library(data.table)  
main\_dir = "/Users/victorpokorny/Library/CloudStorage/GoogleDrive-vpokorny123@gmail.com/My Drive/CAPR Ebbinghaus and Mooney/"  
source(paste0(main\_dir,'R\_scripts/funcs.R')) # big group of functions  
load(file=paste0(main\_dir,"RData/cleaned.RData")) #read in the data  
#subset to only CHR  
main\_df<-main\_df[main\_df$phenotype\_final=='chr',]

1. Does atypical perceptual processing track with reduced cognitive and social functioning?

#context sensitivity and cognition  
#let's look at bivariate associations first  
perception\_variables = c('context\_sensitivity\_all\_trials')  
cognition\_variables = c('bacs\_total', 'wrat\_standardscore','hvlt\_total\_score')  
p\_vals = NULL  
combo\_names = NULL  
for (j in perception\_variables){  
 for (jj in cognition\_variables){  
 res = cor.test(main\_df[[j]], main\_df[[jj]])  
 combo\_name = paste(j,jj)  
 combo\_names = rbind(combo\_names,combo\_name)  
 print(combo\_name)  
 print(pub\_ready\_stats(res))  
 p\_val = res$p.value  
 p\_vals = rbind(p\_vals,p\_val)  
 }  
}

## [1] "context\_sensitivity\_all\_trials bacs\_total"  
## [1] "r(222)=0.14, p=0.036"  
## [1] "context\_sensitivity\_all\_trials wrat\_standardscore"  
## [1] "r(220)=0.05, p=0.491"  
## [1] "context\_sensitivity\_all\_trials hvlt\_total\_score"  
## [1] "r(244)=0.09, p=0.163"

cbind(unname(combo\_names), round(p.adjust(p\_vals, 'fdr'),3))

## [,1] [,2]   
## [1,] "context\_sensitivity\_all\_trials bacs\_total" "0.107"  
## [2,] "context\_sensitivity\_all\_trials wrat\_standardscore" "0.491"  
## [3,] "context\_sensitivity\_all\_trials hvlt\_total\_score" "0.244"

#then multivariate prediction  
pub\_ready\_stats(lm(context\_sensitivity ~ wrat\_standardscore + bacs\_total + hvlt\_total\_score, main\_df))

## See details in:

## Carlos Cinelli and Chad Hazlett (2020). Making Sense of Sensitivity: Extending Omitted Variable Bias. Journal of the Royal Statistical Society, Series B (Statistical Methodology).

## [,1] [,2]   
## [1,] "(Intercept)" "b=63.124, t(186)=3.99, p<.001, partial r^2 = 0.079"   
## [2,] "wrat\_standardscore" "b=-0.124, t(186)=-0.91, p=0.36, partial r^2 = 0.004"  
## [3,] "bacs\_total" "b=0.314, t(186)=2.05, p=0.04, partial r^2 = 0.022"   
## [4,] "hvlt\_total\_score" "b=0.412, t(186)=0.92, p=0.36, partial r^2 = 0.005"

#context sensitivity and social/role  
cognition\_variables = c('gfs\_current', 'gfr\_current','sps\_total')  
p\_vals = NULL  
combo\_names = NULL  
for (j in perception\_variables){  
 for (jj in cognition\_variables){  
 res = cor.test(main\_df[[j]], main\_df[[jj]])  
 combo\_name = paste(j,jj)  
 combo\_names = rbind(combo\_names,combo\_name)  
 print(combo\_name)  
 print(pub\_ready\_stats(res))  
 p\_val = res$p.value  
 p\_vals = rbind(p\_vals,p\_val)  
 }  
}

## [1] "context\_sensitivity\_all\_trials gfs\_current"  
## [1] "r(257)=0.03, p=0.584"  
## [1] "context\_sensitivity\_all\_trials gfr\_current"  
## [1] "r(257)=0.12, p=0.049"  
## [1] "context\_sensitivity\_all\_trials sps\_total"  
## [1] "r(247)=-0.07, p=0.298"

cbind(unname(combo\_names), round(p.adjust(p\_vals, 'fdr'),3))

## [,1] [,2]   
## [1,] "context\_sensitivity\_all\_trials gfs\_current" "0.584"  
## [2,] "context\_sensitivity\_all\_trials gfr\_current" "0.147"  
## [3,] "context\_sensitivity\_all\_trials sps\_total" "0.447"

#now mooney faces bivariate associations  
mooney\_variables = c('inverted\_faces\_reported')  
cognition\_variables = c('bacs\_total', 'wrat\_standardscore','hvlt\_total\_score')  
p\_vals = NULL  
combo\_names = NULL  
for (j in mooney\_variables){  
 for (jj in cognition\_variables){  
 res = cor.test(main\_df[[j]], main\_df[[jj]])  
 combo\_name = paste(j,jj)  
 combo\_names = rbind(combo\_names,combo\_name)  
 print(combo\_name)  
 print(pub\_ready\_stats(res))  
 p\_val = res$p.value  
 p\_vals = rbind(p\_vals,p\_val)  
 }  
}

## [1] "inverted\_faces\_reported bacs\_total"  
## [1] "r(225)=-0.08, p=0.254"  
## [1] "inverted\_faces\_reported wrat\_standardscore"  
## [1] "r(228)=0.08, p=0.24"  
## [1] "inverted\_faces\_reported hvlt\_total\_score"  
## [1] "r(249)=-0.01, p=0.937"

cbind(unname(combo\_names), round(p.adjust(p\_vals, 'fdr'),3))

## [,1] [,2]   
## [1,] "inverted\_faces\_reported bacs\_total" "0.381"  
## [2,] "inverted\_faces\_reported wrat\_standardscore" "0.381"  
## [3,] "inverted\_faces\_reported hvlt\_total\_score" "0.937"

cognition\_variables = c('gfs\_current', 'gfr\_current','sps\_total')  
p\_vals = NULL  
combo\_names = NULL  
for (j in mooney\_variables){  
 for (jj in cognition\_variables){  
 res = cor.test(main\_df[[j]], main\_df[[jj]])  
 combo\_name = paste(j,jj)  
 combo\_names = rbind(combo\_names,combo\_name)  
 print(combo\_name)  
 print(pub\_ready\_stats(res))  
 p\_val = res$p.value  
 p\_vals = rbind(p\_vals,p\_val)  
 }  
}

## [1] "inverted\_faces\_reported gfs\_current"  
## [1] "r(262)=-0.12, p=0.058"  
## [1] "inverted\_faces\_reported gfr\_current"  
## [1] "r(262)=-0.18, p=0.003"  
## [1] "inverted\_faces\_reported sps\_total"  
## [1] "r(250)=0.12, p=0.06"

cbind(unname(combo\_names), round(p.adjust(p\_vals, 'fdr'),3))

## [,1] [,2]   
## [1,] "inverted\_faces\_reported gfs\_current" "0.06"   
## [2,] "inverted\_faces\_reported gfr\_current" "0.009"  
## [3,] "inverted\_faces\_reported sps\_total" "0.06"

#multiple regression  
pub\_ready\_stats(lm(inverted\_faces\_reported ~ gfs\_current+gfr\_current+sps\_total, main\_df))

## [,1] [,2]   
## [1,] "(Intercept)" "b=22.874, t(246)=5.75, p<.001, partial r^2 = 0.118"   
## [2,] "gfs\_current" "b=-0.197, t(246)=-0.4, p=0.69, partial r^2 = 0.001"   
## [3,] "gfr\_current" "b=-0.889, t(246)=-2.52, p=0.01, partial r^2 = 0.025"  
## [4,] "sps\_total" "b=0.043, t(246)=1.27, p=0.2, partial r^2 = 0.007"