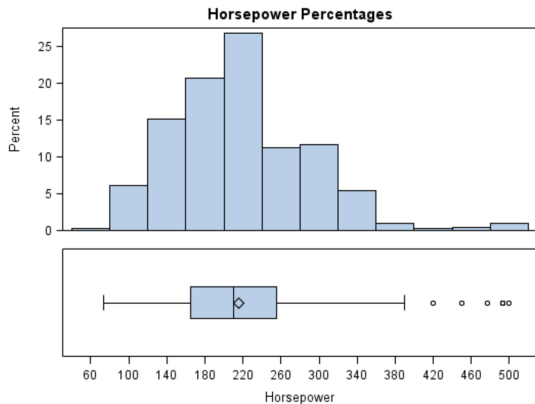# Today: 1-D Continuous

Sam Ventura

36-315

Today: Boxplots, Histograms, and Density Estimates
Conditional Distributions for Continuous Variables
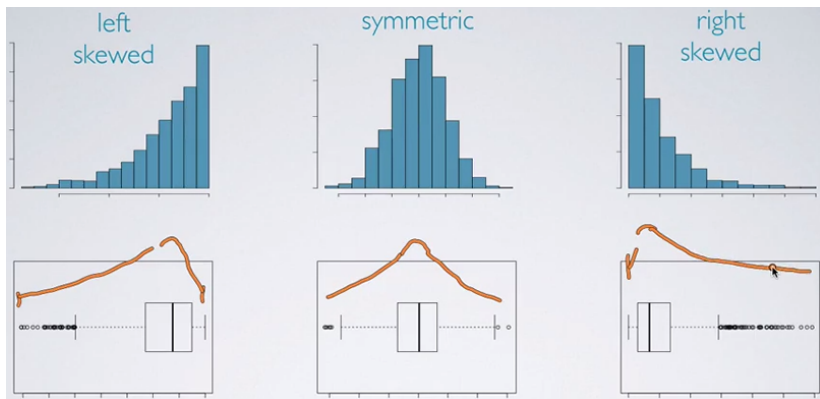Tartan Data Science Cup – Episode II

Department of Statistics
Carnegie Mellon University

September 26, 2016

Box Plots vs. Histograms: Advantages and Disadvantages

Horsepower Percentages

Determining Skew Visually

How Can We Improve Boxplots?

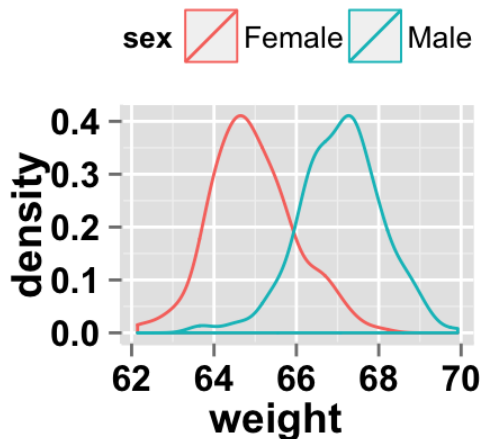Standard Boxplot:

Improved Boxplot?

Continuous Densities

Theoretical:

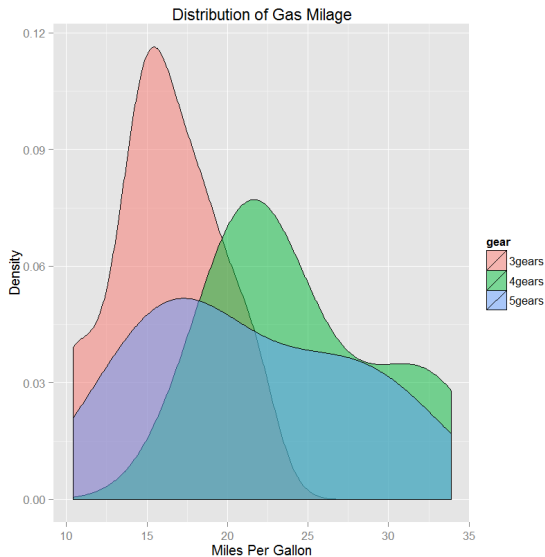What if we don't know the underlying distribuion?

How can we estimate the empirical distribution?

1-D Kernel Density Estimation
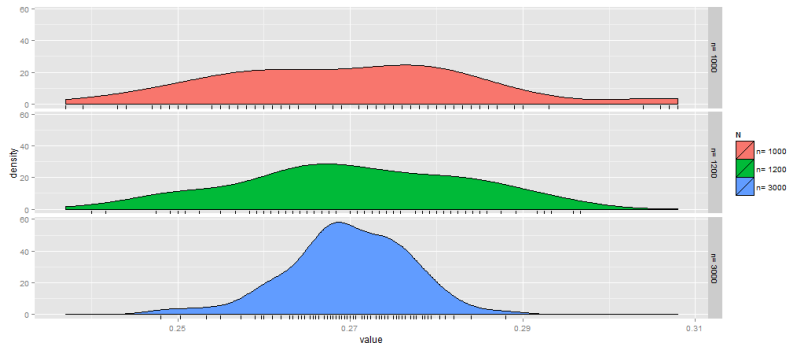
Density Estimates and Conditional Distributions

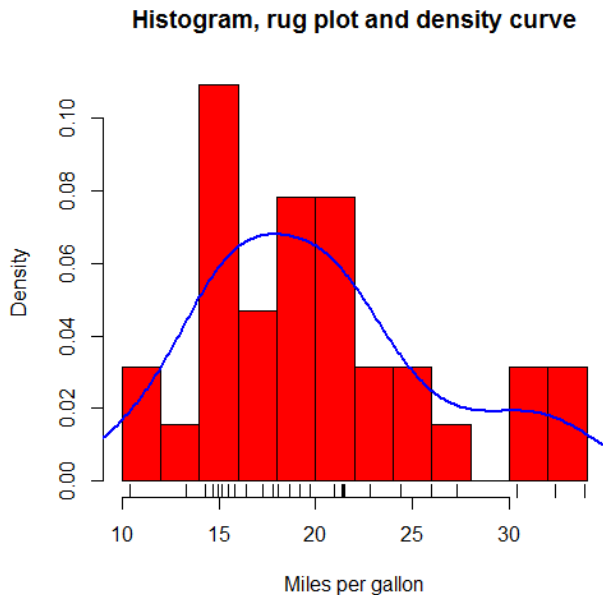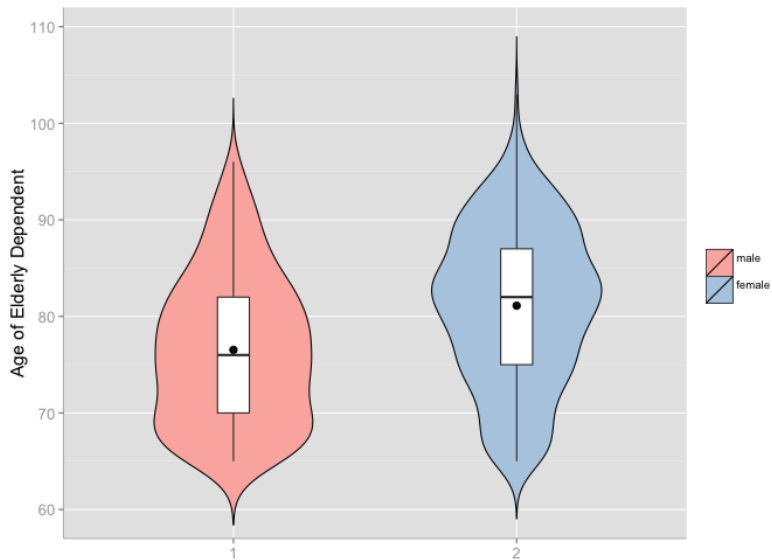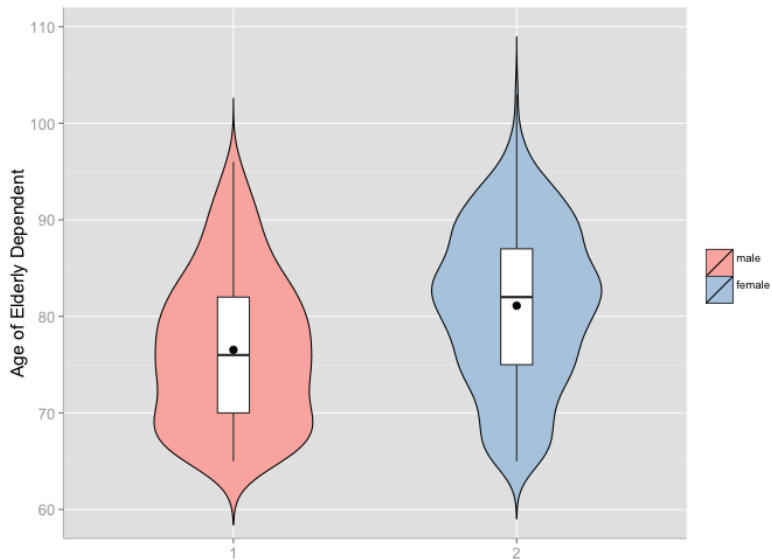# Density Estimates and Conditional Distributions

Density Estimates with "Rugs"
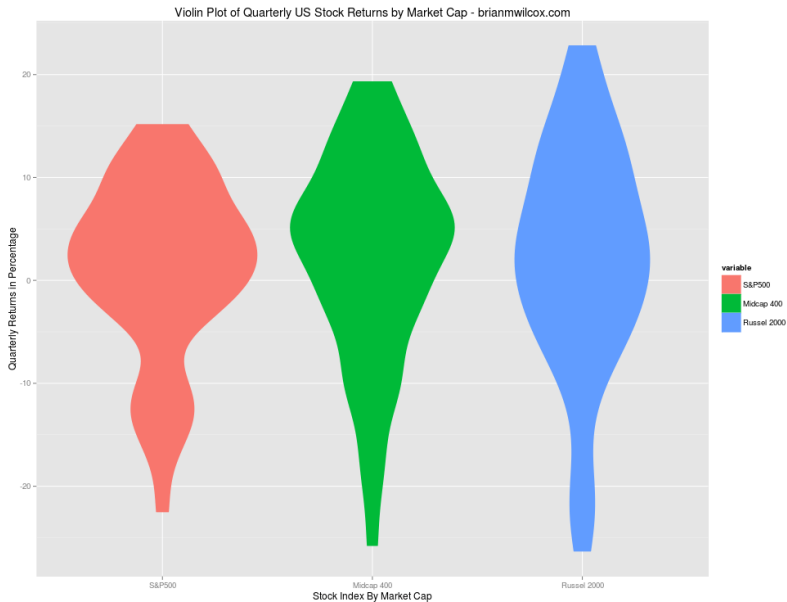
Histogram with Density Curve and Rug

Histogram, rug plot and density curve

Violin Plots vs. Boxplots

Issues with Violin Plots?

Issues with Violin Plots?

Violin Plot of Quarterly US Stock Returns by Market Cap - brianmwilcox.com

Improved Violin Plot?

Violin plot