- 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
```

Interpretation of the Bayes Factor in Terms of Evidence (cf. Raftery, 1995, Table 6)

Bayes Factor BF_{01}	$\Pr(H_0 \mid D)$	Evidence
1–3	.50–.75	weak
3–20	.75–.95	positive
20–150	.95–.99	strong
>150	>.99	very strong

```
> 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
```

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

BF = exp ((627.28-614.91)/2)

BF = 485

A BF of 485 is “Very Strong” evidence in support of the null hypothesis.