

```

library(readxl)
library(lme4)

## Loading required package: Matrix
library(lmerTest)

##
## Attaching package: 'lmerTest'
## The following object is masked from 'package:lme4':
##
##      lmer
## The following object is masked from 'package:stats':
##
##      step
library(car)

## Loading required package: carData
library(MuMIn)
library(afex)

## *****
## Welcome to afex. For support visit: http://afex.singmann.science/
## - Functions for ANOVAs: aov_car(), aov_ez(), and aov_4()
## - Methods for calculating p-values with mixed(): 'S', 'KR', 'LRT', and 'PB'
## - 'afex_aov' and 'mixed' objects can be passed to emmeans() for follow-up tests
## - NEWS: emmeans() for ANOVA models now uses model = 'multivariate' as default.
## - Get and set global package options with: afex_options()
## - Set orthogonal sum-to-zero contrasts globally: set_sum_contrasts()
## - For example analyses see: browseVignettes("afex")
## *****

##
## Attaching package: 'afex'
## The following object is masked from 'package:lme4':
##
##      lmer
data <- read_excel("../Data/PredictingOutcomes_ParticipantPredictions.xlsx", sheet = "Study 2A")

# divide the data based on the generator
data1 <- data[data$generator == "analyst",]
data2 <- data[data$generator == "bingo",]
data3 <- data[data$generator == "stock",]

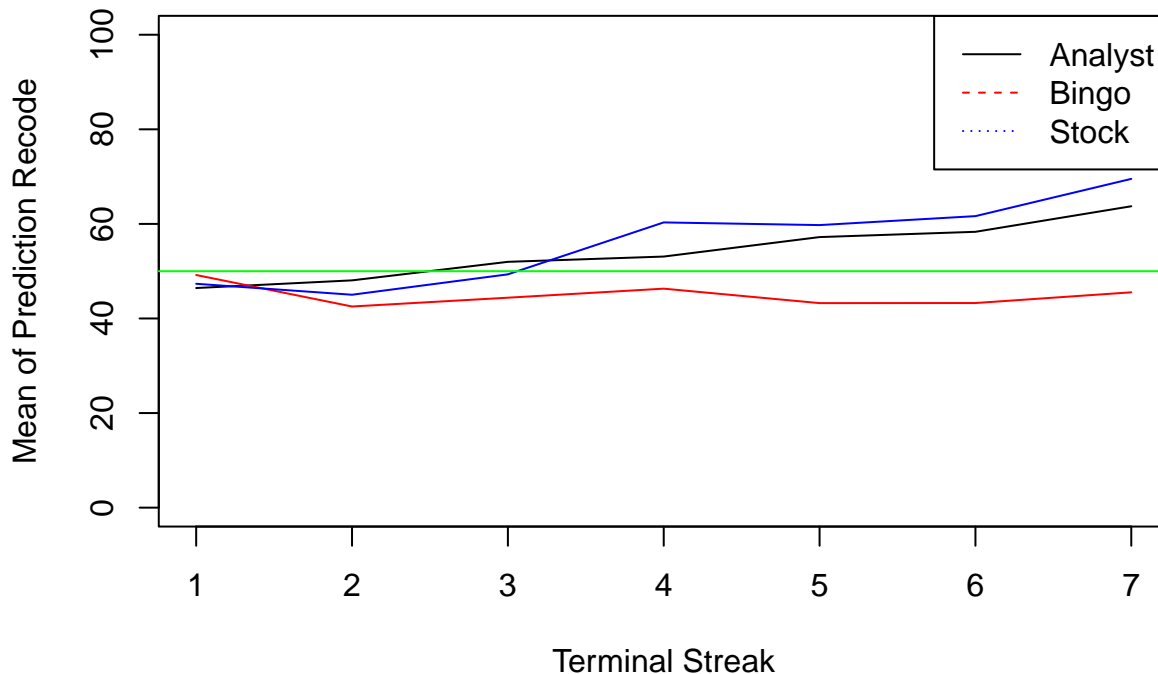
calculate the mean of prediciotn_recode for each terminwal streak from 1 to 7
mean1 <- aggregate(data1$prediction_recode, by = list(data1$terminal_streak_length), FUN = mean)
mean2 <- aggregate(data2$prediction_recode, by = list(data2$terminal_streak_length), FUN = mean)
mean3 <- aggregate(data3$prediction_recode, by = list(data3$terminal_streak_length), FUN = mean)

plot(mean1$Group.1,mean1$x, type = "l",ylim=c(0,100), xlab = "Terminal Streak", ylab = "Mean of Predict
lines(mean2$Group.1,mean2$x, col = "red")
lines(mean3$Group.1,mean3$x, col = "blue")

```

```
abline(h = 50, col = "green")
legend("topright", legend = c("Analyst", "Bingo", "Stock"), col = c("black", "red", "blue"), lty = 1:3)
```

## Mean of Prediction Recode for each Terminal Streak



```
aov1<-aov_ez('participant_id','prediction_recode',data, between=c('generator'),within=c('terminal_streak'))
```

```
## Converting to factor: generator
```

```
## Warning: More than one observation per design cell, aggregating data using `fun_aggregate = mean`.
## To turn off this warning, pass `fun_aggregate = mean` explicitly.
```

```
## Contrasts set to contr.sum for the following variables: generator
```

```
aov1
```

```
## Anova Table (Type 3 tests)
```

```
##
```

```
## Response: prediction_recode
```

	Effect	df	MSE	F	ges	p.value
## 1	generator	2, 153	1915.52	6.96 **	.040	.001
## 2	terminal_streak_length	4.08, 624.73	555.43	9.82 ***	.034	<.001
## 3	generator:terminal_streak_length	8.17, 624.73	555.43	3.61 ***	.025	<.001

```
## ---
```

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

```
##
```

```
## Sphericity correction method: GG
```

```
pairwise.t.test(data$prediction_recode, data$generator, p.adjust.method = "bonferroni")
```

```
##
```

```
## Pairwise comparisons using t tests with pooled SD
```

```
##
```

```
## data: data$prediction_recode and data$generator
```

```
##
##      analyst bingo
## bingo 0.249    -
## stock 0.722    0.012
##
## P value adjustment method: bonferroni
```