F04_mci_style_neu_tables.R

Aristei et al.

2020

```
## MCI_STYLE_NEU TABLES SCRIPT ##

# 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)
```

```r
  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/>(fairytale)", "MCI – int.<br/>(fairytale)"), tab)

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

```r
# 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	***F*** **(*df*)**	***p***	***F*** **(*df*)**	***p***	***F*** **(*df*)**	***p***	***F*** **(*df*)**	***p***
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]**	***p***	**Est. [95% CI]**	***p***	**Est. [95% CI]**	***p***	**Est. [95% CI]**	***p***
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

```r
# 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)
```

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

```
## R version 4.0.2 (2020-06-22)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 10 x64 (build 18362)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=German_Germany.1252  LC_CTYPE=German_Germany.1252    LC_MONETARY=German_Germany.1252
## [4] LC_NUMERIC=C                    LC_TIME=German_Germany.1252
##
## 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
```