

- We are going to do is define our full model with our fixed effects and fully crossed Subject and Item random effects.
- Then we are going to define the null model with only the random effects.

```
model.full <- lmer(RT~Context*Sentence + (1+Context*Sentence|Subject) + (1+Context*Sentence|Item), data=DV, REML=TRUE)
```

```
model.null <- lmer(RT~(1+Context*Sentence|Subject) + (1+Context*Sentence|Item), data=DV, REML=TRUE)
```

- Note that we define our fixed effect using the notation `Context*Sentence`
- This is equivalent to `(Context + Sentence + Context:Sentence)` which corresponds to a main effect of Context, a main effect of Sentence and the interaction between the two (as represented by the colon symbol).

```

> anova(model.full, model.null)
refitting model(s) with ML (instead of REML)
Data: DV
Models:
model.null: RT ~ (1 + Context * Sentence | Subject) + (1 + Context * Sentence |
model.null:      Item)
model.full: RT ~ Context * Sentence + (1 + Context * Sentence | Subject) +
model.full:      (1 + Context * Sentence | Item)
      Df    AIC    BIC logLik deviance  Chisq Chi Df Pr(>Chisq)
model.null 22 26720 26840 -13338    26676
model.full 25 26718 26853 -13334    26668 8.6625   3 0.03413 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

- Our model with the fixed effects (as well as the random effects) is a better fit for our data than is the model just with the random effects. Now we need to look at the model parameters using the `summary()` function...

```

> summary(model_full)

```