hw\_04

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# load libraries  
library(tidyverse)

## ── Attaching packages ─────────────────────────────────────── tidyverse 1.2.1 ──

## ✔ ggplot2 3.1.0 ✔ purrr 0.2.5  
## ✔ tibble 1.4.2 ✔ dplyr 0.7.7  
## ✔ tidyr 0.8.2 ✔ stringr 1.3.1  
## ✔ readr 1.1.1 ✔ forcats 0.3.0

## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

library(Hmisc)

## Loading required package: lattice

## Loading required package: survival

## Loading required package: Formula

##   
## Attaching package: 'Hmisc'

## The following objects are masked from 'package:dplyr':  
##   
## src, summarize

## The following objects are masked from 'package:base':  
##   
## format.pval, units

library(afex)

## Loading required package: lme4

## Loading required package: Matrix

##   
## Attaching package: 'Matrix'

## The following object is masked from 'package:tidyr':  
##   
## expand

## \*\*\*\*\*\*\*\*\*\*\*\*  
## Welcome to afex. For support visit: http://afex.singmann.science/

## - Functions for ANOVAs: aov\_car(), aov\_ez(), and aov\_4()  
## - Methods for calculating p-values with mixed(): 'KR', 'S', 'LRT', and 'PB'  
## - 'afex\_aov' and 'mixed' objects can be passed to emmeans() for follow-up tests  
## - NEWS: library('emmeans') now needs to be called explicitly!  
## - Get and set global package options with: afex\_options()  
## - Set orthogonal sum-to-zero contrasts globally: set\_sum\_contrasts()  
## - For example analyses see: browseVignettes("afex")  
## \*\*\*\*\*\*\*\*\*\*\*\*

##   
## Attaching package: 'afex'

## The following object is masked from 'package:lme4':  
##   
## lmer

library(tidyr)  
library(effsize)  
  
taste <- spss.get("ST.sav", use.value.labels = TRUE)

#check uniqueness  
length(taste$subnum)

## [1] 60

length(unique(taste$subnum))

## [1] 60

#gather  
tastebite <- gather(data = taste,  
 key = foodtype,  
 value = bites,  
 clean.bites.tot, contam.bites.tot)  
  
consumption = aov\_ez("subnum", "bites", tastebite,  
 between = c("age.group", "gender"),  
 within = c("foodtype"),  
 anova\_table = list(es ="pes"))

## Contrasts set to contr.sum for the following variables: age.group, gender

print(consumption)

## Anova Table (Type 3 tests)  
##   
## Response: bites  
## Effect df MSE F pes p.value  
## 1 age.group 2, 54 42.25 1.21 .04 .31  
## 2 gender 1, 54 42.25 0.00 <.0001 .96  
## 3 age.group:gender 2, 54 42.25 0.20 .007 .82  
## 4 foodtype 1, 54 21.37 11.27 \*\* .17 .001  
## 5 age.group:foodtype 2, 54 21.37 4.86 \* .15 .01  
## 6 gender:foodtype 1, 54 21.37 0.48 .009 .49  
## 7 age.group:gender:foodtype 2, 54 21.37 1.31 .05 .28  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '+' 0.1 ' ' 1

tasteyummy <- gather(data = tastebite,  
 key = taste,  
 value = preference,  
 yummy.clean, yummy.contam)   
  
yummy = aov\_ez("subnum", "preference", tasteyummy,  
 between = c("age.group", "gender"),  
 within = c("taste"),  
 anova\_table = list(es ="pes"))

## Warning: More than one observation per cell, aggregating the data using  
## mean (i.e, fun\_aggregate = mean)!

## Contrasts set to contr.sum for the following variables: age.group, gender

print(yummy)

## Anova Table (Type 3 tests)  
##   
## Response: preference  
## Effect df MSE F pes p.value  
## 1 age.group 2, 54 1.59 0.31 .01 .74  
## 2 gender 1, 54 1.59 0.00 <.0001 .98  
## 3 age.group:gender 2, 54 1.59 1.00 .04 .38  
## 4 taste 1, 54 1.70 24.34 \*\*\* .31 <.0001  
## 5 age.group:taste 2, 54 1.70 12.50 \*\*\* .32 <.0001  
## 6 gender:taste 1, 54 1.70 0.21 .004 .64  
## 7 age.group:gender:taste 2, 54 1.70 5.55 \*\* .17 .006  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '+' 0.1 ' ' 1