Interrater_cor

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Cronbach Alpha

This script compute the interrater reliabilty between my labels and the annotators' labels

```
labels <- read.csv("~/phd_work/cognitive_distortion/important_data/emotions_history.csv", header = F, fi
names(labels) <- c('id','userid','label','time')
#number of labels annotated
length(labels$id)
```

```
## [1] 794
```

```
mylab <- read.csv("~/phd_work/cognitive_distortion/important_data/twoM_newLabels2.csv", header = T, fil
#recode my label 1-> 2 , 2->1
mylab <- mylab[, c('id','negative_ny')]
mylab$negative_ny <- recode_factor(mylab$negative_ny, '1' = '2' , '2' = '1', '3' = '3' , '4'= '4', '5'=
```

```
mylab$negative_ny <- as.numeric(as.character(mylab$negative_ny))

#remove duplicated entries. Duplicated entries need to be reanalyzed later
l <-  labels[!duplicated(labels$id),]
#numebr of non-repeated annotation
length(l$id)
```

```
## [1] 781
```

```
interCor <- merge(mylab, l, by='id')
cor.test(interCor$negative_ny,interCor$label)
```

```
##
##  Pearson's product-moment correlation
##
## data:  interCor$negative_ny and interCor$label
## t = 21.734, df = 762, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.5728158 0.6605569
## sample estimates:
##       cor
## 0.6186113
```

```
CronBac <- interCor[, c('label','negative_ny')]
alpha(CronBac)
```

```
## Warning in matrix(unlist(drop.item), ncol = 8, byrow = TRUE): data length
## [12] is not a sub-multiple or multiple of the number of columns [8]
```

```
##
## Reliability analysis
## Call: alpha(x = CronBac)
##
```

```
##   raw_alpha std.alpha G6(smc) average_r S/N   ase mean   sd
##       0.76      0.76    0.62      0.62 3.2 0.017  2.2 0.67
##
##  lower alpha upper     95% confidence boundaries
## 0.73 0.76 0.8
##
##  Reliability if an item is dropped:
##             raw_alpha std.alpha G6(smc) average_r  S/N alpha se
## label            0.62      0.62    0.38      0.62   NA       NA
## negative_ny      0.38      0.62      NA        NA 0.62    0.028
##
##  Item statistics
##               n raw.r std.r r.cor r.drop mean   sd
## label       764  0.91   0.9  0.71   0.62  2.2 0.78
## negative_ny 764  0.89   0.9  0.71   0.62  2.1 0.72
##
## Non missing response frequency for each item
##                1    2    3    4    5 miss
## label       0.10 0.72 0.07 0.11 0.01    0
## negative_ny 0.12 0.75 0.04 0.09 0.00    0
```

statistics of annotators

```
table(interCor$userid)
```

```
##
## %22334% %33442% %44553%
##     402     230     132
```