What can we conclude from non-significant results?

- With NHST, a non-significant result means we cannot reject the null hypothesis. But it does not mean our data support the null hypothesis. There may be other hypotheses that our data fit.

- What we can do is estimate the Bayes factor associated with our data in support of the null and experimental model.

- Wagenmakers (2007) details a means to estimating the Bayes Factor (BF) of our data in support of one model or another using BIC. Essentially, it gives us a measure of the extent to which our data support a particular model.

- BFs are estimated using the BIC value for each model - BIC penalises additional parameters so the BF captures possible overfitting (i.e., too many parameters on our model).

- BF = exp ((BIC2 - BIC1)/2)

```
> anova (model.interceptonly, model.null)
Data: RO
Models:
model.null: DV ~ (1 | Subject) + (1 | Item)
model.interceptonly: DV ~ Condition + (1 | Subject) + (1 | Item)
                    Df    AIC    BIC  logLik deviance  Chisq Chi Df Pr(>Chisq)
model.null           3 601.97 614.91 -297.98   595.97
model.interceptonly  5 605.70 627.28 -297.85   595.70 0.2617      2     0.8773
```