hw\_06

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#rescale agegroup  
study2 = study2 %>%  
 select(-X, -X.1, -X.2, -X.3, -X.4, -X.5, -X.6, -X.7)  
  
colnames(study2) = c("DV", "condition", "agegroup", "age", "sex")  
  
 study2 <- study2%>%  
 mutate(agegroup = ifelse(study2$agegroup == 1, .5, -.5)) %>%  
 mutate(DV = as.factor(DV))  
  
colnames(s2) = c("DV", "condition", "agegroup", "age", "sex")  
  
s2 <- s2%>%  
 mutate(agegroup = ifelse(s2$agegroup == 1, .5, -.5))

#a. Reproduce Study 2’s logistic regression analyses (include regression output (beta, SE, etc.) and all Wald statistics)   
  
fitstudy2 = glm(DV ~ agegroup \* condition, data = study2, family = binomial)  
  
summary(fitstudy2)

##   
## Call:  
## glm(formula = DV ~ agegroup \* condition, family = binomial, data = study2)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -1.3153 -0.9282 -0.7352 1.0455 1.6973   
##   
## Coefficients:  
## Estimate Std. Error z value Pr(>|z|)   
## (Intercept) -0.6129 0.1617 -3.790 0.000151 \*\*\*  
## agegroup -0.3741 0.3234 -1.157 0.247404   
## condition -0.9252 0.3234 -2.860 0.004232 \*\*   
## agegroup:condition 1.1267 0.6469 1.742 0.081551 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## (Dispersion parameter for binomial family taken to be 1)  
##   
## Null deviance: 247.51 on 190 degrees of freedom  
## Residual deviance: 235.48 on 187 degrees of freedom  
## (29 observations deleted due to missingness)  
## AIC: 243.48  
##   
## Number of Fisher Scoring iterations: 4

Anova(fitstudy2, type = 3, test.statistic = "Wald")

## Analysis of Deviance Table (Type III tests)  
##   
## Response: DV  
## Df Chisq Pr(>Chisq)   
## (Intercept) 1 14.3612 0.0001509 \*\*\*  
## agegroup 1 1.3379 0.2474038   
## condition 1 8.1813 0.0042325 \*\*   
## agegroup:condition 1 3.0337 0.0815513 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

#Reproduce Study S2’s logistic regression analyses (include regression output (beta, SE, etc.) and all Wald statistics) [6]  
  
  
fits2 = glm(DV ~ agegroup \* condition, data = s2, family = binomial)  
  
summary(fits2)

##   
## Call:  
## glm(formula = DV ~ agegroup \* condition, family = binomial, data = s2)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -1.2388 -0.8369 -0.6476 1.1173 2.5674   
##   
## Coefficients:  
## Estimate Std. Error z value Pr(>|z|)   
## (Intercept) -1.3598 0.3028 -4.492 7.07e-06 \*\*\*  
## agegroup 0.3953 0.6055 0.653 0.513818   
## condition -1.4075 0.6055 -2.324 0.020100 \*   
## agegroup:condition 3.9874 1.2110 3.293 0.000992 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## (Dispersion parameter for binomial family taken to be 1)  
##   
## Null deviance: 157.19 on 135 degrees of freedom  
## Residual deviance: 136.53 on 132 degrees of freedom  
## AIC: 144.53  
##   
## Number of Fisher Scoring iterations: 5

Anova(fits2, type = 3, test.statistic = "Wald")

## Analysis of Deviance Table (Type III tests)  
##   
## Response: DV  
## Df Chisq Pr(>Chisq)   
## (Intercept) 1 20.1743 7.07e-06 \*\*\*  
## agegroup 1 0.4263 0.5138178   
## condition 1 5.4032 0.0201001 \*   
## agegroup:condition 1 10.8417 0.0009924 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1