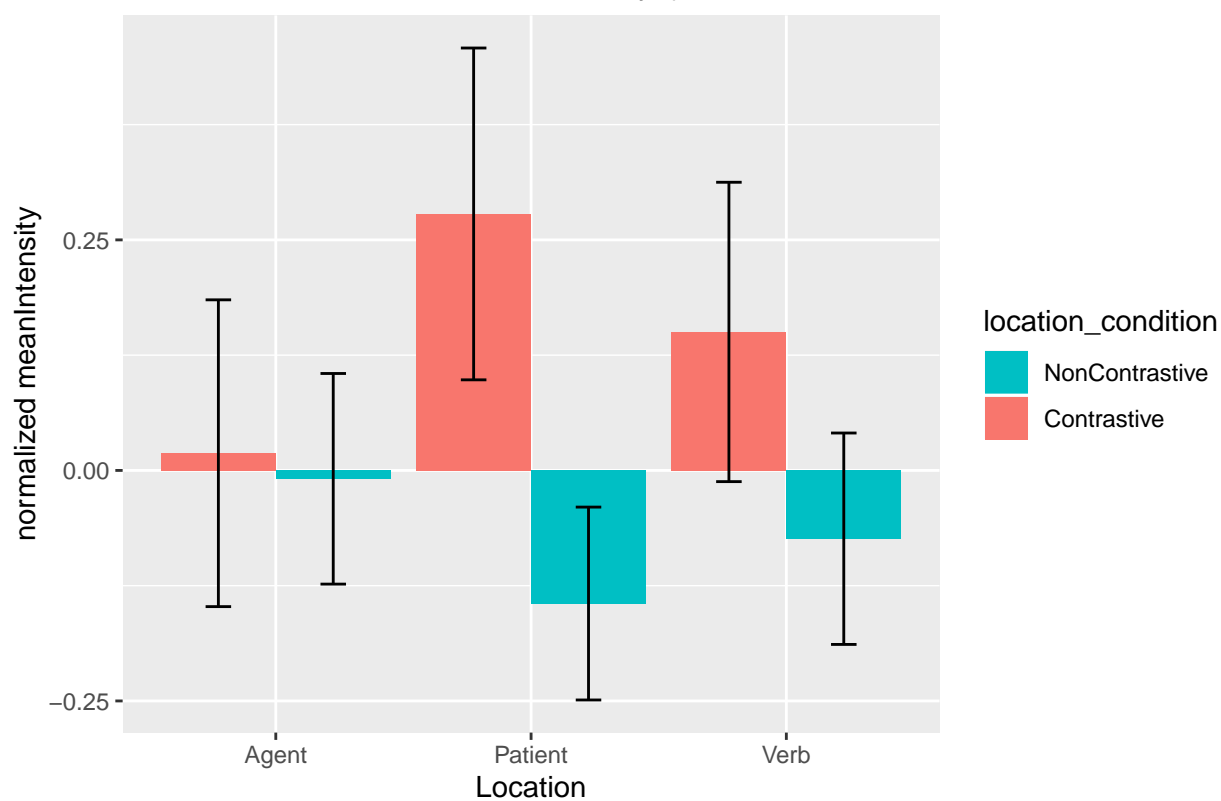
```

```
## [1] "duration"
```



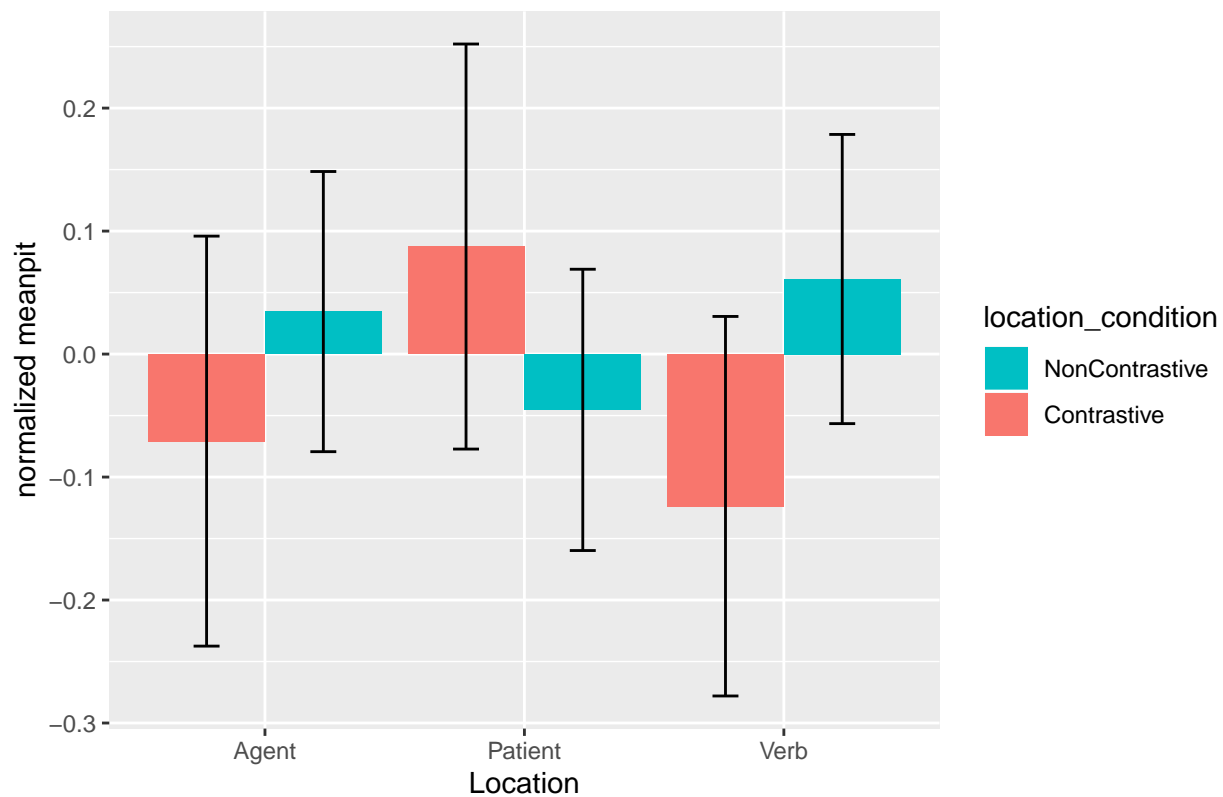
```
## [1] "meanIntensity"
```

Effect of contrast on meanIntensity (noncontrastive from other no conditio



```
## [1] "meanpit"
```

Effect of contrast on meanpit (noncontrastive from other no conditions)



```
# ggplot(df_Agent, aes(x=present_num, y=duration, color=condition)) +
#   geom_point()
```

This the analysis for exp7. The parameters of all exps can be seen at https://github.com/Xinzhu-Fang/prosody_study_exp/blob/master/tAll_exps.csv.

The trial-by-trial design of this exp can be seen at https://github.com/Xinzhu-Fang/prosody_study_exp/blob/master/exp7/tAll_trials.csv

20 workers and 592 trials are included in this analysis.

```
# for (iF in features){
#   run_regression("Agent", iF)
# }
#
#   run_regression("Patient", iF)
# }
#
#   run_regression("Verb", iF)
# }
# }
# r = lmer(get(observation) ~ condition + (1 | participant) + (1 | verb), data=df)
```