

Analyzing the Mock Jury Data

Stat 217: Worksheet 1

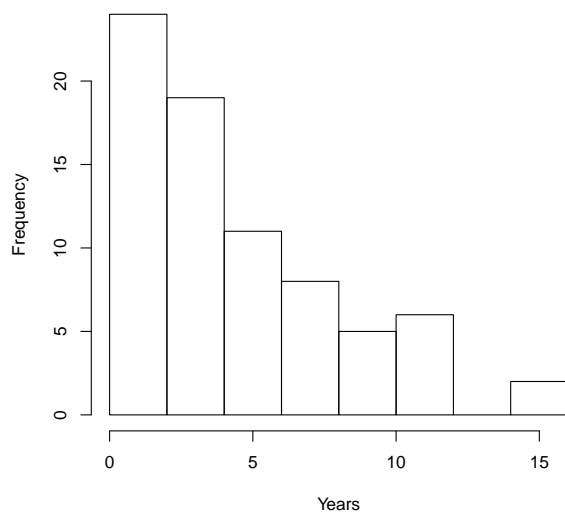
January 14, 2015

Let's look at the data collected from a study in 1989 that investigated whether there was a relationship between perceived physical attractiveness and the sentence length that male jurors gave to female defendants.

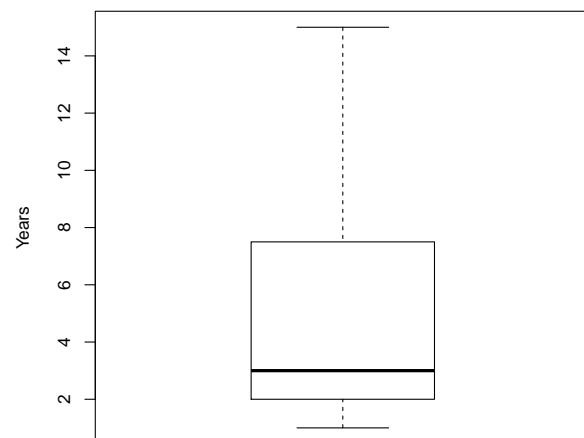
	Attr	Crime	Years	Serious	independent	sincere
1	Unattractive	Burglary	1	3	6	5
2	Unattractive	Burglary	4	8	2	9
3	Unattractive	Burglary	3	5	9	7
4	Unattractive	Burglary	2	2	7	1
5	Unattractive	Burglary	8	5	5	1
6	Unattractive	Burglary	8	9	2	8
...
70	Average	Swindle	3	2	9	9
71	Average	Swindle	2	1	8	8
72	Average	Swindle	7	4	9	1
73	Average	Swindle	6	3	5	2
74	Average	Swindle	12	9	9	1
75	Average	Swindle	8	8	1	5

To begin, let's look at the distribution of sentence lengths. On the left is a histogram where taller bars indicate higher frequencies of sentence lengths and on the right is a boxplot.

Histogram of Sentence Lengths



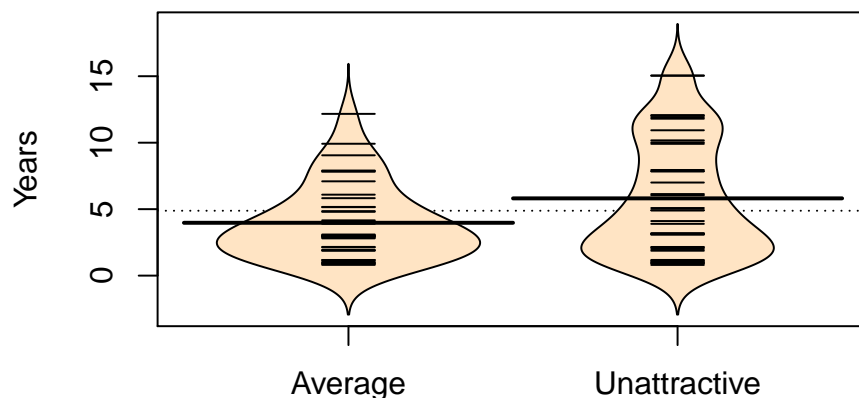
Boxplot of Sentence Lengths



1. Recall the five number summary from Stat 216. Label on the boxplot where each summary measure is located.

2. According to the histogram, what are the most common sentence lengths?
- (a) > 15 years
 - (b) 5 years
 - (c) 0-2 years
 - (d) 10-15 years

Originally, we wanted to know if there was a difference in sentence length between Average looking and Unattractive people. We can make a beanplot to compare the two groups.



3. In a beanplot, the width describes frequency of observations. So, in the average group, are there more sentences of 2 years in length or 10 years? Why?
4. The short black bars in each group denote sentence length assigned to individual defendants. In which group is there a greater range in the data?
5. The long, black bars in each group denote the average sentence length of the defendants that group. So which group gets longer sentences on average?
6. Based on this information, do you think that the true mean sentence length for unattractive women is longer than the true mean sentence length for average women? Why or why not?

On Friday, we will use a test to quantify how much evidence there is to conclude that the true mean sentence lengths between unattractive and average women are different.