Psych 6136: Assignment 1

Readings
- DDAR, Ch. 1 – Ch 2
- Agresti, Ch. 1

Supplements

A (very) short introduction to R, http://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf covers the basics of installing R and R Studio, the R Studio window layout, and an overview of R commands, data structures and functions. If you haven't already installed R and R Studio, do so now, and work through some of the examples.

Check out the cheat sheet for R available at R Studio: https://www.rstudio.com/resources/cheatsheets/ Initially, you'll want the one on the R Studio IDE, but there are many other useful ones. Print a set and get them laminated!

McNamara & Horton (2017), "Wrangling categorical data in R", https://doi.org/10.7287/peerj.preprints.3163v2 describe some aspects of data import and tidying specific to categorical data.

The vcdExtra vignette, Creating and manipulating frequency tables covers a lot of the material from DDAR, Ch 2.

Exercises: Workflow

For simple exercises using R, the easiest way to work is to prepare an **R script** with your commands in the R Studio editor panel, save the file, and then use File -> Compile Report (Ctrl+Shift K) to run the script, producing output in HTML, PDF or MS Word format. Here is an RScript-template.R you can use; it produces this output: RScript-template.html

This uses the knitr and rmarkdown packages, which allow you to include normal text in the script, in specially formatted R comments. (See: *Render an R script to a report*, https://bookdown.org/yihui/rmarkdown-cookbook/spin.html for details). It is useful to start your script with a header such as the following:

```
#' ---
#' title: "Assignment 1"
#' author: "John Smith"
#' date: "Jan 16, 2015"
#' ---
```

Inside your script, you can use other such markdown comments to produce section headers (`#' #`, `#' ##`, `#' ###` for heading levels 1, 2, 3), such as

```
#' ## Problem 1
#' Here you can add comments that are treated as normal paragraph
#' text to describe what you did or what you found
```

You can also use an **R markdown document** (.Rmd) file, which is more suitable if there is more text, explanation than code. This is a plain text file using markdown formatting directly. Here is a template you can use: RMarkdown-template.Rmd. In this format, R code appears in chunks, delimited by backticks: ``` code ``` such as:

```
```{r plot-mpg, fig.height=5, fig.width=5}
plot(mpg ~ disp, data=mtcars,
     pch=16,
     xlab="Engine displacement",
     ylab="Gas mileage (mpg)")
```
```

There is a +C button in the tool bar to insert a code chunk. Use the knit button (Ctrl-Shift-K) to knit your document.

Problems

These problems don't involve that much R code, but this might be a good opportunity to learn to use .Rmd format.

1. DDAR, Ex 1.1(a), Ex 1.2
2. DDAR, Ex 1.2
3. DDAR: Ex 2.2
4. DDAR: Ex 2.4