Case study

Growth: The data come from the study reported by Potthoff and Roy in Biometrika (1964). In the study the distance from the center of the pituitary to the maxillary fissure was recorded at ages 8, 10, 12, and 14, for 11 girls and 16 boys.

Scientific question: Is dental growth related to gender?

Analysis:

- Explore the data carefully using graphical tools and descriptive statistics.

- Discuss very carefully the results of your data exploration and its implication for the model building.

- Carry out a model building exercise along the lines discussed in the lectures. Consider in your analysis

    - Models for the mean structure
    - Models for the random effects structure
    - Models for the residual error structure

Conclusion:

- What scientific insight does your final model offer?

- Interpret the final model using the estimated coefficients, graphical tools and confidence intervals.

- Answer the scientific question