Homework\_4

Grant Erlandson

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library(tidyr)  
library(readr)  
library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library(broom)  
library(purrr)  
library(ggplot2)  
library(ggfortify)  
library(ggthemes)  
library(ggmap)  
library(stringr)  
library(forcats)  
library(scales)

##   
## Attaching package: 'scales'

## The following object is masked from 'package:purrr':  
##   
## discard

## The following object is masked from 'package:readr':  
##   
## col\_factor

list.files("../Data/")

## [1] "homicide-data.csv"

homicides <- read.csv("../Data/homicide-data.csv")

homicides2 <- homicides %>%   
 unite(city\_name, city, state, sep = ", ")

unsolved <- homicides2 %>%   
 select(city\_name, disposition) %>%   
 mutate(solved = disposition == "Closed by arrest") %>%   
 group\_by(city\_name) %>%   
 summarize(n\_homicides = n(), n\_unsolved = sum(!solved))

baltimore <- unsolved %>%   
 filter(city\_name == "Baltimore, MD")  
baltimore\_prop <- prop.test(x = baltimore$n\_unsolved,  
 n = baltimore$n\_homicides)  
tidy(baltimore\_prop)

## # A tibble: 1 x 8  
## estimate statistic p.value parameter conf.low conf.high method  
## <dbl> <dbl> <dbl> <int> <dbl> <dbl> <chr>   
## 1 0.646 239. 6.46e-54 1 0.628 0.663 1-sam~  
## # ... with 1 more variable: alternative <chr>

unsolved <- unsolved %>%   
 mutate(test = map2(n\_unsolved, n\_homicides, ~ prop.test(.x, n = .y))) %>%   
 mutate(test = map(test, ~ tidy(.x))) %>%   
 unnest(.drop = TRUE) %>%   
 select(city\_name, estimate, conf.low, conf.high)

## Warning in prop.test(.x, n = .y): Chi-squared approximation may be  
## incorrect

unsolved\_plot <- unsolved %>%  
 mutate(city = (fct\_reorder(.f = city\_name, .x = estimate, .desc = FALSE)))

ggplot(unsolved\_plot, aes(x = estimate, y = city))+  
 geom\_point(color = "White")+  
 geom\_errorbarh(aes(xmin = conf.low, xmax = conf.high), height = 0, color = "White")+  
 scale\_x\_continuous(name = "Percent of homicides that are unsolved", labels = percent)+  
 labs(y = "")+  
 theme\_dark()

