R Notebook

```
library(MVN)
```

```
## Warning: package 'MVN' was built under R version 3.6.3
```

```
## Registered S3 method overwritten by 'GGally':
##   method from
##   +.gg   ggplot2
```

```
## sROC 0.1-2 loaded
```

```
mvn(data_AESTHEMOS)
```

```
## $multivariateNormality
##              Test        Statistic p value Result
## 1 Mardia Skewness 37676.4921123524       0     NO
## 2 Mardia Kurtosis 91.4617470260676       0     NO
## 3             MVN             <NA>    <NA>     NO
##
## $univariateNormality
##            Test     Variable Statistic   p value Normality
## 1  Shapiro-Wilk  challenge      0.7584  <0.001      NO
## 2  Shapiro-Wilk   delight       0.8230  <0.001      NO
## 3  Shapiro-Wilk     calm        0.8044  <0.001      NO
## 4  Shapiro-Wilk   curious       0.8691  <0.001      NO
## 5  Shapiro-Wilk    liked        0.8855  <0.001      NO
## 6  Shapiro-Wilk  fascinated     0.8388  <0.001      NO
## 7  Shapiro-Wilk  wonderful      0.7988  <0.001      NO
## 8  Shapiro-Wilk invigorated     0.7918  <0.001      NO
## 9  Shapiro-Wilk   engaged       0.8848  <0.001      NO
## 10 Shapiro-Wilk   baffled       0.6259  <0.001      NO
## 11 Shapiro-Wilk     ugly        0.5185  <0.001      NO
## 12 Shapiro-Wilk   deepmean      0.8003  <0.001      NO
## 13 Shapiro-Wilk  deepmoved      0.7391  <0.001      NO
## 14 Shapiro-Wilk melancholic     0.7099  <0.001      NO
## 15 Shapiro-Wilk  energized      0.8125  <0.001      NO
## 16 Shapiro-Wilk    angry        0.4203  <0.001      NO
## 17 Shapiro-Wilk  enchanted      0.8079  <0.001      NO
## 18 Shapiro-Wilk    bored        0.6466  <0.001      NO
## 19 Shapiro-Wilk   relaxed       0.8006  <0.001      NO
## 20 Shapiro-Wilk   insight       0.6373  <0.001      NO
## 21 Shapiro-Wilk    amused       0.7200  <0.001      NO
## 22 Shapiro-Wilk     sad         0.6487  <0.001      NO
## 23 Shapiro-Wilk   confused      0.5844  <0.001      NO
## 24 Shapiro-Wilk  aggressive     0.4791  <0.001      NO
## 25 Shapiro-Wilk sentimental     0.7221  <0.001      NO
## 26 Shapiro-Wilk   worried       0.6662  <0.001      NO
## 27 Shapiro-Wilk  nostalgic      0.7091  <0.001      NO
## 28 Shapiro-Wilk  surprised      0.7527  <0.001      NO
```

```
## 29 Shapiro-Wilk  oppressive     0.6445  <0.001      NO
## 30 Shapiro-Wilk   sublime       0.7404  <0.001      NO
## 31 Shapiro-Wilk spurredmeon     0.7457  <0.001      NO
## 32 Shapiro-Wilk indifferent     0.6362  <0.001      NO
## 33 Shapiro-Wilk  impressed      0.8298  <0.001      NO
## 34 Shapiro-Wilk distasteful     0.5361  <0.001      NO
## 35 Shapiro-Wilk   touched       0.7684  <0.001      NO
## 36 Shapiro-Wilk  unsettling     0.7080  <0.001      NO
## 37 Shapiro-Wilk sparkinterst    0.8810  <0.001      NO
## 38 Shapiro-Wilk    happy        0.7812  <0.001      NO
## 39 Shapiro-Wilk     awe         0.6979  <0.001      NO
## 40 Shapiro-Wilk  motivated      0.7673  <0.001      NO
## 41 Shapiro-Wilk    funny        0.4466  <0.001      NO
## 42 Shapiro-Wilk    liking       0.8840  <0.001      NO
##
## $Descriptives
##                n     Mean   Std.Dev Median Min Max 25th 75th        Skew
## challenge    765 1.839216 1.0945029      1   1   5    1    2  1.19402746
## delight      765 2.262745 1.3489322      2   1   5    1    3  0.65043019
## calm         765 2.177778 1.3370585      2   1   5    1    3  0.78928324
## curious      765 2.329412 1.2113059      2   1   5    1    3  0.51105906
## liked        765 2.856209 1.4078050      3   1   5    2    4  0.07845121
## fascinated   765 2.228758 1.2620971      2   1   5    1    3  0.66105808
## wonderful    765 2.158170 1.3302076      2   1   5    1    3  0.75557801
## invigorated  765 2.022222 1.2132677      2   1   5    1    3  0.87100711
## engaged      765 2.495425 1.2570399      2   1   5    1    3  0.35385667
## baffled      765 1.535948 0.9422191      1   1   5    1    2  1.74352373
## ugly         765 1.461438 1.0117842      1   1   5    1    1  2.29332317
## deepmean     765 2.071895 1.2464850      2   1   5    1    3  0.87656001
## deepmoved    765 1.850980 1.1628025      1   1   5    1    2  1.27402596
## melancholic  765 1.720261 1.0561066      1   1   5    1    2  1.39367240
## energized    765 2.113725 1.2496627      2   1   5    1    3  0.83380593
## angry        765 1.265359 0.7245978      1   1   5    1    1  3.20015691
## enchanted    765 2.053595 1.1827748      2   1   5    1    3  0.79714771
## bored        765 1.666667 1.1197887      1   1   5    1    2  1.59690421
## relaxed      765 2.142484 1.3161647      2   1   5    1    3  0.81016064
## insight      765 1.555556 0.9550698      1   1   5    1    2  1.75009078
## amused       765 1.837908 1.1888997      1   1   5    1    3  1.16864997
## sad          765 1.611765 1.0256489      1   1   5    1    2  1.64993296
## confused     765 1.447059 0.8569900      1   1   5    1    2  2.05840667
## aggressive   765 1.313725 0.7525749      1   1   5    1    1  2.68999362
## sentimental  765 1.806536 1.1459965      1   1   5    1    2  1.26275473
## worried      765 1.705882 1.1342038      1   1   5    1    2  1.46361617
## nostalgic    765 1.754248 1.1043694      1   1   5    1    2  1.30466930
## surprised    765 1.823529 1.0763865      1   1   5    1    3  1.04589734
## oppressive   765 1.643137 1.0875163      1   1   5    1    2  1.70449884
## sublime      765 1.806536 1.1005516      1   1   5    1    2  1.23424217
## spurredmeon  765 1.820915 1.1059486      1   1   5    1    2  1.22672137
## indifferent  765 1.534641 0.9197741      1   1   5    1    2  1.81337535
## impressed    765 2.145098 1.2187959      2   1   5    1    3  0.77013642
## distasteful  765 1.471895 0.9991133      1   1   5    1    1  2.18481765
## touched      765 1.959477 1.2160272      1   1   5    1    3  1.03692572
## unsettling   765 1.879739 1.2785667      1   1   5    1    3  1.24202876
## sparkinterst 765 2.430065 1.2298153      2   1   5    1    3  0.46897641
```

```
## happy        765 2.105882 1.3383312      2   1   5    1    3  0.87327699
## awe          765 1.683660 1.0280400      1   1   5    1    2  1.43953065
## motivated    765 1.971242 1.2350506      1   1   5    1    3  1.04120831
## funny        765 1.299346 0.7712518      1   1   5    1    1  2.91880511
## liking       765 3.345098 1.3038877      4   1   5    2    4 -0.42585541
##                  Kurtosis
## challenge     0.54410974
## delight      -0.89652797
## calm         -0.68993029
## curious      -0.81802501
## liked        -1.30339568
## fascinated   -0.74835448
## wonderful    -0.77769301
## invigorated  -0.41807039
## engaged      -0.97419638
## baffled       2.21140234
## ugly          4.30586089
## deepmean     -0.39397885
## deepmoved     0.61324135
## melancholic   1.03966524
## energized    -0.42503192
## angry        10.54819913
## enchanted    -0.58192528
## bored         1.42455027
## relaxed      -0.63197483
## insight       2.30037014
## amused        0.12174312
## sad           1.76003085
## confused      3.69420321
## aggressive    7.20551580
## sentimental   0.45498735
## worried       0.94881854
## nostalgic     0.58810381
## surprised    -0.07160704
## oppressive    1.96067744
## sublime       0.54197639
## spurredmeon   0.57176388
## indifferent   2.78918045
## impressed    -0.49520223
## distasteful   3.80789487
## touched      -0.11192171
## unsettling    0.21998975
## sparkinterst -0.83045204
## happy        -0.57210985
## awe           1.13998384
## motivated    -0.10052630
## funny         8.46014421
## liking       -0.96130316
```

CFA with original AESTHEMOS Factors

```
CFA_AESTHEMOS_orth.fit<-lavaan::cfa(CFA_AESTHEMOS,
                        data=data,

                      rotation='varimax',
```

```
                          orthogonal=TRUE,
                           estimator="WLSMV",
                           std.lv=TRUE)
```

```
## Warning in lav_samplestats_from_data(lavdata = lavdata, missing = lavoptions$missing, : lavaan WARNI
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel2, lavsamplestats = lavsamplestats, : lavaan WARNING:
##     Could not compute standard errors! The information matrix could
##     not be inverted. This may be a symptom that the model is not
##     identified.
```

```
## Warning in lav_test_satorra_bentler(lavobject = NULL, lavsamplestats = lavsamplestats, : lavaan WARN
```

```
fit_orth<-as.data.frame(fitmeasures(CFA_AESTHEMOS_orth.fit))


CFA_AESTHEMOS_obl.fit<-lavaan::cfa(CFA_AESTHEMOS,
                           data=data,

                      #  rotation='varimax',
                       #  orthogonal=TRUE,
                           estimator="WLSMV",
                           std.lv=TRUE)
```

```
## Warning in lav_samplestats_from_data(lavdata = lavdata, missing = lavoptions$missing, : lavaan WARNI
```

```
## Warning in lav_object_post_check(object): lavaan WARNING: some estimated ov
## variances are negative
```

```
fit_obl<-as.data.frame(fitmeasures(CFA_AESTHEMOS_obl.fit))


# saving fitindices to dataframe

AEST_fitmeasures<-data.frame(
  "fitindices"=c("chi square",
                 "df (chi square)",
                 "p (chi square)",
                 "cfi",
                 "tli",
                 "rmsea",
                 "agfi" ),
  "orthogonal"=c(fit_orth["chisq",], fit_orth["df",], fit_orth["pvalue",], fit_orth["cfi",], fit_orth["

  "oblimin"= c(fit_obl["chisq",], fit_obl["df",], fit_obl["pvalue",], fit_obl["cfi",], fit_obl["tli",],

# reduce to only 2 decimal places so it looks less chaotic
is.num <- sapply(AEST_fitmeasures, is.numeric)
AEST_fitmeasures[is.num] <- lapply(AEST_fitmeasures[is.num], round, 2)
```

```
print(AEST_fitmeasures)
```

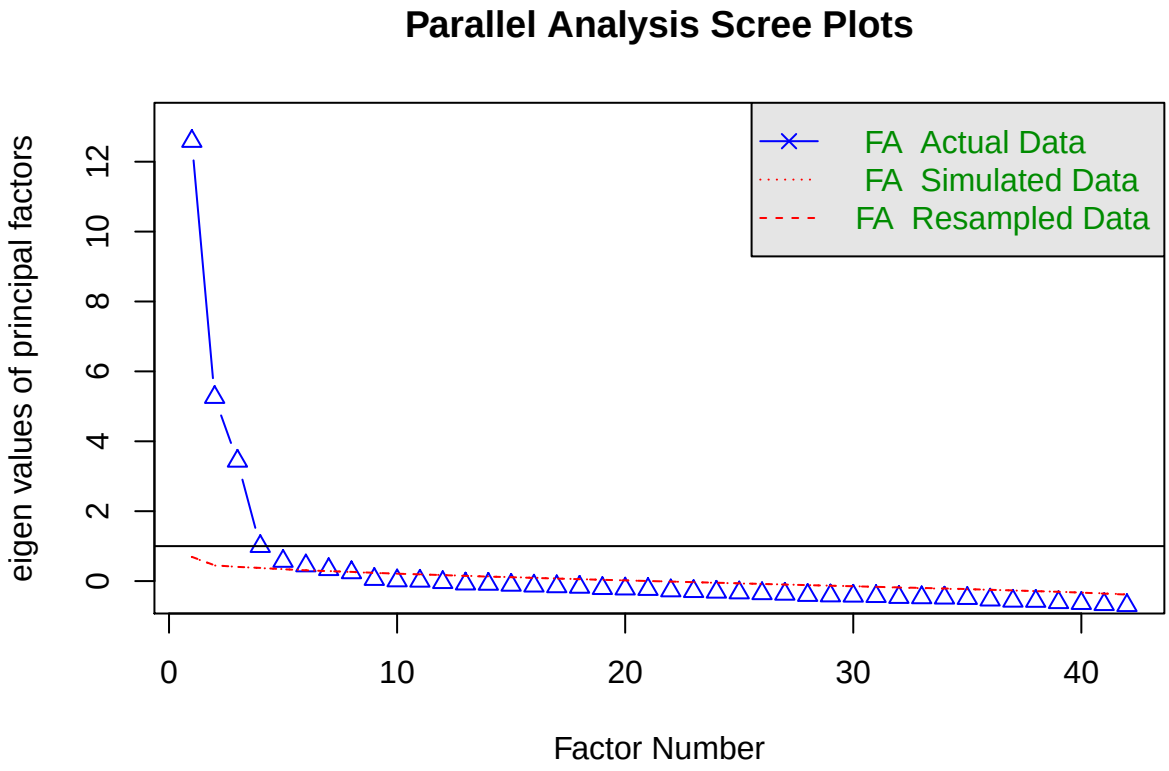
```
##        fitindices orthogonal oblimin
## 1      chi square   47130.07 8325.09
## 2 df (chi square)     819.00  798.00
## 3  p (chi square)       0.00    0.00
## 4             cfi       0.23    0.88
```

```
## 5             tli       0.20    0.87
## 6           rmsea       0.27    0.11
## 7            agfi       0.33    0.88
```

Fit

STEP 1: determine the number of factors

```
fa.parallel(data_AESTHEMOS,  fm="wls", fa="fa")
```

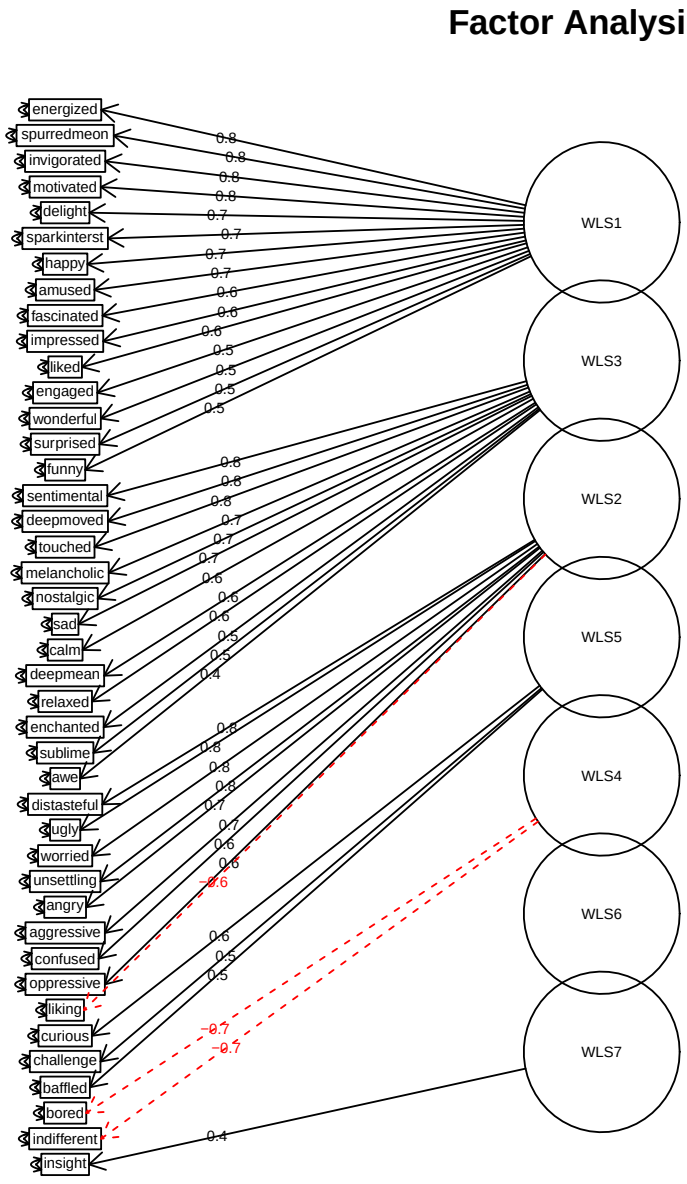



```
## Parallel analysis suggests that the number of factors =  7  and the number of components =  NA
```

–> parallelanalysis and screeplot indicate 7 factors, which also has a the best fit when compared to other solutions

STEP 2: Factor analysis with 7 factors (as suggested by previous parallel analysis), varimax rotation is applied, weighted least squares (WLS) is used to estimate the factors

path diagram for the first EFA




```
#library(ggplot2)

#ggplot(EFA_results_long, aes(name,abs(loadings),fill=loadings))+
 #  facet_wrap(~factor, nrow=1)+
  # geom_bar(stat = "identity")+
  # coord_flip()+
```

```
  #scale_fill_gradient2(name="Factorloadings",high="turquoise4",mid="paleturquoise",low="salmon",     mi
  #ylab("Loading strength")+
  #xlab("Item name")+
 #theme_bw(base_size = 28)
```

The seven factor solution revealed some cross-loadings of items on several factors. Items that showed loadings on several factors with a difference of less than .20 were removed. Another EFA was carried out with the remaining items.

to make the next step a bit simpler the retained items are saved into a new data frame

```
EFA_reduced<-tibble(data$energized,
                    data$spurredmeon,
                    data$invigorated,
                    data$motivated,
                    data$delight,
                    data$happy,
                    data$amused,
                    data$funny,

                    data$sentimental,
                    data$deepmoved,
                    data$touched,
                    data$nostalgic,
                    data$melancholic,
                    data$sad,
                    data$deepmean,

                    data$distasteful,
                    data$ugly,
                    data$worried,
                    data$unsettling,
                    data$angry,
                    data$aggressive,
                    data$confused,
                    data$oppressive,

                    data$bored,
                    data$indifferent)

names(EFA_reduced)<-c("energized",
                    "spurredmeon",
                    "invigorated",
                    "motivated",
                    "delight",
                    "happy",
                    "amused",
                    "funny",

                    "sentimental",
                    "deepmoved",
                    "touched",
```

```
                    "nostalgic",
                    "melancholic",
                    "sad",
                    "deepmean",

                    "distasteful",
                    "ugly",
                    "worried",
                    "unsettling",
                    "angry",
                    "aggressive",
                    "confused",
                    "oppressive",
                    "bored",
                    "indifferent"
                    )


EFA_ordered<- as.data.frame(lapply(EFA_reduced[
  ,c("energized",
     "spurredmeon",
     "invigorated",
     "motivated",
     "delight",
     "happy",
     "amused",
     "funny",

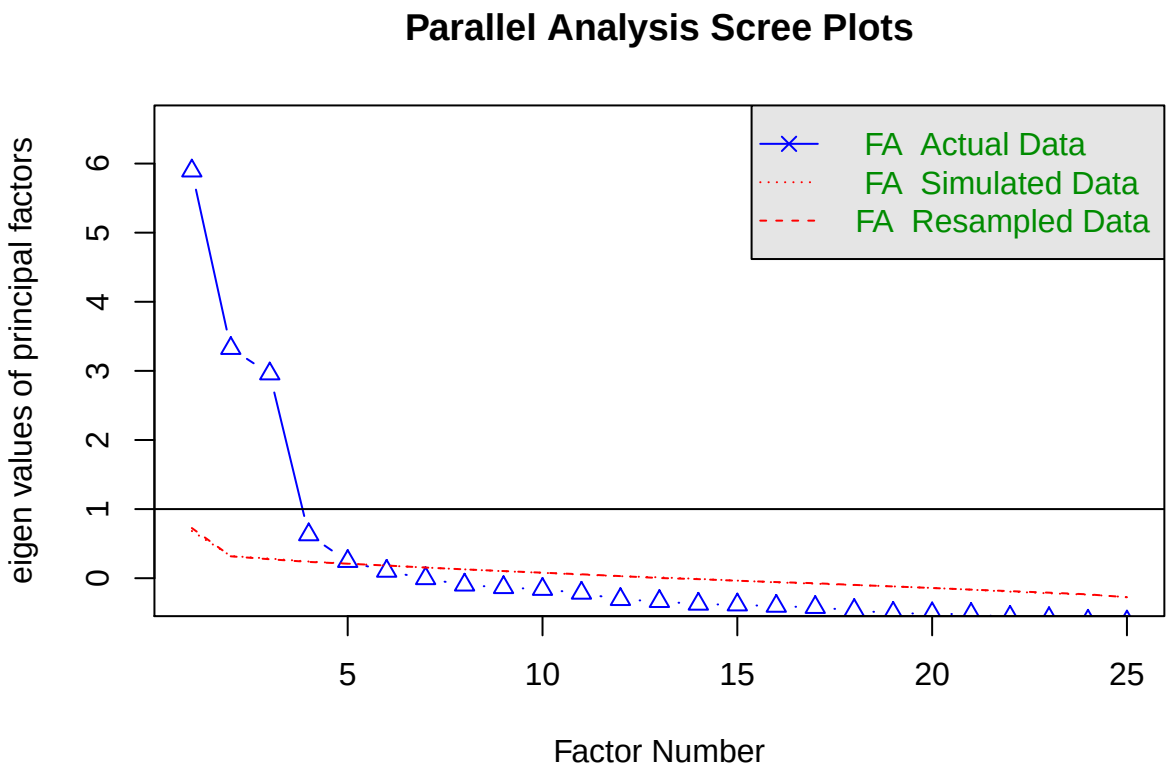
     "sentimental",
     "deepmoved",
     "touched",
     "nostalgic",
     "melancholic",
     "sad",
     "deepmean",

     "distasteful",
     "ugly",
     "worried",
     "unsettling",
     "angry",
     "aggressive",
     "confused",
     "oppressive",

     "bored",
     "indifferent"
                )],
        ordered))
```

second parallel analysis to determine the number of factors in the reduced data set

```
fa.parallel(EFA_reduced,  fm="wls", fa="fa")
```




```
## Parallel analysis suggests that the number of factors =  5  and the number of components =  NA
```

the parallel analysis suggests 4 factors

A second factor analysis was carried out.

```
second_EFA<-psych::fa(EFA_reduced, nfactors = 4, rotate='varimax',fm="wls", fa="fa")

print(second_EFA, sort=TRUE, digits = 2)
```

```
## Factor Analysis using method =  wls
## Call: psych::fa(r = EFA_reduced, nfactors = 4, rotate = "varimax",
##     fm = "wls", fa = "fa")
## Standardized loadings (pattern matrix) based upon correlation matrix
##              item  WLS1  WLS2  WLS3  WLS4   h2   u2 com
## worried        18  0.83 -0.07  0.01 -0.14 0.71 0.29 1.1
## unsettling     19  0.79 -0.07 -0.08 -0.05 0.64 0.36 1.0
## distasteful    16  0.75 -0.08 -0.06  0.23 0.63 0.37 1.2
## ugly           17  0.73 -0.11 -0.13  0.21 0.61 0.39 1.3
## angry          20  0.70  0.01 -0.02  0.05 0.49 0.51 1.0
## aggressive     21  0.69  0.09 -0.03 -0.05 0.49 0.51 1.0
## oppressive     23  0.64 -0.05 -0.08  0.05 0.42 0.58 1.0
## confused       22  0.59 -0.09 -0.02  0.08 0.36 0.64 1.1
## energized       1  0.04  0.83 -0.01 -0.17 0.71 0.29 1.1
## spurredmeon     2  0.11  0.77 -0.01 -0.10 0.61 0.39 1.1
## motivated       4  0.19  0.74  0.06 -0.16 0.61 0.39 1.2
## invigorated     3  0.03  0.72  0.08 -0.08 0.54 0.46 1.1
```

```
## amused         7 -0.17  0.72  0.05 -0.03 0.55 0.45 1.1
## delight        5 -0.37  0.71  0.29 -0.09 0.74 0.26 1.9
## happy          6 -0.39  0.69  0.18 -0.04 0.67 0.33 1.8
## funny          8 -0.12  0.49 -0.13  0.07 0.28 0.72 1.3
## deepmoved     10 -0.09  0.16  0.82 -0.15 0.73 0.27 1.2
## touched       11 -0.20  0.22  0.81 -0.15 0.76 0.24 1.4
## sentimental    9 -0.22  0.02  0.78  0.01 0.66 0.34 1.2
## melancholic   13  0.05 -0.04  0.73  0.06 0.54 0.46 1.0
## nostalgic     12 -0.15  0.05  0.67 -0.02 0.47 0.53 1.1
## sad           14  0.13 -0.23  0.66  0.05 0.51 0.49 1.4
## deepmean      15  0.03  0.10  0.63 -0.21 0.45 0.55 1.3
## bored         24  0.18 -0.17 -0.14  0.73 0.61 0.39 1.3
## indifferent   25  0.04 -0.12 -0.06  0.65 0.44 0.56 1.1
##
##                        WLS1 WLS2 WLS3 WLS4
## SS loadings            4.71 4.31 3.94 1.27
## Proportion Var         0.19 0.17 0.16 0.05
## Cumulative Var         0.19 0.36 0.52 0.57
## Proportion Explained   0.33 0.30 0.28 0.09
## Cumulative Proportion  0.33 0.63 0.91 1.00
##
## Mean item complexity =  1.2
## Test of the hypothesis that 4 factors are sufficient.
##
## The degrees of freedom for the null model are  300  and the objective function was  15.55 with Chi S
## The degrees of freedom for the model are 206  and the objective function was  2.21
##
## The root mean square of the residuals (RMSR) is  0.04
## The df corrected root mean square of the residuals is  0.05
##
## The harmonic number of observations is  765 with the empirical chi square  692.04  with prob <  7.6e
## The total number of observations was  765  with Likelihood Chi Square =  1664.85  with prob <  2.7e-
##
## Tucker Lewis Index of factoring reliability =  0.814
## RMSEA index =  0.096  and the 90 % confidence intervals are  0.092 0.101
## BIC =  297.03
## Fit based upon off diagonal values = 0.98
## Measures of factor score adequacy
##                                                WLS1 WLS2 WLS3 WLS4
## Correlation of (regression) scores with factors   0.96 0.96 0.95 0.84
## Multiple R square of scores with factors          0.92 0.91 0.91 0.71
## Minimum correlation of possible factor scores     0.83 0.82 0.82 0.42
```

A CFA is carried out to confirm the EFA model with four factors.

```
require(parameters)
```

```
## Loading required package: parameters
```

```
## Warning: package 'parameters' was built under R version 3.6.2
```

```
if (require("psych") && require("lavaan"))


  #this model gets rejected
  model1<-'
```

```
  M1=~worried+ unsettling+distasteful + ugly
  M2=~energized + spurredmeon + motivated + invigorated
  M3=~deepmoved+touched+sentimental+melancholic
  M4=~bored+indifferent'

 model1.fit<-lavaan::cfa(model1,
                         data=EFA_reduced,
                         rotation='varimax',
                         orthogonal=TRUE,
                         estimator="WLSMV",
                         std.lv=TRUE)
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel2, lavsamplestats = lavsamplestats, : lavaan WARNING:
##     Could not compute standard errors! The information matrix could
##     not be inverted. This may be a symptom that the model is not
##     identified.
```

```
## Warning in lav_test_satorra_bentler(lavobject = NULL, lavsamplestats = lavsamplestats, : lavaan WARNI
```

```
#summary(model1.fit)
```

This model is rejected. As the measures for factor adequacy are comparatively low and there are only two items loading in that factor, another CFA was carried out with only the first major 3 factors.

```
  # this model works
  model2<-'
  M1=~worried+ unsettling+distasteful + ugly
  M2=~energized + spurredmeon + motivated + invigorated
  M3=~deepmoved+touched+sentimental+melancholic '

 model2.fit<-lavaan::cfa(model2,
                         data=EFA_ordered,
                         rotation='varimax',
                         orthogonal=TRUE,
                         estimator="WLSMV",
                         std.lv=TRUE)

fitmeasures(model2.fit)
```

```
##                          npar                          fmin
##                        60.000                         0.689
##                         chisq                            df
##                      1054.687                        54.000
##                        pvalue                  chisq.scaled
##                         0.000                       576.540
##                    df.scaled                  pvalue.scaled
##                        54.000                         0.000
##          chisq.scaling.factor                 baseline.chisq
##                         1.922                      27880.197
##                   baseline.df               baseline.pvalue
##                        66.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     14383.934                        66.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         1.943
##                           cfi                           tli
```

```
##                         0.964                         0.956
##                          nnfi                           rfi
##                         0.956                         0.954
##                           nfi                          pnfi
##                         0.962                         0.787
##                           ifi                           rni
##                         0.964                         0.964
##                   cfi.scaled                   tli.scaled
##                         0.964                         0.955
##                   cfi.robust                   tli.robust
##                           NA                            NA
##                  nnfi.scaled                  nnfi.robust
##                         0.955                            NA
##                   rfi.scaled                   nfi.scaled
##                         0.951                         0.960
##                   ifi.scaled                   rni.scaled
##                         0.964                         0.964
##                   rni.robust                         rmsea
##                           NA                         0.156
##                rmsea.ci.lower                rmsea.ci.upper
##                         0.148                         0.164
##                  rmsea.pvalue                  rmsea.scaled
##                         0.000                         0.113
##         rmsea.ci.lower.scaled         rmsea.ci.upper.scaled
##                         0.104                         0.121
##           rmsea.pvalue.scaled                 rmsea.robust
##                         0.000                           NA
##         rmsea.ci.lower.robust         rmsea.ci.upper.robust
##                           NA                            NA
##           rmsea.pvalue.robust                          rmr
##                           NA                         0.154
##                    rmr_nomean                          srmr
##                         0.165                         0.165
##                   srmr_bentler           srmr_bentler_nomean
##                         0.154                         0.165
##                          crmr                  crmr_nomean
##                         0.165                         0.180
##                   srmr_mplus             srmr_mplus_nomean
##                         0.154                         0.165
##                          cn_05                         cn_01
##                        53.267                        59.725
##                           gfi                          agfi
##                         0.974                         0.946
##                          pgfi                           mfi
##                         0.462                         0.519
```

```
summary(model2.fit)
```

```
## lavaan 0.6-5 ended normally after 19 iterations
##
##   Estimator                                         DWLS
##   Optimization method                           NLMINB
##   Number of free parameters                         60
##
##   Number of observations                           765
```

```
##
## Model Test User Model:
##                                                   Standard      Robust
##   Test Statistic                                1054.687     576.540
##   Degrees of freedom                                54          54
##   P-value (Chi-square)                           0.000       0.000
##   Scaling correction factor                                  1.922
##   Shift parameter                                           27.717
##     for the simple second-order correction
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model        Unstructured
##   Standard errors                           Robust.sem
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)
##   M1 =~
##     worried           0.871    0.018   48.569    0.000
##     unsettling        0.891    0.016   55.541    0.000
##     distasteful       0.902    0.016   58.186    0.000
##     ugly              0.909    0.015   58.660    0.000
##   M2 =~
##     energized         0.923    0.011   84.547    0.000
##     spurredmeon       0.860    0.014   62.725    0.000
##     motivated         0.849    0.015   56.867    0.000
##     invigorated       0.816    0.016   50.052    0.000
##   M3 =~
##     deepmoved         0.937    0.012   80.970    0.000
##     touched           0.938    0.012   81.503    0.000
##     sentimental       0.797    0.018   44.033    0.000
##     melancholic       0.735    0.024   30.929    0.000
##
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)
##   M1 ~~
##     M2                0.000
##     M3                0.000
##   M2 ~~
##     M3                0.000
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)
##    .worried           0.000
##    .unsettling        0.000
##    .distasteful       0.000
##    .ugly              0.000
##    .energized         0.000
##    .spurredmeon       0.000
##    .motivated         0.000
##    .invigorated       0.000
##    .deepmoved         0.000
##    .touched           0.000
```

```
##    .sentimental       0.000
##    .melancholic       0.000
##     M1                0.000
##     M2                0.000
##     M3                0.000
##
## Thresholds:
##                     Estimate  Std.Err  z-value  P(>|z|)
##     worried|t1         0.395    0.047    8.468    0.000
##     worried|t2         0.796    0.051   15.614    0.000
##     worried|t3         1.207    0.060   20.235    0.000
##     worried|t4         1.843    0.088   20.922    0.000
##     unsettling|t1      0.243    0.046    5.306    0.000
##     unsettling|t2      0.659    0.049   13.421    0.000
##     unsettling|t3      1.018    0.055   18.511    0.000
##     unsettling|t4      1.501    0.070   21.508    0.000
##     distasteful|t1     0.730    0.050   14.595    0.000
##     distasteful|t2     1.111    0.057   19.443    0.000
##     distasteful|t3     1.425    0.067   21.343    0.000
##     distasteful|t4     1.899    0.092   20.637    0.000
##     ugly|t1            0.765    0.051   15.141    0.000
##     ugly|t2            1.135    0.058   19.663    0.000
##     ugly|t3            1.443    0.067   21.393    0.000
##     ugly|t4            1.792    0.085   21.138    0.000
##     energized|t1      -0.126    0.045   -2.781    0.005
##     energized|t2       0.399    0.047    8.539    0.000
##     energized|t3       1.007    0.055   18.390    0.000
##     energized|t4       1.543    0.072   21.550    0.000
##     spurredmeon|t1     0.133    0.045    2.926    0.003
##     spurredmeon|t2     0.696    0.050   14.045    0.000
##     spurredmeon|t3     1.293    0.062   20.786    0.000
##     spurredmeon|t4     1.843    0.088   20.922    0.000
##     motivated|t1       0.051    0.045    1.120    0.263
##     motivated|t2       0.557    0.048   11.599    0.000
##     motivated|t3       1.041    0.055   18.751    0.000
##     motivated|t4       1.611    0.075   21.548    0.000
##     invigorated|t1    -0.015    0.045   -0.325    0.745
##     invigorated|t2     0.445    0.047    9.468    0.000
##     invigorated|t3     1.052    0.056   18.869    0.000
##     invigorated|t4     1.730    0.081   21.341    0.000
##     deepmoved|t1       0.126    0.045    2.781    0.005
##     deepmoved|t2       0.713    0.050   14.321    0.000
##     deepmoved|t3       1.193    0.059   20.135    0.000
##     deepmoved|t4       1.674    0.078   21.469    0.000
##     touched|t1         0.044    0.045    0.976    0.329
##     touched|t2         0.580    0.048   12.022    0.000
##     touched|t3         1.035    0.055   18.691    0.000
##     touched|t4         1.688    0.079   21.444    0.000
##     sentimental|t1     0.210    0.046    4.586    0.000
##     sentimental|t2     0.726    0.050   14.527    0.000
##     sentimental|t3     1.161    0.058   19.878    0.000
##     sentimental|t4     1.843    0.088   20.922    0.000
##     melancholic|t1     0.253    0.046    5.522    0.000
##     melancholic|t2     0.809    0.051   15.815    0.000
```

```
##     melancholic|t3    1.364    0.065   21.130    0.000
##     melancholic|t4    1.963    0.097   20.262    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)
##    .worried           0.241
##    .unsettling        0.206
##    .distasteful       0.186
##    .ugly              0.174
##    .energized         0.148
##    .spurredmeon       0.260
##    .motivated         0.279
##    .invigorated       0.335
##    .deepmoved         0.123
##    .touched           0.121
##    .sentimental       0.365
##    .melancholic       0.459
##     M1                1.000
##     M2                1.000
##     M3                1.000
##
## Scales y*:
##                    Estimate  Std.Err  z-value  P(>|z|)
##     worried           1.000
##     unsettling        1.000
##     distasteful       1.000
##     ugly              1.000
##     energized         1.000
##     spurredmeon       1.000
##     motivated         1.000
##     invigorated       1.000
##     deepmoved         1.000
##     touched           1.000
##     sentimental       1.000
##     melancholic       1.000
```

```
factorscores<-lavPredict(model2.fit)
lavaan::inspect(model2.fit, 'r2')
```

```
##     worried  unsettling distasteful        ugly   energized spurredmeon
##       0.759       0.794       0.814       0.826       0.852       0.740
##   motivated invigorated   deepmoved     touched sentimental melancholic
##       0.721       0.665       0.877       0.879       0.635       0.541
```

```
var<-mean(lavaan::lavInspect(model2.fit, 'r2'))

lavaan::inspectSampleCov(model=model2, data=EFA_ordered)
```

```
## $cov
##             worrid unsttl dststf ugly   enrgzd sprrdm motvtd invgrt depmvd
## worried      1.000
## unsettling   0.833  1.000
## distasteful  0.700  0.740  1.000
## ugly         0.693  0.728  0.875  1.000
## energized    0.007 -0.007 -0.137 -0.247  1.000
```

```
## spurredmeon  0.062  0.029 -0.055 -0.120  0.770  1.000
## motivated    0.157  0.128 -0.002 -0.100  0.793  0.747  1.000
## invigorated -0.004  0.007 -0.053 -0.177  0.763  0.717  0.646  1.000
## deepmoved   -0.153 -0.221 -0.309 -0.452  0.177  0.178  0.230  0.192  1.000
## touched     -0.278 -0.334 -0.406 -0.533  0.186  0.159  0.230  0.223  0.887
## sentimental -0.266 -0.343 -0.320 -0.487 -0.003 -0.024 -0.050  0.149  0.717
## melancholic  0.054 -0.043  0.007 -0.102 -0.051 -0.022  0.045  0.046  0.675
##             touchd sntmnt mlnchl
## worried
## unsettling
## distasteful
## ugly
## energized
## spurredmeon
## motivated
## invigorated
## deepmoved
## touched      1.000
## sentimental  0.740  1.000
## melancholic  0.632  0.664  1.000
##
## $mean
##     worried  unsettling distasteful        ugly   energized spurredmeon
##           0           0           0           0           0           0
##   motivated invigorated   deepmoved     touched sentimental melancholic
##           0           0           0           0           0           0
##
## $th
##     worried|t1     worried|t2     worried|t3     worried|t4  unsettling|t1
##          0.395          0.796          1.207          1.843          0.243
##  unsettling|t2  unsettling|t3  unsettling|t4 distasteful|t1 distasteful|t2
##          0.659          1.018          1.501          0.730          1.111
## distasteful|t3 distasteful|t4        ugly|t1        ugly|t2        ugly|t3
##          1.425          1.899          0.765          1.135          1.443
##        ugly|t4   energized|t1   energized|t2   energized|t3   energized|t4
##          1.792         -0.126          0.399          1.007          1.543
## spurredmeon|t1 spurredmeon|t2 spurredmeon|t3 spurredmeon|t4   motivated|t1
##          0.133          0.696          1.293          1.843          0.051
##   motivated|t2   motivated|t3   motivated|t4 invigorated|t1 invigorated|t2
##          0.557          1.041          1.611         -0.015          0.445
## invigorated|t3 invigorated|t4   deepmoved|t1   deepmoved|t2   deepmoved|t3
##          1.052          1.730          0.126          0.713          1.193
##   deepmoved|t4     touched|t1     touched|t2     touched|t3     touched|t4
##          1.674          0.044          0.580          1.035          1.688
## sentimental|t1 sentimental|t2 sentimental|t3 sentimental|t4 melancholic|t1
##          0.210          0.726          1.161          1.843          0.253
## melancholic|t2 melancholic|t3 melancholic|t4
##          0.809          1.364          1.963
```

```
#lavaan::inspectSampleCov(data=model2.fit)
lavPredict(model2.fit,se="standard")
```

```
## Warning in lavPredict(model2.fit, se = "standard"): lavaan WARNING: standard
## errors not available (yet) for non-normal data
```

```
##            M1     M2     M3
##   [1,] -0.490  0.326 -0.718
##   [2,]  0.409  0.175  0.459
##   [3,] -0.490  2.421  1.311
##   [4,]  0.990 -0.267 -0.718
##   [5,]  0.916  0.812  0.464
##   [6,] -0.490 -0.880 -0.718
##   [7,]  0.103  0.394  0.217
##   [8,] -0.490  0.930 -0.079
##   [9,]  0.770 -0.880 -0.718
##  [10,]  1.178 -0.880 -0.718
##  [11,]  0.091  0.705 -0.718
##  [12,]  0.464  0.587  0.464
##  [13,]  1.054 -0.880 -0.718
##  [14,]  0.350 -0.880 -0.319
##  [15,]  0.287  0.839 -0.718
##  [16,]  0.274 -0.880 -0.718
##  [17,]  0.491  0.631  0.216
##  [18,] -0.490 -0.880 -0.718
##  [19,] -0.490  0.726 -0.718
##  [20,]  1.191  0.384 -0.371
##  [21,]  0.103 -0.880 -0.718
##  [22,]  0.597  1.441 -0.062
##  [23,]  0.447  1.096 -0.718
##  [24,]  0.611  0.270  0.217
##  [25,]  0.890  0.370 -0.062
##  [26,]  1.570  0.245 -0.718
##  [27,]  0.445 -0.880 -0.718
##  [28,]  1.485 -0.096 -0.263
##  [29,]  0.350 -0.408 -0.718
##  [30,]  0.624  1.907 -0.718
##  [31,] -0.490 -0.880 -0.718
##  [32,] -0.490  0.374 -0.263
##  [33,]  1.801  0.084 -0.062
##  [34,]  0.350  1.193  1.102
##  [35,]  0.527 -0.880 -0.718
##  [36,]  0.729  1.734  1.957
##  [37,] -0.490 -0.880 -0.718
##  [38,]  0.350  0.587 -0.718
##  [39,]  0.624  0.375 -0.371
##  [40,]  0.708 -0.408 -0.718
##  [41,]  0.981 -0.880 -0.718
##  [42,]  1.485  0.812 -0.718
##  [43,] -0.490  0.588 -0.319
##  [44,]  1.134  0.464 -0.371
##  [45,]  1.900  0.507 -0.718
##  [46,]  1.024  0.260 -0.062
##  [47,]  0.803  0.839  0.098
##  [48,]  0.820 -0.267 -0.718
##  [49,] -0.490 -0.033 -0.718
##  [50,]  1.761  0.183 -0.718
##  [51,]  1.332 -0.880 -0.718
##  [52,]  0.091  0.700 -0.718
##  [53,] -0.490  1.051 -0.079
```

```
##  [54,] -0.490  1.413 -0.718
##  [55,]  0.734  1.441 -0.153
##  [56,]  1.074  0.955  0.464
##  [57,] -0.490 -0.879  0.156
##  [58,]  0.787  0.353 -0.718
##  [59,]  0.447  0.966  0.459
##  [60,]  1.024 -0.058 -0.718
##  [61,]  0.880 -0.267 -0.718
##  [62,] -0.490  1.239  0.670
##  [63,]  0.274  0.326  0.364
##  [64,]  0.708  0.011 -0.718
##  [65,] -0.490  0.320  0.057
##  [66,]  0.103 -0.096 -0.718
##  [67,]  1.077 -0.880 -0.718
##  [68,]  1.189 -0.880 -0.718
##  [69,]  0.246 -0.408 -0.718
##  [70,] -0.490  1.051 -0.079
##  [71,]  0.568  1.900  0.161
##  [72,] -0.490  0.443 -0.718
##  [73,] -0.490  2.421 -0.062
##  [74,]  0.820 -0.135 -0.718
##  [75,]  0.252  0.700 -0.079
##  [76,]  1.009  0.603  0.035
##  [77,]  1.164  0.812 -0.718
##  [78,]  0.350  1.441  0.070
##  [79,]  0.464  0.839  0.048
##  [80,] -0.490  0.839 -0.718
##  [81,]  0.784  2.096 -0.202
##  [82,] -0.490 -0.033 -0.062
##  [83,] -0.490 -0.880 -0.718
##  [84,]  1.517  0.375 -0.079
##  [85,]  1.485  0.839  0.539
##  [86,]  0.103  0.204  0.217
##  [87,]  1.883  0.196  1.076
##  [88,] -0.490 -0.880 -0.718
##  [89,]  0.091  0.628 -0.718
##  [90,] -0.490  0.446  0.325
##  [91,] -0.490  0.320 -0.718
##  [92,]  0.464  0.685 -0.718
##  [93,]  1.282  1.090 -0.718
##  [94,] -0.490  0.353 -0.718
##  [95,]  1.382  0.488 -0.076
##  [96,]  2.461 -0.880 -0.718
##  [97,]  0.603  1.638 -0.062
##  [98,]  0.883  0.394 -0.718
##  [99,]  0.893 -0.267 -0.718
## [100,]  0.103  0.260 -0.718
## [101,]  1.177  0.587 -0.079
## [102,]  0.350  1.710 -0.062
## [103,]  0.605 -0.880 -0.718
## [104,]  0.984 -0.880 -0.718
## [105,] -0.490 -0.033 -0.718
## [106,]  1.078 -0.880 -0.718
## [107,]  1.272  0.855  1.438
```

```
## [108,] -0.490  0.839 -0.718
## [109,]  0.103 -0.096 -0.718
## [110,]  0.473 -0.066 -0.079
## [111,] -0.490  0.248 -0.718
## [112,]  1.562 -0.244 -0.718
## [113,]  0.091  1.340 -0.718
## [114,] -0.490  0.700  0.457
## [115,]  1.676 -0.880 -0.718
## [116,]  0.659 -0.880 -0.718
## [117,]  0.103  0.260 -0.718
## [118,]  1.297 -0.880 -0.718
## [119,]  0.287  0.587  0.216
## [120,] -0.490 -0.880 -0.718
## [121,] -0.490  0.260 -0.079
## [122,]  1.663  0.246 -0.371
## [123,]  0.350 -0.880 -0.718
## [124,]  1.024  1.441 -0.319
## [125,]  1.532  0.641 -0.718
## [126,]  0.454 -0.058 -0.718
## [127,]  0.889  0.084  0.048
## [128,]  0.287  0.111 -0.718
## [129,]  0.397 -0.880 -0.718
## [130,]  1.173  0.084 -0.371
## [131,]  0.464 -0.880 -0.718
## [132,]  0.568  0.491 -0.718
## [133,]  0.426 -0.880 -0.371
## [134,] -0.490 -0.880 -0.718
## [135,]  1.638  0.084 -0.718
## [136,]  0.409  1.056  0.943
## [137,]  0.527 -0.880 -0.718
## [138,]  1.244  0.614  0.215
## [139,]  0.103  0.020 -0.718
## [140,]  0.855 -0.880 -0.718
## [141,]  0.611 -0.880 -0.718
## [142,] -0.490  0.631 -0.062
## [143,]  1.765 -0.408 -0.718
## [144,]  1.291  0.488 -0.371
## [145,] -0.490  0.204 -0.718
## [146,]  1.386  0.839  0.464
## [147,]  2.461  0.736 -0.718
## [148,]  1.277  0.603  0.305
## [149,]  2.166  0.084 -0.371
## [150,]  1.271 -0.475 -0.718
## [151,] -0.490  0.445 -0.718
## [152,]  0.701 -0.176 -0.718
## [153,]  0.890 -0.096 -0.718
## [154,]  0.605 -0.267 -0.718
## [155,]  0.729 -0.880  0.187
## [156,] -0.490  0.013 -0.718
## [157,]  0.855  0.956  0.803
## [158,]  1.168  0.446 -0.076
## [159,]  0.274 -0.880 -0.718
## [160,]  1.074  0.020 -0.718
## [161,]  2.166 -0.096 -0.718
```

```
## [162,]  0.734 -0.880 -0.371
## [163,]  1.743 -0.880 -0.371
## [164,]  0.694  0.068 -0.718
## [165,]  1.676  0.394  0.830
## [166,]  2.461 -0.880 -0.718
## [167,]  0.252 -0.880 -0.718
## [168,]  1.640 -0.880 -0.718
## [169,]  1.384 -0.880 -0.371
## [170,]  1.173 -0.007 -0.718
## [171,]  0.274 -0.880 -0.718
## [172,]  0.611 -0.176 -0.718
## [173,]  1.839  0.384 -0.263
## [174,] -0.490 -0.880 -0.718
## [175,]  0.915  0.951 -0.718
## [176,]  0.855  0.648  0.224
## [177,]  0.921  0.198 -0.079
## [178,]  1.290  0.370  0.048
## [179,]  1.789  0.020 -0.718
## [180,]  1.748 -0.880 -0.718
## [181,]  1.277  0.740 -0.263
## [182,]  0.980 -0.880 -0.718
## [183,]  1.250  1.132 -0.718
## [184,]  0.841 -0.880 -0.718
## [185,] -0.490 -0.880 -0.718
## [186,]  1.164 -0.880 -0.062
## [187,]  1.640 -0.267  0.527
## [188,]  1.761  0.106 -0.371
## [189,]  2.461 -0.009 -0.153
## [190,]  0.701 -0.880 -0.718
## [191,]  0.823 -0.880 -0.371
## [192,]  1.939 -0.408 -0.718
## [193,]  0.640 -0.880 -0.718
## [194,]  2.136 -0.880 -0.718
## [195,]  2.136  1.114 -0.371
## [196,]  0.597  0.260 -0.718
## [197,]  2.126  0.118  0.171
## [198,]  2.166 -0.880 -0.718
## [199,]  1.492  0.084  0.070
## [200,]  1.382  0.464  0.648
## [201,]  0.835 -0.880 -0.718
## [202,]  0.350 -0.880 -0.718
## [203,]  1.377  0.426 -0.371
## [204,]  0.605 -0.880 -0.718
## [205,]  0.971  0.320 -0.079
## [206,]  0.473  0.504  1.089
## [207,] -0.490  1.090  0.445
## [208,]  0.855  0.893 -0.718
## [209,]  0.091 -0.096 -0.153
## [210,] -0.490 -0.880 -0.718
## [211,]  0.873  0.020 -0.718
## [212,]  1.297 -0.880 -0.718
## [213,]  1.649 -0.880 -0.263
## [214,]  1.507 -0.880 -0.371
## [215,]  1.095 -0.058 -0.718
```

```
## [216,]  1.212  0.137  0.539
## [217,]  1.938 -0.880 -0.718
## [218,]  0.787 -0.880 -0.718
## [219,]  1.191  0.084 -0.718
## [220,]  1.532 -0.880 -0.718
## [221,]  1.088 -0.408 -0.718
## [222,]  0.646 -0.880 -0.718
## [223,]  0.350  0.587 -0.718
## [224,]  1.787  0.384 -0.263
## [225,]  0.103 -0.267 -0.718
## [226,]  0.603  1.441 -0.718
## [227,]  1.164  0.370 -0.718
## [228,]  0.927  0.300  0.217
## [229,]  1.176  0.263 -0.718
## [230,]  0.855 -0.880 -0.718
## [231,]  1.177 -0.135 -0.718
## [232,]  1.595  0.838  0.109
## [233,]  0.690 -0.880 -0.371
## [234,]  1.384  0.957 -0.718
## [235,]  1.003 -0.880 -0.718
## [236,] -0.490 -0.880 -0.718
## [237,]  1.565  0.958 -0.153
## [238,]  1.761  0.603  0.683
## [239,]  1.397 -0.408 -0.718
## [240,]  1.939  0.298  0.630
## [241,]  0.103 -0.880 -0.718
## [242,]  0.473 -0.880 -0.718
## [243,]  1.761 -0.880 -0.371
## [244,]  0.884 -0.880 -0.718
## [245,]  1.939 -0.880 -0.718
## [246,]  2.461  1.329 -0.263
## [247,]  0.491  0.106 -0.718
## [248,]  1.092  0.839  0.409
## [249,]  2.461  1.477 -0.079
## [250,]  1.649  0.106  0.070
## [251,]  1.074  0.603 -0.718
## [252,]  1.311 -0.475 -0.718
## [253,] -0.490  0.426 -0.062
## [254,]  0.987  0.345 -0.718
## [255,]  0.733  0.445 -0.062
## [256,] -0.490 -0.033 -0.718
## [257,]  0.252  1.213  0.659
## [258,] -0.490  0.587  0.216
## [259,]  0.605  0.978  0.542
## [260,]  0.890  1.070  1.581
## [261,]  0.611 -0.267 -0.718
## [262,]  0.103  0.106 -0.718
## [263,]  0.103  0.703  0.187
## [264,]  1.538 -0.880 -0.718
## [265,]  0.970 -0.475 -0.718
## [266,]  0.091  0.705  0.526
## [267,]  0.673 -0.096  0.048
## [268,] -0.490  0.740 -0.718
## [269,]  0.694 -0.880 -0.319
```

```
## [270,]  0.103  0.587 -0.718
## [271,]  0.103 -0.880 -0.718
## [272,]  0.350  0.491  0.539
## [273,]  0.091 -0.408 -0.079
## [274,]  0.103  0.700 -0.718
## [275,]  0.807  0.839 -0.718
## [276,]  0.274 -0.880 -0.718
## [277,]  0.409  2.421  0.226
## [278,]  0.103 -0.880 -0.718
## [279,]  0.091  0.700 -0.079
## [280,]  0.855  0.260  0.217
## [281,]  0.855  1.162 -0.718
## [282,]  0.350 -0.244 -0.718
## [283,] -0.490  1.324  0.957
## [284,] -0.490  0.368 -0.718
## [285,]  0.624  1.442 -0.079
## [286,] -0.490  0.444  0.057
## [287,]  0.287 -0.096 -0.718
## [288,]  0.473  1.305 -0.103
## [289,]  0.873  0.418  1.297
## [290,]  0.624  0.504 -0.371
## [291,]  1.333  0.318 -0.153
## [292,] -0.490 -0.880 -0.718
## [293,] -0.490  1.753  1.584
## [294,]  0.605 -0.880 -0.718
## [295,] -0.490  0.252 -0.718
## [296,] -0.490 -0.408 -0.718
## [297,]  0.603  1.461 -0.718
## [298,] -0.490  0.445 -0.319
## [299,]  1.069  0.817  0.542
## [300,]  2.126  0.492 -0.718
## [301,]  0.605  1.329  0.630
## [302,]  0.915  1.193  0.445
## [303,]  0.884  0.020 -0.718
## [304,]  0.103  1.329 -0.062
## [305,]  0.611 -0.096 -0.079
## [306,]  0.733  0.204 -0.718
## [307,] -0.490  0.137 -0.153
## [308,] -0.490  0.220  0.542
## [309,] -0.490  1.188 -0.079
## [310,] -0.490  1.357  1.173
## [311,] -0.490 -0.069  0.445
## [312,] -0.490 -0.475  0.035
## [313,] -0.490 -0.880 -0.718
## [314,] -0.490  1.204  0.682
## [315,] -0.490  2.096 -0.079
## [316,] -0.490 -0.058 -0.718
## [317,]  0.091 -0.367 -0.718
## [318,]  0.491  0.839  0.630
## [319,] -0.490  1.589  0.217
## [320,] -0.490 -0.267 -0.319
## [321,]  0.091  1.188 -0.718
## [322,] -0.490 -0.880 -0.718
## [323,]  0.445  0.198  0.682
```

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## [324,]  0.246 -0.268 -0.718
## [325,] -0.490  0.700  0.187
## [326,] -0.490  1.602  0.954
## [327,] -0.490  0.426 -0.718
## [328,] -0.490  1.441 -0.103
## [329,]  0.274 -0.408 -0.718
## [330,] -0.490  0.346 -0.319
## [331,] -0.490  0.740 -0.718
## [332,] -0.490  1.635 -0.718
## [333,] -0.490 -0.135 -0.718
## [334,] -0.490  0.838  0.307
## [335,] -0.490  0.464 -0.718
## [336,]  1.290  1.352 -0.718
## [337,] -0.490 -0.096 -0.718
## [338,]  0.447 -0.880 -0.718
## [339,] -0.490  1.894  0.156
## [340,] -0.490  0.542  0.474
## [341,]  0.246  0.106  0.391
## [342,] -0.490  1.709  1.716
## [343,] -0.490  0.220 -0.718
## [344,] -0.490  2.132  0.187
## [345,] -0.490 -0.267 -0.718
## [346,] -0.490 -0.058 -0.371
## [347,] -0.490  0.475 -0.718
## [348,] -0.490  1.441 -0.062
## [349,] -0.490 -0.176 -0.319
## [350,] -0.490  0.587  0.409
## [351,]  0.605  2.421 -0.718
## [352,] -0.490  0.839  0.156
## [353,] -0.490  0.084 -0.079
## [354,] -0.490  0.893 -0.718
## [355,] -0.490  0.951 -0.718
## [356,] -0.490  0.700  0.619
## [357,] -0.490  0.700  0.057
## [358,] -0.490 -0.880 -0.319
## [359,] -0.490  0.204 -0.319
## [360,] -0.490 -0.058 -0.718
## [361,] -0.490  0.318  0.887
## [362,]  0.568  0.748  1.806
## [363,] -0.490 -0.880  0.474
## [364,] -0.490 -0.880 -0.718
## [365,] -0.490  1.213  0.660
## [366,] -0.490  1.727  0.542
## [367,]  0.274 -0.880 -0.718
## [368,]  0.091 -0.058 -0.718
## [369,] -0.490  1.452  1.668
## [370,] -0.490  0.951 -0.718
## [371,] -0.490  0.587  0.364
## [372,] -0.490  0.726 -0.718
## [373,]  0.491 -0.880 -0.718
## [374,]  0.831  0.426 -0.319
## [375,]  0.527 -0.880 -0.718
## [376,] -0.490  0.817  0.217
## [377,]  0.287  1.441  0.797
```

```
## [378,] -0.490  0.443  0.325
## [379,]  0.527  1.441  0.460
## [380,] -0.490  1.894 -0.718
## [381,] -0.490  0.839  0.409
## [382,] -0.490  0.979  0.881
## [383,] -0.490  1.561 -0.718
## [384,] -0.490  0.588  1.103
## [385,] -0.490  1.188  0.445
## [386,] -0.490  0.013 -0.718
## [387,]  0.573  0.426 -0.718
## [388,] -0.490  0.588 -0.079
## [389,] -0.490  0.089 -0.371
## [390,] -0.490  0.631 -0.153
## [391,]  0.091  0.838  0.891
## [392,] -0.490  0.839 -0.062
## [393,] -0.490  1.709  1.716
## [394,] -0.490  0.260 -0.718
## [395,] -0.490  0.426 -0.718
## [396,] -0.490  0.318 -0.718
## [397,]  0.755 -0.880 -0.718
## [398,] -0.490  1.329 -0.718
## [399,] -0.490  2.421  0.445
## [400,] -0.490 -0.096 -0.718
## [401,] -0.490  1.561  0.887
## [402,] -0.490  1.470 -0.718
## [403,] -0.490  1.188  0.464
## [404,] -0.490  1.329 -0.079
## [405,] -0.490 -0.880  0.325
## [406,] -0.490  0.951 -0.062
## [407,] -0.490  0.726  0.217
## [408,]  0.668  0.587 -0.718
## [409,] -0.490 -0.033 -0.371
## [410,] -0.490  1.869  0.297
## [411,] -0.490  0.183 -0.718
## [412,] -0.490  1.918  1.740
## [413,] -0.490  0.225  1.039
## [414,] -0.490 -0.880  0.307
## [415,] -0.490 -0.475 -0.718
## [416,] -0.490  0.353 -0.079
## [417,] -0.490  1.733  0.670
## [418,] -0.490  0.320 -0.718
## [419,]  0.491 -0.058 -0.718
## [420,]  0.103  0.662  1.039
## [421,] -0.490  2.096  0.217
## [422,] -0.490  0.581  1.224
## [423,] -0.490  1.188 -0.718
## [424,]  0.527 -0.096 -0.153
## [425,] -0.490  0.320  0.830
## [426,] -0.490  0.020 -0.718
## [427,] -0.490  1.056  0.217
## [428,]  0.287  1.489  0.619
## [429,] -0.490  0.542  0.057
## [430,] -0.490  2.421  0.524
## [431,] -0.490  0.013 -0.718
```

```
## [432,] -0.490  0.491 -0.718
## [433,] -0.490  0.839 -0.718
## [434,] -0.490  1.635 -0.718
## [435,] -0.490  0.106 -0.319
## [436,] -0.490  1.441  0.325
## [437,] -0.490  1.424 -0.718
## [438,]  0.690  1.305 -0.319
## [439,]  0.274 -0.367 -0.718
## [440,] -0.490 -0.880 -0.718
## [441,] -0.490  1.441 -0.062
## [442,] -0.490  1.022  1.100
## [443,] -0.490  1.094 -0.319
## [444,] -0.490  1.709  1.716
## [445,] -0.490 -0.096 -0.718
## [446,] -0.490  1.318 -0.718
## [447,] -0.490  0.956 -0.718
## [448,] -0.490 -0.267  0.539
## [449,] -0.490  1.077 -0.079
## [450,]  0.103  2.421 -0.718
## [451,] -0.490  0.588 -0.718
## [452,] -0.490  1.435  0.474
## [453,]  0.246  2.085 -0.202
## [454,] -0.490  1.459  0.156
## [455,]  0.860 -0.367 -0.718
## [456,] -0.490  0.220 -0.718
## [457,] -0.490  1.455  0.070
## [458,] -0.490  0.587  0.409
## [459,] -0.490  1.167  0.459
## [460,]  0.473 -0.880  0.048
## [461,] -0.490 -0.880  0.727
## [462,] -0.490  0.155  1.620
## [463,] -0.490 -0.880  1.093
## [464,]  0.103  0.426  0.581
## [465,] -0.490 -0.880  0.048
## [466,]  0.246 -0.880 -0.371
## [467,]  0.103 -0.329  0.187
## [468,] -0.490 -0.096 -0.718
## [469,] -0.490 -0.880  0.325
## [470,] -0.490 -0.058  0.542
## [471,] -0.490  1.022  1.729
## [472,]  0.103 -0.880  1.662
## [473,] -0.490 -0.880 -0.319
## [474,] -0.490 -0.880  0.167
## [475,]  0.624 -0.880 -0.718
## [476,] -0.490 -0.170  1.379
## [477,]  0.091 -0.095  1.492
## [478,] -0.490  0.394  1.242
## [479,]  0.473  0.084  1.174
## [480,] -0.490 -0.880 -0.718
## [481,] -0.490  0.260  0.943
## [482,] -0.490 -0.096  1.632
## [483,]  0.473 -0.880  1.010
## [484,]  0.491  0.106  0.364
## [485,] -0.490 -0.880  0.619
```

```
## [486,] -0.490 -0.880  0.098
## [487,]  0.979 -0.880 -0.002
## [488,] -0.490 -0.880  0.542
## [489,]  0.895 -0.880 -0.718
## [490,] -0.490 -0.880 -0.718
## [491,] -0.490 -0.880 -0.718
## [492,]  0.813 -0.880  1.237
## [493,]  0.252  0.491  1.361
## [494,] -0.490 -0.880  0.520
## [495,]  0.287 -0.367  0.829
## [496,] -0.490 -0.880 -0.718
## [497,]  0.091 -0.880  0.542
## [498,] -0.490 -0.880  0.307
## [499,]  0.103 -0.880  0.474
## [500,]  0.454 -0.880 -0.718
## [501,]  0.473 -0.880  1.321
## [502,] -0.490 -0.475  0.464
## [503,] -0.491  1.733  1.156
## [504,] -0.490 -0.267  0.057
## [505,]  0.103 -0.096  0.529
## [506,]  0.091 -0.880  0.736
## [507,]  0.103 -0.880 -0.079
## [508,] -0.490 -0.880  0.226
## [509,]  0.624  0.106  2.191
## [510,] -0.490 -0.880 -0.371
## [511,] -0.490 -0.880 -0.718
## [512,] -0.490 -0.367  1.417
## [513,] -0.490 -0.367  0.409
## [514,] -0.490 -0.367  1.204
## [515,]  0.246  1.051  1.129
## [516,] -0.490  0.260 -0.371
## [517,] -0.490 -0.880  0.409
## [518,] -0.490  0.204  1.072
## [519,] -0.490 -0.880 -0.079
## [520,] -0.490 -0.880  0.542
## [521,] -0.490  0.193  0.217
## [522,]  0.103  0.817  0.619
## [523,] -0.490 -0.880  1.413
## [524,] -0.490 -0.880  0.131
## [525,] -0.490 -0.879  0.585
## [526,] -0.490 -0.880 -0.371
## [527,]  0.287 -0.058  1.434
## [528,] -0.490  0.068  1.434
## [529,] -0.490  0.598  1.306
## [530,]  0.913 -0.329  0.634
## [531,] -0.490 -0.880 -0.718
## [532,] -0.490 -0.880  0.341
## [533,] -0.490  0.020  1.353
## [534,]  0.350 -0.880 -0.371
## [535,]  0.473 -0.880  0.307
## [536,] -0.490 -0.170  0.156
## [537,]  0.246 -0.880 -0.371
## [538,]  0.558  0.106  0.943
## [539,] -0.490 -0.367  0.674
```

```
## [540,]  0.542  0.346  1.492
## [541,]  0.274 -0.880 -0.718
## [542,] -0.490 -0.880 -0.079
## [543,]  0.855 -0.880  1.830
## [544,]  0.605  0.183  0.937
## [545,] -0.490 -0.880  1.137
## [546,]  0.820  0.111  1.875
## [547,] -0.490 -0.880 -0.718
## [548,] -0.490  0.000  0.692
## [549,] -0.490 -0.880  0.581
## [550,] -0.490 -0.880  0.142
## [551,]  0.611 -0.880 -0.263
## [552,]  0.694 -0.880  0.737
## [553,] -0.490 -0.880  0.215
## [554,] -0.490  1.435  1.228
## [555,] -0.490 -0.880  0.680
## [556,]  0.491 -0.267  0.745
## [557,]  0.873 -0.367  1.228
## [558,]  0.252 -0.096 -0.718
## [559,] -0.490 -0.880 -0.371
## [560,]  0.287  0.260  1.137
## [561,]  0.350 -0.880  0.464
## [562,]  0.091 -0.880  0.459
## [563,] -0.490 -0.880  2.057
## [564,] -0.490  1.120  2.443
## [565,] -0.490 -0.408  1.306
## [566,]  0.694  0.662  1.297
## [567,] -0.490 -0.880  0.417
## [568,] -0.490 -0.880  0.619
## [569,] -0.490 -0.205  1.864
## [570,] -0.490 -0.069  1.830
## [571,] -0.490 -0.880  0.820
## [572,] -0.490 -0.058  0.660
## [573,]  0.597  0.700  0.745
## [574,] -0.490 -0.880  1.353
## [575,] -0.490 -0.880 -0.319
## [576,] -0.490 -0.880  0.283
## [577,]  0.103 -0.880 -0.718
## [578,] -0.490 -0.367  0.891
## [579,] -0.490 -0.244  1.434
## [580,] -0.490  0.353  1.354
## [581,]  0.916 -0.093  0.304
## [582,] -0.490 -0.880 -0.718
## [583,]  0.573 -0.879  0.858
## [584,] -0.490 -0.475  2.443
## [585,]  0.103 -0.880  0.943
## [586,]  0.350 -0.880  0.852
## [587,] -0.490 -0.880  1.310
## [588,] -0.490 -0.880  1.842
## [589,]  0.927  0.013  0.394
## [590,]  0.103 -0.475  0.817
## [591,]  0.624  1.077  2.443
## [592,] -0.490 -0.880  1.294
## [593,] -0.490 -0.880  0.554
```

```
## [594,] -0.490  0.251  0.943
## [595,]  0.287  0.491  0.520
## [596,] -0.490 -0.880  0.891
## [597,]  0.708  0.210  1.957
## [598,] -0.490 -0.880  0.217
## [599,]  0.350  0.543  1.729
## [600,]  0.091 -0.880  0.793
## [601,]  0.491 -0.880  0.156
## [602,] -0.490 -0.880  1.272
## [603,]  0.252 -0.408  2.062
## [604,] -0.490 -0.880  0.943
## [605,]  1.275  0.491  0.585
## [606,]  0.542 -0.879  0.798
## [607,]  0.491 -0.880  0.891
## [608,]  0.473 -0.408  0.943
## [609,] -0.490  0.020  0.142
## [610,]  0.835 -0.880  0.282
## [611,]  0.734  0.260  1.677
## [612,] -0.490 -0.880  1.662
## [613,] -0.490 -0.880 -0.718
## [614,]  0.445 -0.880 -0.371
## [615,] -0.490 -0.096  1.418
## [616,] -0.490  0.118  1.157
## [617,]  0.397  0.598  1.655
## [618,] -0.490  0.839 -0.079
## [619,] -0.490 -0.880  0.464
## [620,] -0.490  0.951  1.696
## [621,] -0.490  0.978  0.542
## [622,] -0.490 -0.880  0.070
## [623,] -0.490 -0.880  0.217
## [624,]  0.103  0.531  0.527
## [625,] -0.490 -0.880 -0.079
## [626,] -0.490  0.320  0.640
## [627,] -0.490 -0.475  0.057
## [628,] -0.490 -0.880 -0.718
## [629,] -0.490 -0.880  0.048
## [630,] -0.490  0.084  0.217
## [631,] -0.490  0.155  1.039
## [632,]  0.287  0.956  1.434
## [633,] -0.490 -0.880 -0.718
## [634,] -0.490 -0.880  0.750
## [635,] -0.490 -0.880 -0.718
## [636,] -0.490 -0.879  0.156
## [637,] -0.490 -0.880  0.670
## [638,] -0.490 -0.329 -0.168
## [639,] -0.490 -0.880 -0.319
## [640,]  0.274 -0.880 -0.263
## [641,] -0.490 -0.880 -0.079
## [642,]  0.895 -0.880 -0.718
## [643,]  0.274 -0.880 -0.718
## [644,] -0.490 -0.880 -0.718
## [645,] -0.490 -0.096  0.305
## [646,]  0.568  1.077  1.229
## [647,] -0.490 -0.880  0.891
```

```
## [648,]  0.287  1.336  1.806
## [649,]  0.103 -0.880 -0.153
## [650,] -0.490  1.188 -0.718
## [651,] -0.490 -0.880 -0.718
## [652,]  0.611 -0.879  0.057
## [653,] -0.490  0.370  0.881
## [654,] -0.490 -0.880  1.434
## [655,] -0.490 -0.880  0.325
## [656,] -0.490  0.488  0.619
## [657,]  0.397  0.020  0.057
## [658,] -0.490  0.183  0.745
## [659,]  0.091 -0.880  0.619
## [660,]  1.088 -0.880 -0.718
## [661,]  0.103 -0.879 -0.263
## [662,] -0.490  0.701  1.640
## [663,] -0.490  0.011  0.606
## [664,] -0.490 -0.880  0.048
## [665,] -0.490 -0.880  0.325
## [666,] -0.490  0.628  1.492
## [667,] -0.490  1.906  1.379
## [668,]  0.568  0.326  0.882
## [669,]  1.085 -0.267 -0.718
## [670,] -0.490 -0.880  0.409
## [671,]  0.274  0.561  1.716
## [672,] -0.490  1.574  1.310
## [673,] -0.490 -0.880  0.325
## [674,] -0.490 -0.058  0.131
## [675,]  0.445  0.700  0.745
## [676,] -0.490  0.260  0.297
## [677,] -0.490 -0.268  0.324
## [678,] -0.490  0.183  0.529
## [679,] -0.490 -0.880 -0.718
## [680,] -0.490 -0.244  1.434
## [681,] -0.490 -0.880 -0.718
## [682,] -0.490  0.353  1.149
## [683,]  0.103  0.488  1.645
## [684,] -0.490 -0.880 -0.062
## [685,]  0.435 -0.880  0.010
## [686,] -0.490 -0.367  1.285
## [687,] -0.490 -0.475  0.803
## [688,] -0.490 -0.176  1.173
## [689,] -0.490 -0.880  1.281
## [690,] -0.490 -0.880  0.817
## [691,]  0.274  0.111  0.581
## [692,]  0.103 -0.880  0.674
## [693,]  0.287  1.305  1.039
## [694,] -0.490 -0.880  0.957
## [695,]  0.527 -0.267 -0.718
## [696,]  0.605 -0.179  1.242
## [697,] -0.490 -0.093  1.382
## [698,] -0.490 -0.408  0.745
## [699,] -0.490  1.709  1.742
## [700,] -0.490 -0.880 -0.718
## [701,] -0.490  0.527  0.364
```

```
## [702,] -0.490 -0.880  0.820
## [703,] -0.490 -0.880  0.891
## [704,] -0.490 -0.880  1.103
## [705,] -0.490  0.060  2.443
## [706,] -0.490  0.106  0.606
## [707,] -0.490  1.907  2.066
## [708,]  0.873 -0.880  0.927
## [709,] -0.490 -0.096  0.736
## [710,] -0.490 -0.880  0.891
## [711,]  0.103 -0.880  0.391
## [712,] -0.490 -0.880  0.391
## [713,] -0.490  0.587  1.032
## [714,]  0.350 -0.880  0.224
## [715,]  0.350 -0.880  0.217
## [716,] -0.490 -0.475  1.153
## [717,] -0.490 -0.176 -0.153
## [718,] -0.490  0.641  0.891
## [719,]  0.820  0.320  1.464
## [720,]  0.464  0.013 -0.718
## [721,] -0.490 -0.880  0.307
## [722,] -0.490  1.441  2.253
## [723,] -0.490 -0.880  0.131
## [724,] -0.490 -0.880  0.820
## [725,] -0.490 -0.058  0.217
## [726,]  0.103  0.464  0.619
## [727,] -0.490  0.183 -0.079
## [728,] -0.490 -0.880 -0.202
## [729,] -0.490 -0.475  0.324
## [730,]  0.103 -0.880 -0.371
## [731,] -0.490  0.320  0.745
## [732,] -0.490  0.658  1.174
## [733,] -0.490  0.370  1.361
## [734,] -0.490  0.260  1.269
## [735,] -0.490 -0.880 -0.718
## [736,] -0.490  0.726  0.750
## [737,] -0.490  0.693  1.662
## [738,] -0.490  0.011  0.957
## [739,]  0.091 -0.475  1.354
## [740,]  0.246 -0.170 -0.202
## [741,] -0.490  0.392  1.379
## [742,] -0.490  0.726  0.630
## [743,] -0.490 -0.880  0.509
## [744,] -0.490  0.298  1.229
## [745,] -0.490 -0.329  1.842
## [746,] -0.490 -0.244 -0.718
## [747,] -0.490 -0.880 -0.319
## [748,]  0.091  0.326  0.745
## [749,] -0.490 -0.058  1.085
## [750,] -0.490  1.274  1.871
## [751,] -0.490 -0.880  0.893
## [752,] -0.490 -0.329 -0.718
## [753,] -0.490 -0.880  0.070
## [754,] -0.490 -0.880  0.830
## [755,] -0.490 -0.880  0.674
```

```
## [756,] -0.490  0.414  1.640
## [757,] -0.490 -0.880  0.057
## [758,] -0.490  1.441  1.640
## [759,] -0.490 -0.329  1.063
## [760,] -0.490  0.631  0.736
## [761,] -0.490 -0.367  1.533
## [762,] -0.490 -0.880  0.606
## [763,] -0.490 -0.880  0.131
## [764,] -0.490 -0.096  0.325
## [765,] -0.490  0.011  0.617
```

```
CFA_factorscores<-lavPredict(model2.fit)
summary(model2.fit, rsquare = TRUE)
```

```
## lavaan 0.6-5 ended normally after 19 iterations
##
##   Estimator                                         DWLS
##   Optimization method                           NLMINB
##   Number of free parameters                         60
##
##   Number of observations                           765
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             1054.687     576.540
##   Degrees of freedom                              54          54
##   P-value (Chi-square)                         0.000       0.000
##   Scaling correction factor                                 1.922
##   Shift parameter                                          27.717
##     for the simple second-order correction
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model        Unstructured
##   Standard errors                           Robust.sem
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)
##   M1 =~
##     worried           0.871    0.018   48.569    0.000
##     unsettling        0.891    0.016   55.541    0.000
##     distasteful       0.902    0.016   58.186    0.000
##     ugly              0.909    0.015   58.660    0.000
##   M2 =~
##     energized         0.923    0.011   84.547    0.000
##     spurredmeon       0.860    0.014   62.725    0.000
##     motivated         0.849    0.015   56.867    0.000
##     invigorated       0.816    0.016   50.052    0.000
##   M3 =~
##     deepmoved         0.937    0.012   80.970    0.000
##     touched           0.938    0.012   81.503    0.000
##     sentimental       0.797    0.018   44.033    0.000
##     melancholic       0.735    0.024   30.929    0.000
##
```

```
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)
##   M1 ~~
##     M2                0.000
##     M3                0.000
##   M2 ~~
##     M3                0.000
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)
##    .worried           0.000
##    .unsettling        0.000
##    .distasteful       0.000
##    .ugly              0.000
##    .energized         0.000
##    .spurredmeon       0.000
##    .motivated         0.000
##    .invigorated       0.000
##    .deepmoved         0.000
##    .touched           0.000
##    .sentimental       0.000
##    .melancholic       0.000
##     M1                0.000
##     M2                0.000
##     M3                0.000
##
## Thresholds:
##                    Estimate  Std.Err  z-value  P(>|z|)
##     worried|t1        0.395    0.047    8.468    0.000
##     worried|t2        0.796    0.051   15.614    0.000
##     worried|t3        1.207    0.060   20.235    0.000
##     worried|t4        1.843    0.088   20.922    0.000
##     unsettling|t1     0.243    0.046    5.306    0.000
##     unsettling|t2     0.659    0.049   13.421    0.000
##     unsettling|t3     1.018    0.055   18.511    0.000
##     unsettling|t4     1.501    0.070   21.508    0.000
##     distasteful|t1    0.730    0.050   14.595    0.000
##     distasteful|t2    1.111    0.057   19.443    0.000
##     distasteful|t3    1.425    0.067   21.343    0.000
##     distasteful|t4    1.899    0.092   20.637    0.000
##     ugly|t1           0.765    0.051   15.141    0.000
##     ugly|t2           1.135    0.058   19.663    0.000
##     ugly|t3           1.443    0.067   21.393    0.000
##     ugly|t4           1.792    0.085   21.138    0.000
##     energized|t1     -0.126    0.045   -2.781    0.005
##     energized|t2      0.399    0.047    8.539    0.000
##     energized|t3      1.007    0.055   18.390    0.000
##     energized|t4      1.543    0.072   21.550    0.000
##     spurredmeon|t1    0.133    0.045    2.926    0.003
##     spurredmeon|t2    0.696    0.050   14.045    0.000
##     spurredmeon|t3    1.293    0.062   20.786    0.000
##     spurredmeon|t4    1.843    0.088   20.922    0.000
##     motivated|t1      0.051    0.045    1.120    0.263
##     motivated|t2      0.557    0.048   11.599    0.000
```

```
##     motivated|t3      1.041    0.055   18.751    0.000
##     motivated|t4      1.611    0.075   21.548    0.000
##     invigorated|t1   -0.015    0.045   -0.325    0.745
##     invigorated|t2    0.445    0.047    9.468    0.000
##     invigorated|t3    1.052    0.056   18.869    0.000
##     invigorated|t4    1.730    0.081   21.341    0.000
##     deepmoved|t1      0.126    0.045    2.781    0.005
##     deepmoved|t2      0.713    0.050   14.321    0.000
##     deepmoved|t3      1.193    0.059   20.135    0.000
##     deepmoved|t4      1.674    0.078   21.469    0.000
##     touched|t1        0.044    0.045    0.976    0.329
##     touched|t2        0.580    0.048   12.022    0.000
##     touched|t3        1.035    0.055   18.691    0.000
##     touched|t4        1.688    0.079   21.444    0.000
##     sentimental|t1    0.210    0.046    4.586    0.000
##     sentimental|t2    0.726    0.050   14.527    0.000
##     sentimental|t3    1.161    0.058   19.878    0.000
##     sentimental|t4    1.843    0.088   20.922    0.000
##     melancholic|t1    0.253    0.046    5.522    0.000
##     melancholic|t2    0.809    0.051   15.815    0.000
##     melancholic|t3    1.364    0.065   21.130    0.000
##     melancholic|t4    1.963    0.097   20.262    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)
##    .worried           0.241
##    .unsettling        0.206
##    .distasteful       0.186
##    .ugly              0.174
##    .energized         0.148
##    .spurredmeon       0.260
##    .motivated         0.279
##    .invigorated       0.335
##    .deepmoved         0.123
##    .touched           0.121
##    .sentimental       0.365
##    .melancholic       0.459
##     M1                1.000
##     M2                1.000
##     M3                1.000
##
## Scales y*:
##                    Estimate  Std.Err  z-value  P(>|z|)
##     worried           1.000
##     unsettling        1.000
##     distasteful       1.000
##     ugly              1.000
##     energized         1.000
##     spurredmeon       1.000
##     motivated         1.000
##     invigorated       1.000
##     deepmoved         1.000
##     touched           1.000
##     sentimental       1.000
```

```
##     melancholic       1.000
##
## R-Square:
##                     Estimate
##     worried            0.759
##     unsettling         0.794
##     distasteful        0.814
##     ugly               0.826
##     energized          0.852
##     spurredmeon        0.740
##     motivated          0.721
##     invigorated        0.665
##     deepmoved          0.877
##     touched            0.879
##     sentimental        0.635
##     melancholic        0.541
```

The second model fits well, the RMSEA and SRMR are higher than the cutoff value, however, these values are based on normal continuous data and it has been discussed that these are not as appropriate for non-normal ordinal data - as the other fitindices indicate good fit and the items that are loading on these factors make sense, we accept the model.

Next we see how much variance can be explained by these three factors.

```
lavaan.diagram(model2.fit, e.size=0.055, errors=TRUE, regression=TRUE)
#sem.graph(CFA7.modelfit)
#sem.diagram(CFA7.modelfit)
```

```
F1<-tibble(EFA_reduced$worried, EFA_reduced$unsettling, EFA_reduced$distasteful, EFA_reduced$ugly)

F2<-tibble(EFA_reduced$sentimental, EFA_reduced$deepmoved, EFA_reduced$touched, EFA_reduced$melancholic)

F3<-tibble(EFA_reduced$energized, EFA_reduced$spurredmeon, EFA_reduced$invigorated, EFA_reduced$motivate

F1_alpha<-psych::alpha(x=F1)
F2_alpha<-psych::alpha(x=F2)
F3_alpha<-psych::alpha(x=F3)
```

```
F1_alpha
```

```
##
## Reliability analysis
## Call: psych::alpha(x = F1)
##
##   raw_alpha std.alpha G6(smc) average_r S/N    ase mean   sd median_r
##       0.87      0.87    0.87      0.64   7 0.0077  1.6 0.94     0.59
##
##  lower alpha upper     95% confidence boundaries
## 0.86 0.87 0.89
##
##  Reliability if an item is dropped:
##                          raw_alpha std.alpha G6(smc) average_r S/N alpha se
## EFA_reduced$worried           0.84      0.85    0.81      0.66 5.7   0.0103
## EFA_reduced$unsettling        0.83      0.84    0.79      0.63 5.1   0.0109
## EFA_reduced$distasteful       0.83      0.83    0.78      0.63 5.1   0.0100
## EFA_reduced$ugly              0.83      0.84    0.78      0.63 5.1   0.0099
```

```
##                          var.r med.r
## EFA_reduced$worried     0.0114  0.59
## EFA_reduced$unsettling  0.0164  0.56
## EFA_reduced$distasteful 0.0091  0.59
## EFA_reduced$ugly        0.0087  0.59
##
##  Item statistics
##                            n raw.r std.r r.cor r.drop mean  sd
## EFA_reduced$worried     765  0.85  0.84  0.76   0.72  1.7 1.1
## EFA_reduced$unsettling  765  0.88  0.86  0.80   0.74  1.9 1.3
## EFA_reduced$distasteful 765  0.84  0.86  0.81   0.73  1.5 1.0
## EFA_reduced$ugly        765  0.84  0.86  0.81   0.73  1.5 1.0
##
## Non missing response frequency for each item
##                             1    2    3    4    5 miss
## EFA_reduced$worried     0.65 0.13 0.10 0.08 0.03    0
## EFA_reduced$unsettling  0.60 0.15 0.10 0.09 0.07    0
## EFA_reduced$distasteful 0.77 0.10 0.06 0.05 0.03    0
## EFA_reduced$ugly        0.78 0.09 0.05 0.04 0.04    0
```

```
F2_alpha
```

```
##
## Reliability analysis
## Call: psych::alpha(x = F2)
##
##   raw_alpha std.alpha G6(smc) average_r S/N    ase mean   sd median_r
##       0.87      0.87    0.85      0.62 6.6 0.0076  1.8 0.97     0.59
##
##  lower alpha upper     95% confidence boundaries
## 0.86 0.87 0.89
##
##  Reliability if an item is dropped:
##                         raw_alpha std.alpha G6(smc) average_r S/N alpha se
## EFA_reduced$sentimental      0.85      0.84    0.81      0.64 5.4   0.0097
## EFA_reduced$deepmoved        0.80      0.80    0.74      0.58 4.1   0.0121
## EFA_reduced$touched          0.81      0.81    0.74      0.58 4.2   0.0121
## EFA_reduced$melancholic      0.87      0.87    0.84      0.69 6.8   0.0081
##                           var.r med.r
## EFA_reduced$sentimental 0.02395  0.57
## EFA_reduced$deepmoved   0.00354  0.55
## EFA_reduced$touched     0.00098  0.57
## EFA_reduced$melancholic 0.01228  0.65
##
##  Item statistics
##                            n raw.r std.r r.cor r.drop mean  sd
## EFA_reduced$sentimental 765  0.83  0.83  0.74   0.69  1.8 1.1
## EFA_reduced$deepmoved   765  0.89  0.89  0.87   0.80  1.9 1.2
## EFA_reduced$touched     765  0.89  0.89  0.87   0.79  2.0 1.2
## EFA_reduced$melancholic 765  0.77  0.79  0.66   0.62  1.7 1.1
##
## Non missing response frequency for each item
##                             1    2    3    4    5 miss
## EFA_reduced$sentimental 0.58 0.18 0.11 0.09 0.03    0
## EFA_reduced$deepmoved   0.55 0.21 0.12 0.07 0.05    0
```

```
## EFA_reduced$touched     0.52 0.20 0.13 0.10 0.05    0
## EFA_reduced$melancholic 0.60 0.19 0.12 0.06 0.02    0
```

```
F3_alpha
```

```
##
## Reliability analysis
## Call: psych::alpha(x = F3)
##
##   raw_alpha std.alpha G6(smc) average_r S/N    ase mean sd median_r
##       0.88      0.88    0.85      0.65 7.4 0.0071    2  1     0.67
##
##  lower alpha upper     95% confidence boundaries
## 0.87 0.88 0.89
##
##  Reliability if an item is dropped:
##                          raw_alpha std.alpha G6(smc) average_r S/N alpha se
## EFA_reduced$energized        0.82      0.82    0.76      0.61 4.6   0.0114
## EFA_reduced$spurredmeon      0.84      0.84    0.80      0.64 5.4   0.0098
## EFA_reduced$invigorated      0.87      0.87    0.82      0.69 6.6   0.0082
## EFA_reduced$motivated        0.85      0.85    0.80      0.66 5.8   0.0092
##                            var.r med.r
## EFA_reduced$energized   0.00345  0.61
## EFA_reduced$spurredmeon 0.00790  0.68
## EFA_reduced$invigorated 0.00069  0.69
## EFA_reduced$motivated   0.00150  0.68
##
##  Item statistics
##                            n raw.r std.r r.cor r.drop mean  sd
## EFA_reduced$energized   765  0.90  0.90  0.86   0.81  2.1 1.2
## EFA_reduced$spurredmeon 765  0.85  0.86  0.80   0.75  1.8 1.1
## EFA_reduced$invigorated 765  0.83  0.83  0.74   0.69  2.0 1.2
## EFA_reduced$motivated   765  0.85  0.85  0.78   0.73  2.0 1.2
##
## Non missing response frequency for each item
##                             1    2    3    4    5 miss
## EFA_reduced$energized   0.45 0.21 0.19 0.10 0.06    0
## EFA_reduced$spurredmeon 0.55 0.20 0.15 0.07 0.03    0
## EFA_reduced$invigorated 0.49 0.18 0.18 0.10 0.04    0
## EFA_reduced$motivated   0.52 0.19 0.14 0.10 0.05    0
```

Internal consistncy for all factors is very high. (not really surprising)

The factor scores are extracted using the weighted least score mean and variance (WLSMV) estimation method.

```
CFA_factorscores<-lavPredict(model2.fit)
```

```
## loop over factors
idxframe<-data.frame(as.integer(rownames(data)))
idx <- idxframe[,1]
for (fs in colnames(CFA_factorscores)) {
  data[idx, fs] <- CFA_factorscores[ , fs]
}
```

Next step: z-standardise all variables (factors and predictors)

Step 4: Hierarchichal Linear Models for all 3 Factors

Subjective Ratings Factor 1

[predictors with t < 1 were excluded]

Result: Factor 1 can be be predicted by: more neutral as well as happy and fearful facial expressions.

full model

Anova Factor 1

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                         Sum Sq Mean Sq NumDF  DenDF F value    Pr(>F)
## Z_Neutral_FaceMeanDIV 12.3461 12.3461     1 664.47 15.4837 9.198e-05 ***
## Z_Sadness_FaceMeanDIV  2.9163  2.9163     1 664.88  3.6575   0.05625 .
## Z_Anger_FaceMeanDIV   17.0421 17.0421     1 666.44 21.3732 4.541e-06 ***
## Z_Fear_FaceMeanDIV     3.8646  3.8646     1 710.93  4.8467   0.02802 *
## Z_Disgust_FaceMeanDIV  1.3799  1.3799     1 674.55  1.7306   0.18878
## Z_meanAccelB           3.2414  3.2414     1 543.78  4.0651   0.04427 *
## Z_meanSUM_N_IncAB     14.9667 14.9667     1 683.72 18.7703 1.696e-05 ***
## Z_meanSUM_IncAB        1.2689  1.2689     1 688.29  1.5914   0.20756
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Factor 1

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula:
## ZCFA_F1 ~ Z_Neutral_FaceMeanDIV + Z_Sadness_FaceMeanDIV + Z_Anger_FaceMeanDIV +
##     Z_Fear_FaceMeanDIV + Z_Disgust_FaceMeanDIV + Z_meanAccelB +
##     Z_meanSUM_N_IncAB + Z_meanSUM_IncAB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1932.8   1983.1   -955.4   1910.8      700
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.7268 -0.7681 -0.2315  0.6985  3.6620
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.1126   0.3355
##  Residual             0.7974   0.8929
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                         Estimate Std. Error         df t value Pr(>|t|)
## (Intercept)            -0.005803   0.058933  47.524157  -0.098   0.9220
## Z_Neutral_FaceMeanDIV  -0.135770   0.034504 664.468854  -3.935 9.20e-05 ***
```

```
## Z_Sadness_FaceMeanDIV  -0.065990   0.034505 664.879087  -1.912   0.0562 .
## Z_Anger_FaceMeanDIV     0.180443   0.039031 666.444099   4.623 4.54e-06 ***
## Z_Fear_FaceMeanDIV     -0.085672   0.038915 710.931512  -2.202   0.0280 *
## Z_Disgust_FaceMeanDIV  -0.054546   0.041463 674.550386  -1.316   0.1888
## Z_meanAccelB            0.079999   0.039678 543.780898   2.016   0.0443 *
## Z_meanSUM_N_IncAB      -0.163641   0.037771 683.715305  -4.332 1.70e-05 ***
## Z_meanSUM_IncAB        -0.041952   0.033256 688.287603  -1.261   0.2076
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_S_FM Z_A_FM Z_F_FM Z_D_FM Z_mnAB Z_SUM_N
## Z_Ntr_FMDIV  0.001
## Z_Sdn_FMDIV  0.000  0.146
## Z_Ang_FMDIV  0.000  0.102  0.186
## Z_Fr_FcMDIV -0.011  0.151  0.014  0.025
## Z_Dsg_FMDIV -0.005 -0.065 -0.090 -0.447 -0.334
## Z_meanAcclB -0.004  0.005  0.061  0.089 -0.006 -0.044
## Z_SUM_N_IAB -0.013 -0.008  0.034 -0.053 -0.025  0.060  0.054
## Z_mnSUM_IAB -0.001 -0.024 -0.050 -0.102  0.002  0.047  0.012 -0.015
```

Confidence Intervals Factor 1

```
##                              2.5 %       97.5 %
## .sig01                          NA           NA
## .sigma                          NA           NA
## (Intercept)           -0.121309795  0.109703764
## Z_Neutral_FaceMeanDIV -0.203396622 -0.068144160
## Z_Sadness_FaceMeanDIV -0.133618816  0.001639265
## Z_Anger_FaceMeanDIV    0.103944486  0.256941522
## Z_Fear_FaceMeanDIV    -0.161943499 -0.009400263
## Z_Disgust_FaceMeanDIV -0.135811644  0.026719781
## Z_meanAccelB           0.002231894  0.157765349
## Z_meanSUM_N_IncAB     -0.237671038 -0.089611865
## Z_meanSUM_IncAB       -0.107132993  0.023228185
```

Anova Factor 2

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                         Sum Sq Mean Sq NumDF  DenDF F value   Pr(>F)
## Z_Neutral_FaceMeanDIV  7.2296  7.2296     1 664.03 10.2690 0.001418 **
## Z_Happy_FaceMeanDIV    4.5122  4.5122     1 663.58  6.4092 0.011583 *
## Z_Sadness_FaceMeanDIV  4.1735  4.1735     1 663.47  5.9280 0.015164 *
## Z_Surprise_FaceMeanDIV 1.1976  1.1976     1 668.02  1.7011 0.192588
## Z_Fear_FaceMeanDIV     2.1611  2.1611     1 667.55  3.0696 0.080226 .
## Z_meangsrB             2.3411  2.3411     1 110.87  3.3254 0.070913 .
## Z_meanSUM_N_IncAB      5.2355  5.2355     1 710.79  7.4365 0.006549 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Factor 2

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula:
## ZCFA_F2 ~ Z_Neutral_FaceMeanDIV + Z_Happy_FaceMeanDIV + Z_Sadness_FaceMeanDIV +
##     Z_Surprise_FaceMeanDIV + Z_Fear_FaceMeanDIV + Z_meangsrB +
```

```
##     Z_meanSUM_N_IncAB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1874.8   1920.5   -927.4   1854.8      701
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.3542 -0.7126 -0.1228  0.6387  3.0154
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.2421   0.4920
##  Residual             0.7040   0.8391
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                           Estimate Std. Error        df t value Pr(>|t|)
## (Intercept)               0.01248    0.07782  47.96513   0.160  0.87326
## Z_Neutral_FaceMeanDIV     0.10432    0.03255 664.02853   3.205  0.00142 **
## Z_Happy_FaceMeanDIV       0.08179    0.03231 663.57942   2.532  0.01158 *
## Z_Sadness_FaceMeanDIV    -0.07841    0.03220 663.46772  -2.435  0.01516 *
## Z_Surprise_FaceMeanDIV   -0.12649    0.09698 668.01881  -1.304  0.19259
## Z_Fear_FaceMeanDIV        0.17048    0.09731 667.55044   1.752  0.08023 .
## Z_meangsrB                0.12175    0.06677 110.87211   1.824  0.07091 .
## Z_meanSUM_N_IncAB         0.09954    0.03650 710.79345   2.727  0.00655 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_H_FM Z_Sd_FMDIV Z_Sr_FMDIV Z_F_FM Z_mngB
## Z_Ntr_FMDIV  0.002
## Z_Hpp_FMDIV  0.000  0.103
## Z_Sdn_FMDIV  0.000  0.144  0.154
## Z_Srp_FMDIV -0.001 -0.093 -0.069 -0.022
## Z_Fr_FcMDIV -0.004  0.136  0.034  0.018     -0.932
## Z_meangsrB   0.049  0.015 -0.008  0.010      0.041     -0.027
## Z_SUM_N_IAB -0.008 -0.010 -0.045  0.035      0.048     -0.048  0.010
```

Confidence Intervals Factor 2

```
##                                2.5 %      97.5 %
## .sig01                            NA          NA
## .sigma                            NA          NA
## (Intercept)            -0.140037897  0.16499808
## Z_Neutral_FaceMeanDIV   0.040516357  0.16812848
## Z_Happy_FaceMeanDIV     0.018469999  0.14511892
## Z_Sadness_FaceMeanDIV  -0.141524891 -0.01528993
## Z_Surprise_FaceMeanDIV -0.316570820  0.06358946
## Z_Fear_FaceMeanDIV     -0.020232568  0.36120160
## Z_meangsrB             -0.009107525  0.25261023
## Z_meanSUM_N_IncAB       0.027998874  0.17108667
```

Anova Factor 3

```
## Type III Analysis of Variance Table with Satterthwaite's method
```

```
##                          Sum Sq Mean Sq NumDF  DenDF F value   Pr(>F)
## Z_Neutral_FaceMeanDIV  1.6131  1.6131     1 664.68  2.2375 0.135172
## Z_Sadness_FaceMeanDIV  6.4852  6.4852     1 661.96  8.9958 0.002808 **
## Z_Anger_FaceMeanDIV    3.4769  3.4769     1 670.15  4.8229 0.028426 *
## Z_meanAccelB          11.5900 11.5900     1 695.55 16.0768 6.74e-05 ***
## Z_meangsrB             5.0442  5.0442     1 113.30  6.9970 0.009324 **
## Z_meanSUM_N_IncAB      1.0026  1.0026     1 710.83  1.3907 0.238678
## Z_meanbvpAmpB          0.9981  0.9981     1 245.06  1.3845 0.240472
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Factor 3

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula:
## ZCFA_F3 ~ Z_Neutral_FaceMeanDIV + Z_Sadness_FaceMeanDIV + Z_Anger_FaceMeanDIV +
##     Z_meanAccelB + Z_meangsrB + Z_meanSUM_N_IncAB + Z_meanbvpAmpB +
##     (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1891.0   1936.7   -935.5   1871.0      701
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.8359 -0.7536 -0.1693  0.6822  3.3718
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.2437   0.4937
##  Residual             0.7209   0.8491
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                          Estimate Std. Error        df t value Pr(>|t|)
## (Intercept)              0.01681    0.07827  45.71923   0.215  0.83094
## Z_Neutral_FaceMeanDIV    0.04857    0.03247 664.67838   1.496  0.13517
## Z_Sadness_FaceMeanDIV    0.09794    0.03265 661.96395   2.999  0.00281 **
## Z_Anger_FaceMeanDIV     -0.07206    0.03281 670.15326  -2.196  0.02843 *
## Z_meanAccelB            -0.16075    0.04009 695.54989  -4.010 6.74e-05 ***
## Z_meangsrB               0.18146    0.06860 113.30270   2.645  0.00932 **
## Z_meanSUM_N_IncAB        0.04353    0.03691 710.82965   1.179  0.23868
## Z_meanbvpAmpB           -0.06677    0.05674 245.05872  -1.177  0.24047
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_S_FM Z_A_FM Z_mnAcB Z_mngB Z_SUM_
## Z_Ntr_FMDIV  0.002
## Z_Sdn_FMDIV  0.000  0.143
## Z_Ang_FMDIV -0.002  0.098  0.160
## Z_meanAcclB -0.010  0.005  0.060  0.078
## Z_meangsrB   0.056  0.010  0.008  0.014 -0.137
## Z_SUM_N_IAB -0.009 -0.004  0.039 -0.035  0.045   0.003
```

```
## Z_mnbvpAmpB -0.044  0.036 -0.010 -0.030  0.002  -0.149 -0.004
```

Confidence Intervals Factor 3

```
##                              2.5 %       97.5 %
## .sig01                          NA           NA
## .sigma                          NA           NA
## (Intercept)           -0.13659685  0.170207738
## Z_Neutral_FaceMeanDIV -0.01507197  0.112221709
## Z_Sadness_FaceMeanDIV  0.03393778  0.161936328
## Z_Anger_FaceMeanDIV   -0.13637740 -0.007748865
## Z_meanAccelB          -0.23932729 -0.082172105
## Z_meangsrB             0.04700638  0.315918367
## Z_meanSUM_N_IncAB     -0.02881421  0.115867488
## Z_meanbvpAmpB         -0.17797835  0.044446066
```

Anova Happy

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                          Sum Sq Mean Sq NumDF  DenDF F value    Pr(>F)
## Z_Neutral_FaceMeanDIV  14.6701 14.6701     1 660.85 17.8153 2.775e-05 ***
## Z_Happy_FaceMeanDIV     5.1896  5.1896     1 662.71  6.3023  0.012295 *
## Z_Anger_FaceMeanDIV     7.7156  7.7156     1 662.66  9.3698  0.002295 **
## Z_Surprise_FaceMeanDIV  2.7063  2.7063     1 670.27  3.2865  0.070297 .
## Z_Fear_FaceMeanDIV      3.2556  3.2556     1 669.85  3.9536  0.047178 *
## Z_Disgust_FaceMeanDIV   1.2699  1.2699     1 670.02  1.5422  0.214730
## Z_meanAccelB            1.3408  1.3408     1 538.44  1.6283  0.202490
## Z_meanSUM_N_IncAB      19.6465 19.6465     1 684.22 23.8586 1.292e-06 ***
## Z_meanSUM_IncAB         1.5174  1.5174     1 689.65  1.8428  0.175071
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Happy

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_happiness ~ Z_Neutral_FaceMeanDIV + Z_Happy_FaceMeanDIV +
##     Z_Anger_FaceMeanDIV + Z_Surprise_FaceMeanDIV + Z_Fear_FaceMeanDIV +
##     Z_Disgust_FaceMeanDIV + Z_meanAccelB + Z_meanSUM_N_IncAB +
##     Z_meanSUM_IncAB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1958.9   2013.7   -967.4   1934.9      699
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.7739 -0.7425 -0.2614  0.6895  2.6974
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.1204   0.3470
##  Residual             0.8235   0.9074
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                          Estimate Std. Error         df t value Pr(>|t|)
```

```
## (Intercept)              0.008793   0.060610  44.322893   0.145   0.8853
## Z_Neutral_FaceMeanDIV    0.147528   0.034952 660.853068   4.221 2.77e-05 ***
## Z_Happy_FaceMeanDIV      0.088494   0.035250 662.712361   2.510   0.0123 *
## Z_Anger_FaceMeanDIV     -0.119323   0.038981 662.662430  -3.061   0.0023 **
## Z_Surprise_FaceMeanDIV  -0.200698   0.110707 670.269023  -1.813   0.0703 .
## Z_Fear_FaceMeanDIV       0.218045   0.109661 669.853962   1.988   0.0472 *
## Z_Disgust_FaceMeanDIV    0.053289   0.042911 670.017085   1.242   0.2147
## Z_meanAccelB             0.051786   0.040584 538.436306   1.276   0.2025
## Z_meanSUM_N_IncAB        0.188197   0.038529 684.218906   4.885 1.29e-06 ***
## Z_meanSUM_IncAB          0.048076   0.035415 689.649963   1.357   0.1751
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_H_FM Z_A_FM Z_S_FM Z_F_FM Z_D_FM Z_mnAB Z_SUM_N
## Z_Ntr_FMDIV  0.001
## Z_Hpp_FMDIV  0.001  0.088
## Z_Ang_FMDIV  0.000  0.078  0.015
## Z_Srp_FMDIV -0.002 -0.088 -0.033 -0.007
## Z_Fr_FcMDIV -0.003  0.136  0.026  0.014 -0.933
## Z_Dsg_FMDIV -0.005 -0.056 -0.171 -0.432 -0.114 -0.010
## Z_meanAcclB -0.004 -0.007 -0.091  0.078 -0.057  0.051 -0.015
## Z_SUM_N_IAB -0.013 -0.022 -0.062 -0.062  0.048 -0.053  0.067  0.054
## Z_mnSUM_IAB -0.001  0.008 -0.013 -0.088 -0.301  0.282  0.078  0.033 -0.026
```

Confidence Intervals Happy

```
##                               2.5 %      97.5 %
## .sig01                           NA          NA
## .sigma                           NA          NA
## (Intercept)            -0.110000010  0.12758552
## Z_Neutral_FaceMeanDIV   0.079022525  0.21603362
## Z_Happy_FaceMeanDIV     0.019404255  0.15758320
## Z_Anger_FaceMeanDIV    -0.195724676 -0.04292040
## Z_Surprise_FaceMeanDIV -0.417679353  0.01628299
## Z_Fear_FaceMeanDIV      0.003114475  0.43297604
## Z_Disgust_FaceMeanDIV  -0.030815771  0.13739416
## Z_meanAccelB           -0.027755899  0.13132851
## Z_meanSUM_N_IncAB       0.112681161  0.26371294
## Z_meanSUM_IncAB        -0.021336881  0.11748796
```

Anova Sad

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                          Sum Sq Mean Sq NumDF  DenDF F value   Pr(>F)
## Z_Neutral_FaceMeanDIV  2.6455  2.6455     1 663.47  3.1763 0.075171 .
## Z_Happy_FaceMeanDIV    6.2771  6.2771     1 667.83  7.5365 0.006209 **
## Z_Sadness_FaceMeanDIV  4.1368  4.1368     1 661.31  4.9668 0.026174 *
## Z_Surprise_FaceMeanDIV 5.6898  5.6898     1 674.10  6.8315 0.009156 **
## Z_Fear_FaceMeanDIV     5.8971  5.8971     1 671.52  7.0803 0.007980 **
## Z_meanAccelB           7.4508  7.4508     1 538.03  8.9457 0.002909 **
## Z_meangsrB             5.8344  5.8344     1  76.47  7.0050 0.009865 **
## Z_meanSUM_N_IncAB      1.0591  1.0591     1 675.91  1.2716 0.259863
## Z_meanSUM_IncAB        1.6643  1.6643     1 692.78  1.9982 0.157935
## Z_meanbvpAmpB          2.0899  2.0899     1 122.26  2.5092 0.115765
## ---
```

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

Model Summary Sad

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_sadness ~ Z_Neutral_FaceMeanDIV + Z_Happy_FaceMeanDIV +
##     Z_Sadness_FaceMeanDIV + Z_Surprise_FaceMeanDIV + Z_Fear_FaceMeanDIV +
##     Z_meanAccelB + Z_meangsrB + Z_meanSUM_N_IncAB + Z_meanSUM_IncAB +
##     Z_meanbvpAmpB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1962.1   2021.5   -968.1   1936.1      698
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.9149 -0.6385 -0.3812  0.4127  3.3369
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.09807  0.3132
##  Residual             0.83289  0.9126
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                           Estimate Std. Error         df t value Pr(>|t|)
## (Intercept)             -0.004015   0.056934  45.020956  -0.071  0.94409
## Z_Neutral_FaceMeanDIV   -0.063135   0.035425 663.472927  -1.782  0.07517 .
## Z_Happy_FaceMeanDIV     -0.097101   0.035370 667.827386  -2.745  0.00621 **
## Z_Sadness_FaceMeanDIV    0.078121   0.035053 661.308285   2.229  0.02617 *
## Z_Surprise_FaceMeanDIV   0.288686   0.110451 674.098872   2.614  0.00916 **
## Z_Fear_FaceMeanDIV      -0.293422   0.110272 671.518139  -2.661  0.00798 **
## Z_meanAccelB            -0.121967   0.040779 538.034950  -2.991  0.00291 **
## Z_meangsrB               0.148531   0.056119  76.466260   2.647  0.00986 **
## Z_meanSUM_N_IncAB       -0.043283   0.038383 675.910999  -1.128  0.25986
## Z_meanSUM_IncAB         -0.050035   0.035396 692.777494  -1.414  0.15794
## Z_meanbvpAmpB           -0.079770   0.050358 122.258052  -1.584  0.11577
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_H_FM Z_Sd_FMDIV Z_Sr_FMDIV Z_F_FM Z_mnAcB Z_mngB
## Z_Ntr_FMDIV -0.001
## Z_Hpp_FMDIV -0.003  0.106
## Z_Sdn_FMDIV -0.001  0.143  0.151
## Z_Srp_FMDIV -0.001 -0.092 -0.058 -0.014
## Z_Fr_FcMDIV -0.004  0.135  0.026  0.011     -0.942
## Z_meanAcclB -0.015 -0.009 -0.082  0.032     -0.060      0.055
## Z_meangsrB   0.065  0.005 -0.004 -0.001      0.039     -0.030 -0.182
## Z_SUM_N_IAB -0.010 -0.011 -0.048  0.037      0.055     -0.053  0.052   0.052
## Z_mnSUM_IAB  0.000  0.011 -0.009 -0.029     -0.298      0.283  0.036   0.006
## Z_mnbvpAmpB -0.057  0.040  0.081  0.009      0.017     -0.006  0.007  -0.177
##             Z_SUM_N Z_SUM_I
## Z_Ntr_FMDIV
```

```
## Z_Hpp_FMDIV
## Z_Sdn_FMDIV
## Z_Srp_FMDIV
## Z_Fr_FcMDIV
## Z_meanAcclB
## Z_meangsrB
## Z_SUM_N_IAB
## Z_mnSUM_IAB -0.036
## Z_mnbvpAmpB -0.018  -0.017
```

Confidence Intervals Sad

```
##                                2.5 %       97.5 %
## .sig01                            NA           NA
## .sigma                            NA           NA
## (Intercept)            -0.115604011  0.107574010
## Z_Neutral_FaceMeanDIV  -0.132566804  0.006296574
## Z_Happy_FaceMeanDIV    -0.166425241 -0.027776534
## Z_Sadness_FaceMeanDIV   0.009417785  0.146824560
## Z_Surprise_FaceMeanDIV  0.072206745  0.505166140
## Z_Fear_FaceMeanDIV     -0.509551689 -0.077291560
## Z_meanAccelB           -0.201892457 -0.042041905
## Z_meangsrB              0.038539082  0.258522127
## Z_meanSUM_N_IncAB      -0.118512323  0.031946219
## Z_meanSUM_IncAB        -0.119408764  0.019339732
## Z_meanbvpAmpB          -0.178469295  0.018930161
```

Anova Anger

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                         Sum Sq Mean Sq NumDF  DenDF F value    Pr(>F)
## Z_Neutral_FaceMeanDIV 9.9513  9.9513     1 667.29 11.4209 0.0007685 ***
## Z_Sadness_FaceMeanDIV 2.5414  2.5414     1 664.08  2.9167 0.0881343 .
## Z_Anger_FaceMeanDIV   2.0697  2.0697     1 676.33  2.3754 0.1237278
## Z_meanAccelB          2.0352  2.0352     1 471.42  2.3358 0.1270996
## Z_meangsrB            1.2052  1.2052     1  70.85  1.3831 0.2435031
## Z_meanSUM_N_IncAB     3.9514  3.9514     1 639.13  4.5350 0.0335901 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Anger

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_anger ~ Z_Neutral_FaceMeanDIV + Z_Sadness_FaceMeanDIV +
##     Z_Anger_FaceMeanDIV + Z_meanAccelB + Z_meangsrB + Z_meanSUM_N_IncAB +
##     (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1975.3   2016.4   -978.7   1957.3      702
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.3686 -0.4636 -0.2622 -0.0463  5.1998
##
## Random effects:
```

```
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.06978  0.2642
##  Residual             0.87132  0.9334
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                         Estimate Std. Error        df t value Pr(>|t|)
## (Intercept)            -0.01457    0.05189  46.15266  -0.281 0.780080
## Z_Neutral_FaceMeanDIV  -0.12037    0.03562 667.28806  -3.379 0.000769 ***
## Z_Sadness_FaceMeanDIV  -0.06126    0.03587 664.08488  -1.708 0.088134 .
## Z_Anger_FaceMeanDIV     0.05532    0.03589 676.33278   1.541 0.123728
## Z_meanAccelB            0.06197    0.04054 471.41738   1.528 0.127100
## Z_meangsrB              0.06063    0.05156  70.85281   1.176 0.243503
## Z_meanSUM_N_IncAB      -0.08212    0.03856 639.12913  -2.130 0.033590 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_S_FM Z_A_FM Z_mnAB Z_mngB
## Z_Ntr_FMDIV  0.003
## Z_Sdn_FMDIV -0.001  0.144
## Z_Ang_FMDIV -0.004  0.103  0.159
## Z_meanAcclB -0.017  0.003  0.055  0.074
## Z_meangsrB   0.057  0.010 -0.001  0.000 -0.194
## Z_SUM_N_IAB -0.011 -0.003  0.039 -0.030  0.052  0.064
```

Confidence Intervals Anger

```
##                              2.5 %       97.5 %
## .sig01                          NA           NA
## .sigma                          NA           NA
## (Intercept)           -0.11628642  0.087137104
## Z_Neutral_FaceMeanDIV -0.19018074 -0.050560338
## Z_Sadness_FaceMeanDIV -0.13155991  0.009043583
## Z_Anger_FaceMeanDIV   -0.01502980  0.125670908
## Z_meanAccelB          -0.01749994  0.141430052
## Z_meangsrB            -0.04041384  0.161679153
## Z_meanSUM_N_IncAB     -0.15769636 -0.006539513
```

Anova Surprise

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                       Sum Sq Mean Sq NumDF  DenDF F value  Pr(>F)
## Z_Happy_FaceMeanDIV   1.8870  1.8870     1 661.23  2.6388 0.10476
## Z_Sadness_FaceMeanDIV 3.7425  3.7425     1 661.22  5.2335 0.02247 *
## Z_Anger_FaceMeanDIV   1.6955  1.6955     1 663.00  2.3710 0.12409
## Z_Fear_FaceMeanDIV    1.4953  1.4953     1 709.91  2.0910 0.14861
## Z_meangsrB            1.5613  1.5613     1 113.14  2.1834 0.14229
## Z_meanbvpRateB        0.9656  0.9656     1 447.67  1.3502 0.24585
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Surprise

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_surprise ~ Z_Happy_FaceMeanDIV + Z_Sadness_FaceMeanDIV +
```

```
##     Z_Anger_FaceMeanDIV + Z_Fear_FaceMeanDIV + Z_meangsrB + Z_meanbvpRateB +
##     (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1888.8   1929.9   -935.4   1870.8      702
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.2176 -0.6149 -0.2438  0.5933  3.4944
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.2771   0.5264
##  Residual             0.7151   0.8456
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                         Estimate Std. Error        df t value Pr(>|t|)
## (Intercept)              0.01177    0.08248  45.80735   0.143   0.8872
## Z_Happy_FaceMeanDIV      0.05254    0.03235 661.23211   1.624   0.1048
## Z_Sadness_FaceMeanDIV   -0.07415    0.03241 661.21789  -2.288   0.0225 *
## Z_Anger_FaceMeanDIV      0.05047    0.03278 663.00470   1.540   0.1241
## Z_Fear_FaceMeanDIV       0.05145    0.03558 709.90961   1.446   0.1486
## Z_meangsrB               0.10286    0.06961 113.14051   1.478   0.1423
## Z_meanbvpRateB           0.05645    0.04858 447.67304   1.162   0.2459
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_H_FM Z_S_FM Z_A_FM Z_F_FM Z_mngB
## Z_Hpp_FMDIV -0.001
## Z_Sdn_FMDIV  0.000  0.134
## Z_Ang_FMDIV -0.001 -0.050  0.140
## Z_Fr_FcMDIV -0.013 -0.090 -0.044 -0.139
## Z_meangsrB   0.048 -0.008  0.011  0.016  0.029
## Z_menbvpRtB -0.007 -0.006  0.001  0.002  0.002 -0.072
```

Confidence Intervals Surprise

```
##                               2.5 %      97.5 %
## .sig01                           NA          NA
## .sigma                           NA          NA
## (Intercept)           -0.14989358  0.17342572
## Z_Happy_FaceMeanDIV   -0.01085286  0.11593915
## Z_Sadness_FaceMeanDIV -0.13768557 -0.01062313
## Z_Anger_FaceMeanDIV   -0.01377143  0.11470694
## Z_Fear_FaceMeanDIV    -0.01828652  0.12119293
## Z_meangsrB            -0.03357689  0.23929512
## Z_meanbvpRateB        -0.03876176  0.15165256
```

Anova Fear

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                         Sum Sq Mean Sq NumDF  DenDF F value    Pr(>F)
## Z_Neutral_FaceMeanDIV  7.7500  7.7500     1 667.85  9.2198  0.002487 **
```

```
## Z_Sadness_FaceMeanDIV  1.9339  1.9339     1 664.80  2.3007  0.129790
## Z_Anger_FaceMeanDIV   24.2507 24.2507     1 665.98 28.8498 1.082e-07 ***
## Z_Disgust_FaceMeanDIV  4.7043  4.7043     1 702.00  5.5964  0.018268 *
## Z_meanAccelB           1.2849  1.2849     1 474.95  1.5286  0.216934
## Z_meanSUM_N_IncAB      8.3839  8.3839     1 653.40  9.9739  0.001661 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Fear

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_fear ~ Z_Neutral_FaceMeanDIV + Z_Sadness_FaceMeanDIV +
##     Z_Anger_FaceMeanDIV + Z_Disgust_FaceMeanDIV + Z_meanAccelB +
##     Z_meanSUM_N_IncAB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1956.2   1997.3   -969.1   1938.2      702
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.7696 -0.6384 -0.3153  0.3404  3.2786
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.08522  0.2919
##  Residual             0.84058  0.9168
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                          Estimate Std. Error         df t value Pr(>|t|)
## (Intercept)            -0.009215   0.054436  47.053162  -0.169  0.86630
## Z_Neutral_FaceMeanDIV  -0.106261   0.034996 667.852563  -3.036  0.00249 **
## Z_Sadness_FaceMeanDIV  -0.053656   0.035374 664.804076  -1.517  0.12979
## Z_Anger_FaceMeanDIV     0.214005   0.039843 665.979816   5.371 1.08e-07 ***
## Z_Disgust_FaceMeanDIV  -0.094448   0.039924 702.003439  -2.366  0.01827 *
## Z_meanAccelB            0.049187   0.039783 474.948097   1.236  0.21693
## Z_meanSUM_N_IncAB      -0.120767   0.038240 653.403730  -3.158  0.00166 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Z_N_FM Z_S_FM Z_A_FM Z_D_FM Z_mnAB
## Z_Ntr_FMDIV  0.002
## Z_Sdn_FMDIV  0.000  0.144
## Z_Ang_FMDIV  0.001  0.097  0.181
## Z_Dsg_FMDIV -0.008 -0.013 -0.089 -0.465
## Z_meanAcclB -0.005  0.006  0.061  0.089 -0.047
## Z_SUM_N_IAB -0.014 -0.005  0.034 -0.053  0.056  0.059
```

Confidence Intervals Fear

```
##                             2.5 %      97.5 %
## .sig01                         NA          NA
## .sigma                         NA          NA
```

```
## (Intercept)           -0.1159067  0.09747674
## Z_Neutral_FaceMeanDIV -0.1748512 -0.03767111
## Z_Sadness_FaceMeanDIV -0.1229888  0.01567637
## Z_Anger_FaceMeanDIV    0.1359139  0.29209549
## Z_Disgust_FaceMeanDIV -0.1726986 -0.01619780
## Z_meanAccelB          -0.0287871  0.12716029
## Z_meanSUM_N_IncAB     -0.1957153 -0.04581836
```

Anova Disgust

```
## Type III Analysis of Variance Table with Satterthwaite's method
##                       Sum Sq Mean Sq NumDF  DenDF F value   Pr(>F)
## Z_Neutral_FaceMeanDIV 5.7876  5.7876     1 664.73  6.4745 0.011168 *
## Z_Sadness_FaceMeanDIV 3.7038  3.7038     1 665.08  4.1433 0.042195 *
## Z_Anger_FaceMeanDIV   4.9138  4.9138     1 668.08  5.4970 0.019341 *
## Z_Fear_FaceMeanDIV    2.3307  2.3307     1 698.75  2.6074 0.106820
## Z_meanAccelB          4.5569  4.5569     1 469.71  5.0977 0.024416 *
## Z_meanSUM_N_IncAB     5.9694  5.9694     1 650.11  6.6778 0.009979 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Model Summary Disgust

```
## Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's
##   method [lmerModLmerTest]
## Formula: Z_basic_disgust ~ Z_Neutral_FaceMeanDIV + Z_Sadness_FaceMeanDIV +
##     Z_Anger_FaceMeanDIV + Z_Fear_FaceMeanDIV + Z_meanAccelB +
##     Z_meanSUM_N_IncAB + (1 | ID)
##    Data: ZnewFA_data
##
##      AIC      BIC   logLik deviance df.resid
##   1998.9   2040.0   -990.4   1980.9      702
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.6127 -0.4370 -0.2345 -0.0415  5.1901
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  ID       (Intercept) 0.08728  0.2954
##  Residual             0.89391  0.9455
## Number of obs: 711, groups:  ID, 48
##
## Fixed effects:
##                         Estimate Std. Error         df t value Pr(>|t|)
## (Intercept)             0.003401   0.055513  47.392638   0.061  0.95141
## Z_Neutral_FaceMeanDIV  -0.092723   0.036440 664.732493  -2.545  0.01117 *
## Z_Sadness_FaceMeanDIV  -0.073971   0.036340 665.080497  -2.036  0.04219 *
## Z_Anger_FaceMeanDIV     0.086289   0.036804 668.080556   2.345  0.01934 *
## Z_Fear_FaceMeanDIV     -0.062013   0.038404 698.750097  -1.615  0.10682
## Z_meanAccelB            0.092291   0.040876 469.705882   2.258  0.02442 *
## Z_meanSUM_N_IncAB      -0.101584   0.039311 650.105758  -2.584  0.00998 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
```

```
##             (Intr) Z_N_FM Z_S_FM Z_A_FM Z_F_FM Z_mnAB
## Z_Ntr_FMDIV  0.001
## Z_Sdn_FMDIV -0.001  0.140
## Z_Ang_FMDIV -0.002  0.079  0.160
## Z_Fr_FcMDIV -0.013  0.140 -0.017 -0.151
## Z_meanAcclB -0.005  0.002  0.057  0.078 -0.020
## Z_SUM_N_IAB -0.014 -0.004  0.039 -0.030 -0.003  0.062
```

Confidence Intervals Disgust

```
##                              2.5 %      97.5 %
## .sig01                          NA          NA
## .sigma                          NA          NA
## (Intercept)           -0.10540217  0.11220388
## Z_Neutral_FaceMeanDIV -0.16414451 -0.02130104
## Z_Sadness_FaceMeanDIV -0.14519642 -0.00274559
## Z_Anger_FaceMeanDIV    0.01415490  0.15842309
## Z_Fear_FaceMeanDIV    -0.13728389  0.01325834
## Z_meanAccelB           0.01217447  0.17240673
## Z_meanSUM_N_IncAB     -0.17863136 -0.02453698
```