

# F04\_mci\_style\_neu\_tables.R

Aristei et al.

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```
## MCI_STYLE_NEU TABLES SCRIPT ##
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```
# Creates a table for the output of our four linear mixed-effects models. The upper half of the table includes ANOVA-  
# style type III tests (F-tests), the bottom half contains planned follow-up contrasts. For the F-tests, F-values,  
# degrees of freedom, and p-values are printed, whereas for the contrasts, regression estimates, 95% confidence  
# intervals, and p-values are printed.
```

```
# Load packages  
library(huxtable)      # Version 5.0.0
```

```
# Load output from mixed models  
load("EEG/export/stats.RData")
```

```
## Registered S3 methods overwritten by 'car':  
##   method                      from  
##   influence.merMod            lme4  
##   cooks.distance.influence.merMod lme4  
##   dfbeta.influence.merMod      lme4  
##   dfbetas.influence.merMod     lme4
```

```
# Extract a table for the F tests for each model (columns: F value (df), p-value)  
anovas <- lapply(tests, function(x){  
  coefs <- data.frame(paste0(format(round(x$`F value`, 2), trim = TRUE, nsmall = 2),  
                             "<br/>(", x$NumDF, ", ", ", format(round(x$DenDF, 1), trim = TRUE, nsmall = 1), ")"),  
                      format(round(x$`Pr(>F)`, 3), nsmall = 3),  
                      fix.empty.names = FALSE)
```

```

coefs[,2] <- substr(coefs[,2], 1, 5)
coefs[coefs[,2] == "0.000", 2] <- "< .001"
return(coefs))

# Bind all the F-tests to one data frame
anovas <- do.call(cbind, anovas)
anovas <- rbind(c("**_F_** (**_df_**)", "**_p_**"), anovas)

# Extract a table for the planned contrasts for each model (columns: estimate [CI], p-value)
conts <- lapply(means.nested, function(x){
  x <- as.data.frame(x)
  coefs <- data.frame(paste0(format(round(x$estimate, 2), trim = TRUE, nsmall = 2),
    "<br/>[", format(round(x$lower.CL, 2), trim = TRUE, nsmall = 2), ", ", " ",
    format(round(x$upper.CL, 2), trim = TRUE, nsmall = 2), "]", ")",
    format(round(x$p.value, 3), nsmall = 3),
    fix.empty.names = FALSE)
  coefs[,2] <- substr(coefs[,2], 1, 5)
  coefs[coefs[,2] == "0.000", 2] <- "< .001"
  return(coefs))

# Bind all the planned contrasts to one data frame
conts <- do.call(cbind, conts)
conts <- rbind(c("**Est. [95% CI]**", "**_p_**"), conts)

# Bind both data frames (F-tests and contrasts) below one another
tab <- rbind(anovas, conts)

# Add model names (dependent variables) as the first row
tab <- rbind(c("Rating 1", "", "Rating 2", "", "Verb-Related N400", "", "Picture-Related N400", ""), tab)

# Add a stub column
tab <- cbind(c("", "**Model output**", "Semantics", "Style", "Semantics × style",
  "**Planned contrasts**", "Vio. - int.<br/>(normal)", "MCI - int.<br/>(normal)",
  "Vio. - int.<br/>(fairytales)", "MCI - int.<br/>(fairytales)"), tab)

# Remove old column names
names(tab) <- NULL

```

```
# Create a huxtable and output as markdown
huxt <- huxtable(tab, add_colnames = FALSE)
print_md(huxt, max_width = Inf)
```

	Rating 1		Rating 2		Verb-Related N400		Picture-Related N400	
Model output	<i>F</i> ( <i>df</i> )	<i>p</i>	<i>F</i> ( <i>df</i> )	<i>p</i>	<i>F</i> ( <i>df</i> )	<i>p</i>	<i>F</i> ( <i>df</i> )	<i>p</i>
Semantics	0.06(2, 90.1)	0.945	0.05(2, 78.9)	0.949	2.15(2, 167.0)	0.120	1.89(2, 75.8)	0.158
Style	1.79(1, 22.2)	0.195	5.85(1, 23.1)	0.024	1.06(1, 49.8)	0.308	6.92(1, 6692.5)	0.009
Semantics × style	0.22(2, 161.9)	0.800	0.22(2, 69.6)	0.804	1.56(2, 58.8)	0.218	4.78(2, 82.2)	0.011
Planned contrasts	Est. [95% CI]	<i>p</i>	Est. [95% CI]	<i>p</i>	Est. [95% CI]	<i>p</i>	Est. [95% CI]	<i>p</i>
Vio. - int.(normal)	0.00[-0.05, 0.06]	1.000	0.01[-0.05, 0.07]	1.000	-0.02[-0.35, 0.30]	1.000	-0.22[-0.77, 0.33]	0.720
MCI - int.(normal)	0.00[-0.05, 0.06]	1.000	0.01[-0.06, 0.07]	1.000	-0.38[-0.74, -0.03]	0.033	-0.75[-1.27, -0.23]	0.003
Vio. - int.(fairytale)	0.01[-0.04, 0.07]	1.000	0.00[-0.06, 0.06]	1.000	0.06[-0.26, 0.39]	1.000	0.27[-0.28, 0.82]	0.540
MCI - int.(fairytale)	0.00[-0.06, 0.05]	1.000	-0.01[-0.08, 0.05]	1.000	0.02[-0.34, 0.37]	1.000	0.05[-0.48, 0.57]	1.000

```
# Export as a word file (after some re-formatting)
tab_word <- data.frame(lapply(tab, function(x){gsub("<br/>", "\n", x)}))
tab_word <- data.frame(lapply(tab_word, function(x){gsub("\\\\*|\\\\_", "", x)}))
huxt_word <- huxtable(tab_word, add_colnames = FALSE)
quick_docx(huxt_word, file = "EEG/tables/lmm_table.docx", open = FALSE)
```

```
# System specs and package versions
sessionInfo()
```

```
## R version 4.0.2 (2020-06-22)
## Platform: x86_64-apple-darwin17.0 (64-bit)
## Running under: macOS Catalina 10.15.6
##
## Matrix products: default
## BLAS: /System/Library/Frameworks/Accelerate.framework/Versions/A/Frameworks/vecLib.framework/Versions/A/libBLAS.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/4.0/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
```

```

## attached base packages:
## [1] stats      graphics  grDevices datasets  utils      methods    base
##
## other attached packages:
## [1] huxtable_5.0.0
##
## loaded via a namespace (and not attached):
## [1] Rcpp_1.0.5      mvtnorm_1.1-1    lattice_0.20-41  assertthat_0.2.1 digest_0.6.25
## [6] R6_2.4.1        cellranger_1.1.0 plyr_1.8.6       evaluate_0.14    ggplot2_3.3.2
## [11] highr_0.8        pillar_1.4.6     gdtools_0.2.2    rlang_0.4.7      uuid_0.1-4
## [16] curl_4.3         readxl_1.3.1     rstudioapi_0.11  minqa_1.2.4      data.table_1.13.0
## [21] car_3.0-8        nloptr_1.2.2.2   Matrix_1.2-18    flextable_0.5.11 rmarkdown_2.3
## [26] splines_4.0.2    lme4_1.1-23      statmod_1.4.34   stringr_1.4.0    foreign_0.8-80
## [31] afex_0.27-2      munsell_0.5.0    compiler_4.0.2   numDeriv_2016.8-1.1 xfun_0.16
## [36] systemfonts_0.3.1 base64enc_0.1-3   pkgconfig_2.0.3  lmerTest_3.1-2   htmltools_0.5.0
## [41] tidyselect_1.1.0 tibble_3.0.3     rio_0.5.16       crayon_1.3.4     dplyr_1.0.0
## [46] commonmark_1.7   MASS_7.3-51.6    grid_4.0.2       nlme_3.1-148     xtable_1.8-4
## [51] gtable_0.3.0     lifecycle_0.2.0  magrittr_1.5     scales_1.1.1     zip_2.1.1
## [56] estimability_1.3 stringi_1.4.6     carData_3.0-4    renv_0.12.0      reshape2_1.4.4
## [61] xml2_1.3.2       ellipsis_0.3.1   generics_0.0.2   vctrs_0.3.2     boot_1.3-25
## [66] openxlsx_4.1.5   tools_4.0.2      forcats_0.5.0    glue_1.4.1       officer_0.3.14
## [71] purrr_0.3.4      hms_0.5.3        emmeans_1.4.8    abind_1.4-5      parallel_4.0.2
## [76] yaml_2.2.1       colorspace_1.4-1 cpp11_0.2.1      knitr_1.29       haven_2.3.1

```