Try stargazer

Ben Smith

Contents


```
load("modeling_t_5_10-activity.RData")
```

```
#create nomred versions of these columns
trial_neural_behav_roi_stop<-trial_neural_behav_roi %>% filter(trial_n>50 & condition %in% c("CorrectSt

trial_neural_behav_roi_stop<- trial_neural_behav_roi_stop %>%
  mutate(P_stop_trial_change_z_stop = (P_stop_trial_change-mean(P_stop_trial_change))/sd(P_stop_trial_c
         post_pre_rt_change_z_stop = (post_pre_rt_change_z-mean(post_pre_rt_change_z))/sd(post_pre_rt_c
         )

friendly_name_transform_table<-read_csv("friendly_names.csv")
```

```
## Rows: 8 Columns: 2
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (2): originalname, replacementname
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
model_full_effects_x_zs <- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + P_stop_trial_change_z_stop+ post_pre_rt_change_z_stop + (1
  trial_neural_behav_roi_stop)
```

```
## Warning in checkConv(attr(opt, "derivs"), opt$par, ctrl = control$checkConv, :
## Model failed to converge with max|grad| = 0.00213731 (tol = 0.002, component 1)
```

```
#summary(model_full_effects_x_zs)


model_no_rt_x_zs<- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + P_stop_trial_change_z_stop + (1 +post_pre_rt_change_z_stop
  trial_neural_behav_roi_stop)

anova(model_full_effects_x_zs,model_no_rt_x_zs)
```

```
## refitting model(s) with ML (instead of REML)
```

```
## Data: trial_neural_behav_roi_stop
## Models:
## model_no_rt_x_zs: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change_z_stop + (1 + post_
## model_full_effects_x_zs: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change_z_stop + pos
##                         npar   AIC   BIC  logLik deviance  Chisq Df Pr(>Chisq)
```

```
## model_no_rt_x_zs          11 18745 18819 -9361.3    18723
## model_full_effects_x_zs   12 18739 18821 -9357.7    18715 7.2387  1   0.007135
##
## model_no_rt_x_zs
## model_full_effects_x_zs **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
model_no_p_stop_zs<- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + post_pre_rt_change_z_stop + (1 +post_pre_rt_change_z_stop
  trial_neural_behav_roi_stop)

anova(model_full_effects_x_zs,model_no_p_stop_zs)
```

```
## refitting model(s) with ML (instead of REML)
```

```
## Data: trial_neural_behav_roi_stop
## Models:
## model_no_p_stop_zs: med_post_trial_z ~ trial_n_s + condition + post_pre_rt_change_z_stop + (1 + post_
## model_full_effects_x_zs: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change_z_stop + pos
##                         npar   AIC   BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model_no_p_stop_zs        11 18785 18860 -9381.5    18763
## model_full_effects_x_zs   12 18739 18821 -9357.7    18715 47.508  1  5.477e-12
##
## model_no_p_stop_zs
## model_full_effects_x_zs ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
model_base<- lme4::lmer(
   med_post_trial_z ~ condition + (1 +post_pre_rt_change_z_stop  + P_stop_trial_change_z_stop  | subid)
  trial_neural_behav_roi_stop)
```

```
## Warning in checkConv(attr(opt, "derivs"), opt$par, ctrl = control$checkConv, :
## Model failed to converge with max|grad| = 0.00201185 (tol = 0.002, component 1)
```

```
table_normed <- stargazer(model_base, model_no_rt_x_zs, model_no_p_stop_zs, model_full_effects_x_zs,titl
```

% Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com % Date and time: Wed, Apr 26, 2023 - 14:11:35

```
#
```

```
allmodelsanova <- anova(model_base, model_no_rt_x_zs, model_no_p_stop_zs, model_full_effects_x_zs)
```

```
## refitting model(s) with ML (instead of REML)
```

```
allmodelsanova
```

```
## Data: trial_neural_behav_roi_stop
## Models:
## model_base: med_post_trial_z ~ condition + (1 + post_pre_rt_change_z_stop + P_stop_trial_change_z_st
## model_no_rt_x_zs: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change_z_stop + (1 + post_
## model_no_p_stop_zs: med_post_trial_z ~ trial_n_s + condition + post_pre_rt_change_z_stop + (1 + post_
## model_full_effects_x_zs: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change_z_stop + pos
##                         npar   AIC   BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model_base                 9 18787 18848 -9384.6    18769
## model_no_rt_x_zs          11 18745 18819 -9361.3    18723 46.502  2  7.983e-11
## model_no_p_stop_zs        11 18785 18860 -9381.5    18763  0.000  0
```

Table 1: asis Markdown

	Dependent variable:			
	med_post_trial_z			
	(1)	(2)	(3)	(4)
trial_n_s		−0.216***	0.016	−0.217***
		(0.039)	(0.018)	(0.039)
conditionFailedStop	−0.441***	−0.446***	−0.432***	−0.437***
	(0.025)	(0.025)	(0.025)	(0.025)
P_stop_trial_change_z_stop		0.215***		0.218***
		(0.031)		(0.031)
post_pre_rt_change_z_stop			−0.031**	−0.035***
			(0.013)	(0.013)
Constant	0.174***	0.104***	0.179***	0.101***
	(0.017)	(0.022)	(0.019)	(0.022)
Observations	6,578	6,578	6,578	6,578
Log Likelihood	−9,390.781	−9,373.189	−9,394.198	−9,373.018
Akaike Inf. Crit.	18,799.560	18,768.380	18,810.400	18,770.030
Bayesian Inf. Crit.	18,860.690	18,843.080	18,885.100	18,851.530
Note:				*p<0.1; **p<0.05; ***p<0.01

```
## model_full_effects_x_zs   12 18739 18821 -9357.7    18715 47.508  1  5.477e-12
##
## model_base
## model_no_rt_x_zs        ***
## model_no_p_stop_zs
## model_full_effects_x_zs ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
library(xtable)
xtable(data.frame(allmodelsanova))
```

% latex table generated in R 4.2.1 by xtable 1.8-4 package % Wed Apr 26 14:11:38 2023

	npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr..Chisq.
model_base	9.00	18787.16	18848.28	-9384.58	18769.16			
model_no_rt_x_zs	11.00	18744.66	18819.36	-9361.33	18722.66	46.50	2.00	0.00
model_no_p_stop_zs	11.00	18784.93	18859.63	-9381.46	18762.93	0.00	0.00	
model_full_effects_x_zs	12.00	18739.42	18820.92	-9357.71	18715.42	47.51	1.00	0.00

without norming.

For some reason the ANOVA and stargazer packages do different estimates. Maybe it's because these models are not well specified because of the scales. Let's try the original scale model I was working with.

```
model_full_effects_incc <- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + P_stop_trial_change+ post_pre_rt_change + (1 +post_pre_rt_
  trial_neural_behav_roi %>% filter(trial_n>50 & condition %in% c("CorrectStop","FailedStop"))
  )
summary(model_full_effects_incc)
```

```
## Linear mixed model fit by REML ['lmerMod']
## Formula: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change +
##     post_pre_rt_change + (1 + post_pre_rt_change + P_stop_trial_change |
##     subid)
##    Data: trial_neural_behav_roi %>% filter(trial_n > 50 & condition %in%
##     c("CorrectStop", "FailedStop"))
##
## REML criterion at convergence: 18731.9
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -10.2598  -0.5902   0.0341   0.6130   3.8742
##
## Random effects:
##  Groups   Name                Variance  Std.Dev. Corr
##  subid    (Intercept)           0.04270  0.2067
##           post_pre_rt_change    0.04519  0.2126   0.31
##           P_stop_trial_change 385.76413 19.6409  -0.96 -0.42
##  Residual                       0.99305  0.9965
## Number of obs: 6578, groups:  subid, 266
##
## Fixed effects:
##                     Estimate Std. Error t value
```

```
## (Intercept)         -0.34472    0.07900  -4.363
## trial_n_s           -0.21746    0.03864  -5.627
## conditionFailedStop -0.43681    0.02527 -17.286
## P_stop_trial_change 38.13803    5.48732   6.950
## post_pre_rt_change  -0.22885    0.08409  -2.721
##
## Correlation of Fixed Effects:
##             (Intr) trl_n_ cndtFS P_st__
## trial_n_s    0.906
## cndtnFldStp -0.098  0.037
## P_stp_trl_c -0.972 -0.888 -0.034
## pst_pr_rt_c  0.003  0.021 -0.137 -0.031
```

```
model_no_rt<- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + P_stop_trial_change + (1 +post_pre_rt_change  + P_stop_tria
  trial_neural_behav_roi %>% filter(trial_n>50 & condition %in% c("CorrectStop","FailedStop"))
  )
```

```
## boundary (singular) fit: see help('isSingular')
```

```
anova(model_full_effects_incc,model_no_rt)
```

```
## refitting model(s) with ML (instead of REML)
```

```
## Data: trial_neural_behav_roi %>% filter(trial_n > 50 & condition %in%  ...
## Models:
## model_no_rt: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change + (1 + post_pre_rt_change
## model_full_effects_incc: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change + post_pre_r
##                         npar   AIC   BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model_no_rt               11 18753 18828 -9365.4    18731
## model_full_effects_incc   12 18739 18821 -9357.7    18715 15.475  1  8.359e-05
##
## model_no_rt
## model_full_effects_incc ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
model_no_p_stop<- lme4::lmer(
   med_post_trial_z ~ trial_n_s+ condition + post_pre_rt_change + (1 +post_pre_rt_change  + P_stop_trial
  trial_neural_behav_roi %>% filter(trial_n>50 & condition %in% c("CorrectStop","FailedStop"))
  )

anova(model_full_effects_incc,model_no_p_stop)
```

```
## refitting model(s) with ML (instead of REML)
```

```
## Data: trial_neural_behav_roi %>% filter(trial_n > 50 & condition %in%  ...
## Models:
## model_no_p_stop: med_post_trial_z ~ trial_n_s + condition + post_pre_rt_change + (1 + post_pre_rt_cha
## model_full_effects_incc: med_post_trial_z ~ trial_n_s + condition + P_stop_trial_change + post_pre_r
##                         npar   AIC   BIC  logLik deviance  Chisq Df Pr(>Chisq)
## model_no_p_stop           11 18785 18860 -9381.5    18763
## model_full_effects_incc   12 18739 18821 -9357.7    18715 47.508  1  5.477e-12
##
## model_no_p_stop
## model_full_effects_incc ***
## ---
```

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

```
data_unscaled_anova<-anova(model_no_p_stop,model_no_rt,model_full_effects_incc)
```

```
## refitting model(s) with ML (instead of REML)
```

```
xtable(data.frame(data_unscaled_anova))
```

% latex table generated in R 4.2.1 by xtable 1.8-4 package % Wed Apr 26 14:11:55 2023

	npar	AIC	BIC	logLik	deviance	Chisq	Df	Pr..Chisq.
model_no_p_stop	11.00	18784.93	18859.63	-9381.46	18762.93			
model_no_rt	11.00	18752.89	18827.60	-9365.45	18730.89	32.03	0.00	
model_full_effects_incc	12.00	18739.42	18820.92	-9357.71	18715.42	15.48	1.00	0.00

```
data_unscaled <- stargazer(
  model_no_p_stop,
  model_no_rt,
  model_full_effects_incc,
  title="asis Markdown",
  p=c(rep(list(rep(1,4)),2),list(rep(1,5)))

  )
```

% Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com % Date and time: Wed, Apr 26, 2023 - 14:11:55

Table 2: asis Markdown

	Dependent variable:		
	med_post_trial_z		
	(1)	(2)	(3)
trial_n_s	0.016	−0.217	−0.217
	(0.018)	(0.039)	(0.039)
conditionFailedStop	−0.432	−0.443	−0.437
	(0.025)	(0.025)	(0.025)
post_pre_rt_change	−0.208		−0.229
	(0.084)		(0.084)
P_stop_trial_change		38.423	38.138
		(5.331)	(5.487)
Constant	0.187	−0.354	−0.345
	(0.019)	(0.078)	(0.079)
Observations	6,578	6,578	6,578
Log Likelihood	−9,392.307	−9,372.224	−9,365.962
Akaike Inf. Crit.	18,806.610	18,766.450	18,755.920
Bayesian Inf. Crit.	18,881.320	18,841.150	18,837.420
Note:			*p<0.1; **p<0.05; ***p<0.01

```
for (i in 1:nrow(friendly_name_transform_table)){
  # data_unscaled <- lapply(data_unscaled,function(data_line){
  #   gsub(
  #     gsub("\\_", "\\\\\\\\\_",friendly_name_transform_table$originalname[i]),
  #     friendly_name_transform_table$replacementname[i], data_line)
  # }
  # )
  print(friendly_name_transform_table$originalname[i])
  data_unscaled <- gsub(
    gsub("\\_", "\\\\\\\\\_",friendly_name_transform_table$originalname[i]),
    friendly_name_transform_table$replacementname[i], data_unscaled)
}
```

[1] “med_post_trial_z” [1] “P_stop_trial_change” [1] “P_stop_trial_change_z_stop” [1] “trial_n_s” [1] “conditionFailedStop” [1] “condition” [1] “post_pre_rt_change_z_stop” [1] “post_pre_rt_change”

```
data_unscaled[[13]] <- "Fixed effects & (1) & (2) & (3)\\\\ "
data_unscaled[[37]]<-"\\multicolumn{4}{r}{\\textit{Note:} Random effects of Post-Pre RT Change and P(St
```

```
cat(data_unscaled,sep = "\n")
```

% Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com % Date and time: Wed, Apr 26, 2023 - 14:11:55

Table 3: asis Markdown

	Dependent variable:		
	Median Activity 4-10 s Post-Stop Signal		
Fixed effects	(1)	(2)	(3)
Standardized Trial Number	0.016	−0.217	−0.217
	(0.018)	(0.039)	(0.039)
Stop Failure	−0.432	−0.443	−0.437
	(0.025)	(0.025)	(0.025)
Post-Pre RT Change	−0.208		−0.229
	(0.084)		(0.084)
P(Stop Trial) Change		38.423	38.138
		(5.331)	(5.487)
Constant	0.187	−0.354	−0.345
	(0.019)	(0.078)	(0.079)
Observations	6,578	6,578	6,578
Log Likelihood	−9,392.307	−9,372.224	−9,365.962
Akaike Inf. Crit.	18,806.610	18,766.450	18,755.920
Bayesian Inf. Crit.	18,881.320	18,841.150	18,837.420

Note: Random effects of Post-Pre RT Change and P(Stop Trial) Change not shown