

Statistics/Data Analysis

- Statistics is descriptive or confirmatory
 - acting like a judge with what's available
 - testing specific theories
 - not suitable for observational or large datasets
- Exploratory data analysis is open-ended
 - acting like a detective
 - generating new theories

From models to graphics (1)

- t test (`t.test`)
- Binomial test (`binom.test`, `prop.test`)
- Chisq test (`chisq.test`)
- Nonparametric tests (`wilcox.test`)
- Correlation (`cor`, `cor.test`)
- Regression, anova and linear models (`lm`, `anova`)

From models to graphics (2)

- `glm` (including loglinear models, logistic regression)
- Density estimation (`density`, `ks`, `KernSmooth` ...)
- Kolmogorov Smirnov (`ks.test`)
- Outliers (`extremevalues`, `mvoutlier`, `rainbow` ...)
- Bootstrapping (`boot`)
- Survival analysis (`survival`, `party`...)
- Cluster analysis (`hclust`, `agnes`, ...)
- ...