Statistics with Spa  ows

Lecture 18

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And what else?

- Linear mixed models

LMMs

- Linear mixed models

- Combine linear models and variance analysis

Nested data structure

- Repeated mesures
- Offspring in families
- …

LMMs

when factor variable >3 or 5

$$y_{i,j} = b_0 + b_1 x_{i,j} + \alpha_j + \varepsilon_{i,j}$$

LMMs

$$y_{i,j} = b_0 + b_1 x_{i,j} + \alpha_j + \varepsilon_{i,j}$$

Linear model bit that we know

Estimates FIXED intercept, covariates and factors

LMMs

$$y_{i,j} = b_0 + b_1 x_{i,j} + \alpha_j + \varepsilon_{i,j}$$

residual variance

Random factor for a group j (i.e. BirdID)

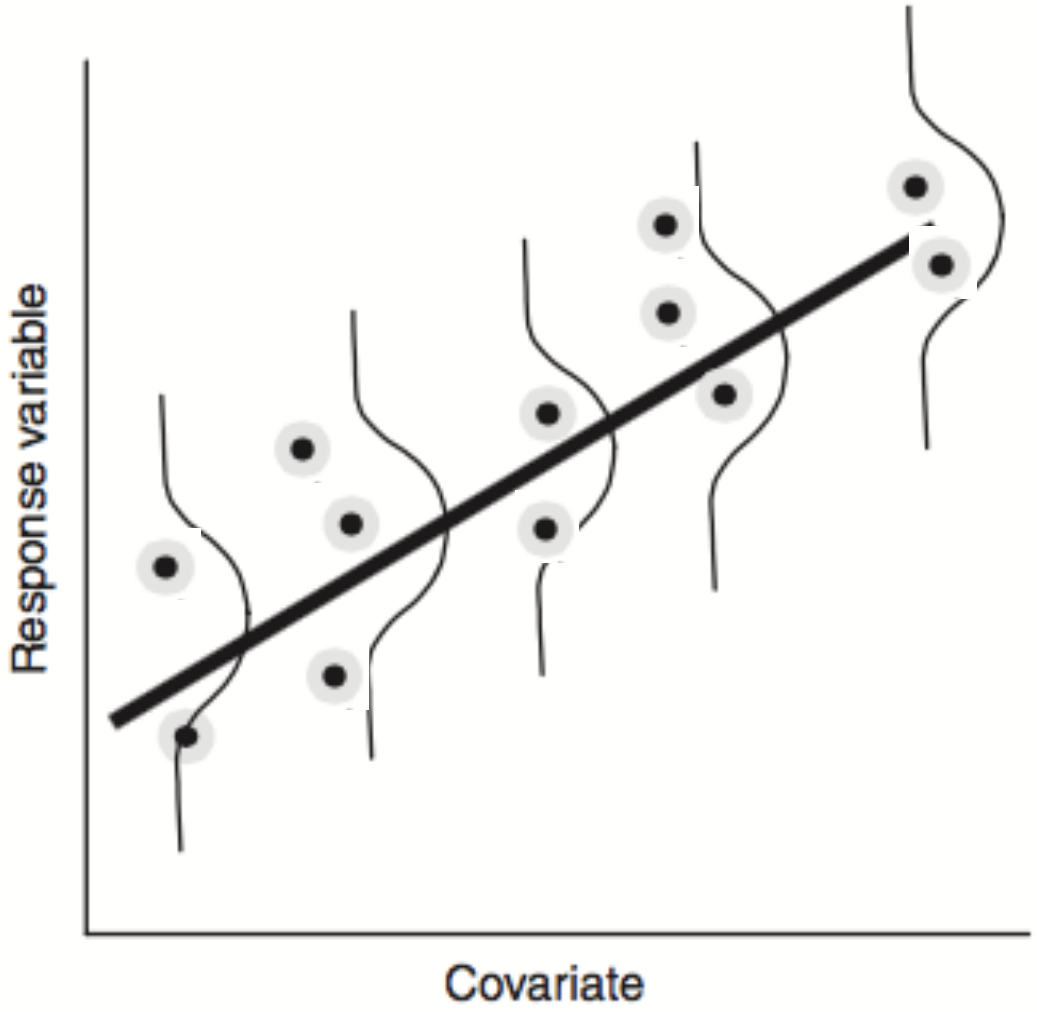
Estimate variance component AMONG BIRDS

LMMs

$$y_{i,j} = b_0 + b_1 x_{i,j} + \alpha_j + \varepsilon_{i,j}$$

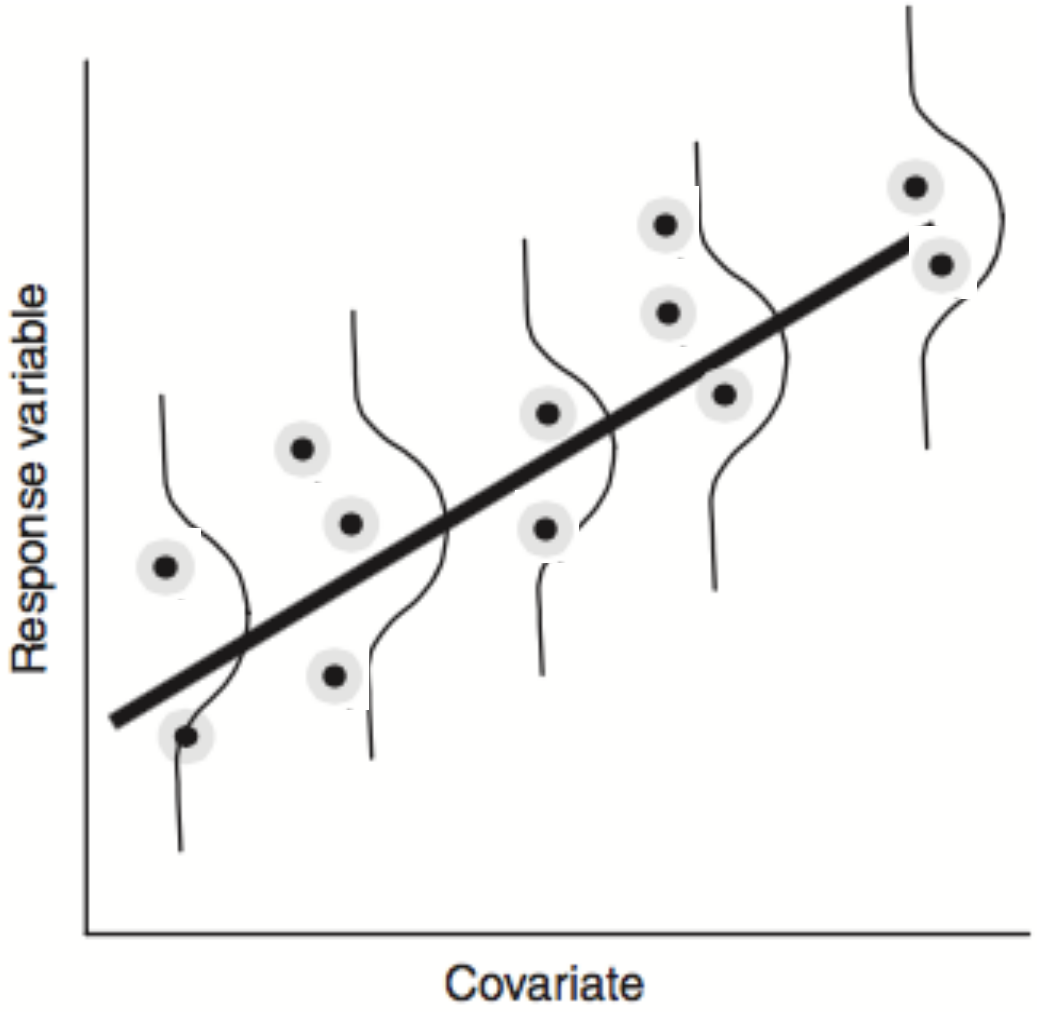
Residual variance

LMMs



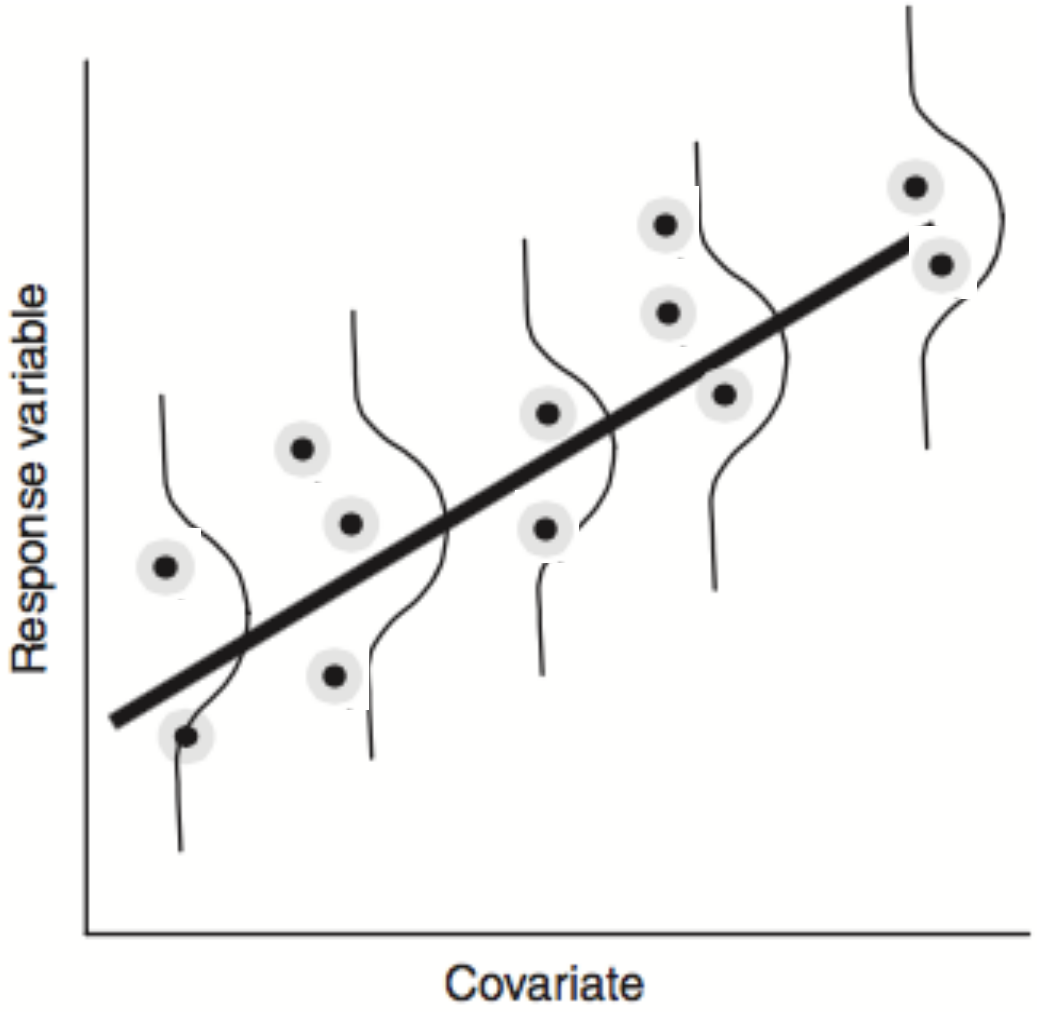
LMMs

- Estimate variance components and fixed parameter estimates simultaneously



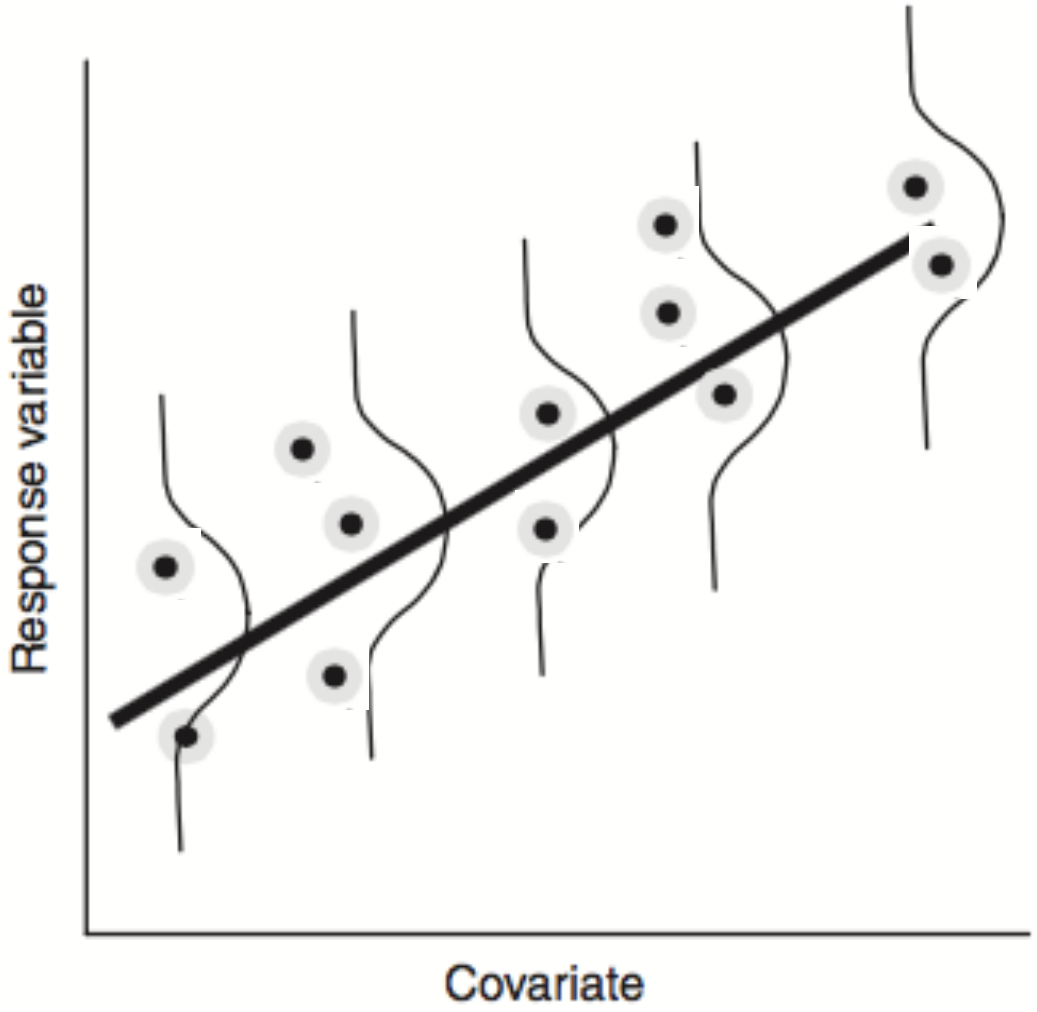
LMMs

- Estimate variance components and fixed parameter estimates simultaneously
- Complicated but very useful



LMMs

- Estimate variance components and fixed parameter estimates simultaneously
- Complicated but very useful
- Better than ANOVA



LMMs

- Estimate variance components and fixed parameter estimates simultaneously
- Complicated but very useful
- Better than ANOVA
- HO 18