Inference Assignment 1b

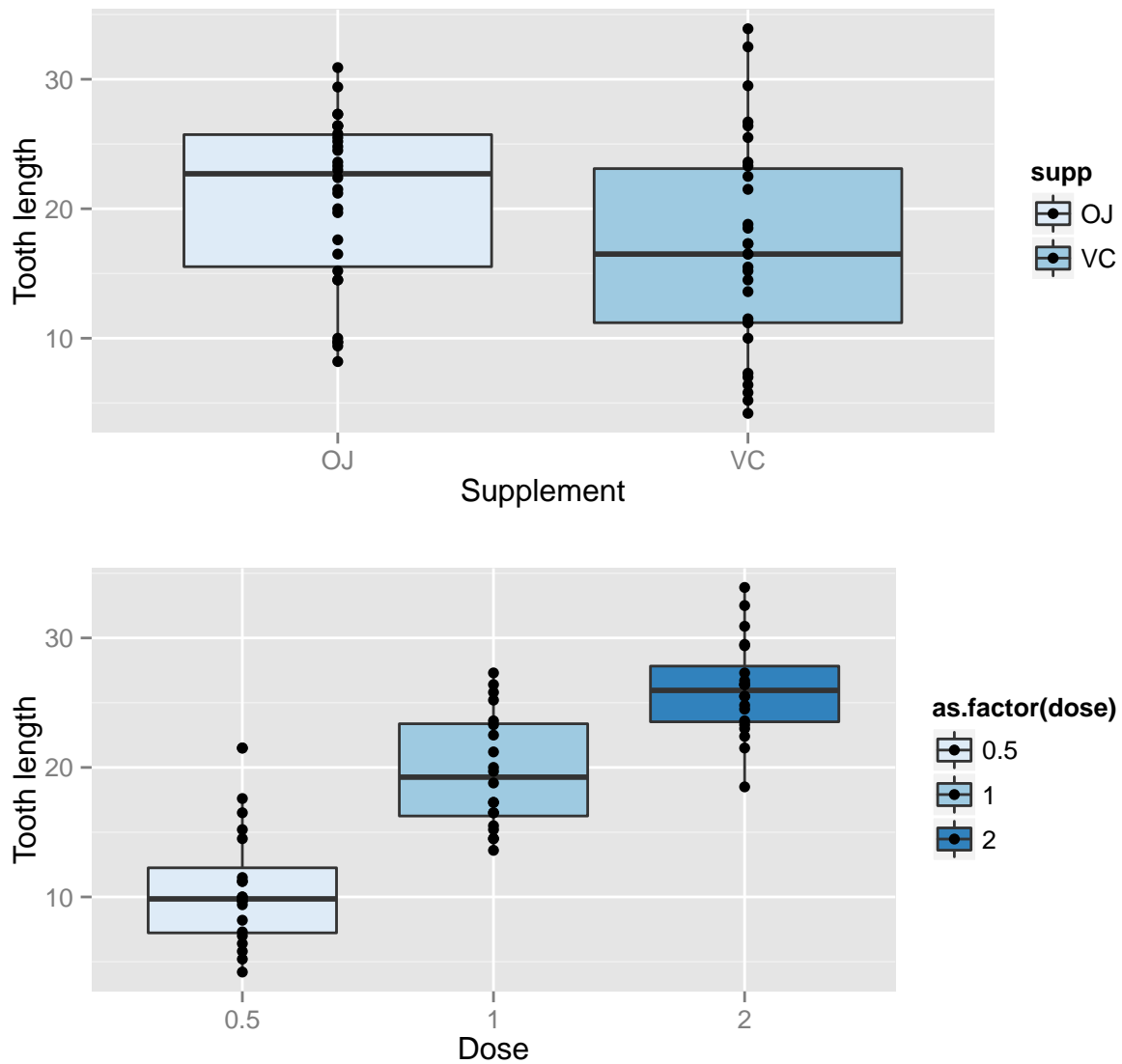*Moritz Schneider*

Wednesday, December 17, 2014

Assignment

Now in the second portion of the class, we're going to analyze the ToothGrowth data in the R datasets package.

1. Load the ToothGrowth data and perform some basic exploratory data analyses

2. Provide a basic summary of the data.

3. Use confidence intervals and/or hypothesis tests to compare tooth growth by supp and dose. (Only use

4. State your conclusions and the assumptions needed for your conclusions.

Part 1

For exploratory data analysis, let's take look at some box plots:

In the first plot we can see, that the supplement type, OJ and VC, has an effect on tooth length as OJ supplement seems to lead to inceased tooth length. A pattern arising from different dose levels is very obvious in the second boxplot, where the boxes resolve tooth length by dose levels. Higher doses obviously lead to increased tooth length.

Part 2

In order to summarize the data in a meaningful way we have to identify the subgroups of the data. There are two types of supplements and each has 10 samples for three different doses. This makes for a total of 6 groups, for which the mean and standard deviations can be found in the following table:

	VC	OJ
0.5	7.98 +- 2.75	13.23 +- 4.46
1	16.77 +- 2.52	22.7 +- 3.91
2	26.14 +- 4.8	26.06 +- 2.66