Deck 8

* Transforming data helps to
  + Stabilize variance (log transformations)
  + Linearizing the relationship
    - Original data is nonlinear
    - Square root improves linearity a bit
    - Log transformation linearizes the best
      * It does make it less intuitive to interpret later and compare the data
      * Hard to back transform to the original scale
  + Polynomial regression
    - Raise the predictor variable to a constant variable
    - The power value has to be predetermined
      * Not optimized from data
  + Interaction terms
    - Can be synergistic or inhibiting
    - Have to add or subtract the predictor variables’ coefficients
  + non-normal errors
    - models of count data won’t have normally distributed errors
      * generalized linear models can accommodate some types of non-normal errors
  + non-independent observations/errors
    - results in data with lower information storage
* constellation of models
  + lots of name collisions
  + group 1: linear models (most of this class)
    - 4 assumptions
      * Independent observations
      * Constant variance
      * Fixed x
      * Normality
    - Requires our models be linear in the parameters
    - Group 2 models can deal with violations of these assumptions and requirements
  + group 2: extended linear models
  + group 3: random effects