Roy seeks to properly test the following three factors.

1. Bias
2. Between subject variability
3. Within subject variability (agreement between repeatability coefficients.)

Overall variability is the sum of the between subject variability and the within subject variability.

The LME model for the ith subject is written as:

y_{i} is the response variable.

The intercept and two methods are fixed effects, with \beta coefficients.

The two methods are also random effects, with b coefficients.