Andrew Gordon

Professor Mike Nelson

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Week 9 Reading Questions

1. Bolker states that in the best case scenario the results from the customized likelihood model will agree with the results from a classical statistical model. However, there are some tradeoffs that occur with used the MLE model. For example, MLE must fit parameters on scales that are constrained, while classical models have unconstrained parameters, allowing for smoother curves when parameters change. Secondly, in an MLE model, you must choose your starting parameters and this may cause numerical problems and slower algorithm speeds.
2. General linear modeling assumes that observations are independent and that the spread of data has constant variance. Additionally, the modeling approach assumes that there is no measurement error in the predictor variables and a normal distribution of model residuals.
3. The assumption of normality in a general linear model refers to the variation around the residuals rather than the entire dataset. I believe the general linear model of bill lengths shown in the example is shows a linear model of bill length as a function of body mass and species only. Since these covariates likely have normal distributions, that is why I think the normality assumption can be met in the general linear model