Errata for Quantitative Social Science: An Introduction (Princeton University Press, 2017)

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5/29/2017

Chapter 4

Section 4.3.3

- pages 170 – 176. Throughout this section, the `primary2008` variable should be labeled as `primary2006` so that it matches with the `social.csv` data file introduced in Chapter 2. For now, we include another version of `social.csv` in this chapter's folder so that users can

Chapter 6

Section 6.2.2

- page 265. The original code for the Monty Hall problem does not return the right answer when the order of doors is changed. This is due to the fact that the `sample()` function behaves differently when an integer is supplied as an input. The correct code that avoids this problem is below:

```
sims <- 1000
doors <- c("goat", "goat", "car")
result.switch <- result.noswitch <- rep(NA, sims)

for (i in 1:sims) {
    ## randomly choose the initial door
    first <- sample(1:3, size = 1)
    result.noswitch[i] <- doors[first]
    remain <- doors[-first] # remaining two doors
    ## Monty chooses one door with a goat
    if (doors[first] == "car") # two goats left
        monty <- sample(1:2, size = 1)
    else # one goat and one car left
        monty <- (1:2)[remain == "goat"]
    result.switch[i] <- remain[-monty]
}

mean(result.noswitch == "car")
```

```
## [1] 0.364
```

```
mean(result.switch == "car")
```

```
## [1] 0.636
```

Section 6.3.3.

- page 284, second paragraph. Change "$\{HTHTHT\}$" to "$\{HTHTH\}$".

Section 6.4.2.

- page 304, first paragraph. Change "we expect a binomial random variable to approximate the normal distribution as the sample size, or the number of balls in this case, increases." to "we expect the binomial random variable to approximate the normal random variable as the sample size, or the number of lines of pegs in this case, increases. Here, the sample size refers to the number of lines of pegs, not the number of balls. Increasing the latter reduces the Monte Carlo error."
- page 304, equation (6.42). The second term is missing X_i, which is highlighted in the correct equation below:

$$\mathbb{E}(\overline{X}_n) = \mathbb{E}\left(\frac{1}{n}\sum_{i=1}^{n} X_i\right) = \frac{1}{n}\sum_{i=1}^{n}\mathbb{E}(X_i) = \mathbb{E}(X)$$

- pages 305 - 306. For the reason stated above, it is more instructive to increase the size parameter in Binomial distribution (which improves the CLT approximation) rather than to increase the number of Monte Carlo simulations (which reduces the Monte Carlo error).

Chapter 7

Section 7.1.3

- page 327, last paragraph. Change "such that $P(Z > \alpha/2) = 1 - P(Z \leq \alpha/2) = 1 - \alpha/2$" to "such that $P(Z > z_{\alpha/2}) = 1 - P(Z \leq z_{\alpha/2}) = 1 - \alpha/2$"
- page 329, last paragraph. Change "Consider the probability that $(1 - \alpha/2) \times 100\%$ confidence interval" to "Consider the probability that $(1 - \alpha) \times 100\%$ confidence interval"
- page 330, Step 3 in the box. Change "Compute the critical value $z_{\alpha/2}$ as the $(1 - \alpha) \times 100$ percentile value" to "Compute the critical value $z_{\alpha/2}$ as the $(1 - \alpha/2) \times 100$ percentile value"

Section 7.2.3

- page 354, first paragraph. The first sentence should read: "We can confirm this result using the current example by checking that 0.5 is contained in the 99% confidence interval (we fail to reject the null hypothesis when $\alpha = 0.01$) but not in the 95% confidence interval (we reject the null when $\alpha = 0.5$)."

Acknowledgements

Thanks to Jeff Arnold, Joel Gautschi, Soyoung Lee, and Rocio Titiunik for pointing out the errors.