

- Before we build our null and experimental models, we need to ensure our DV is coded as an ordinal variable.

```
> Main$ratings <- as.ordered(Main$ratings)
```

```
> model.clm.null <- clmm(ratings ~ 1 + (1 + VideoCondition | Subject) + (1 +  
VideoCondition | SportType) + (1 + VideoCondition | Image), data = Main)
```

```
> model.clm4 <- clmm(ratings ~ VideoCondition + (1 + VideoCondition | Subject) +  
(1 + VideoCondition | SportType) + (1 + VideoCondition | Image), data = Main)
```

- The syntax for our null model requires we have an explicit intercept (represented by a 1 in the fixed effects structure) similar to when we built regression models (this is different to how we specify a null model in `lme4` syntax).

- First, let's test whether our experimental model and null models differ:

```
> anova(model.clm.null, model.clm4)
```

```
## Likelihood ratio tests of cumulative link models:
##
##          formula:
## model.clm.null ratings ~ 1 + (1 + VideoCondition | Subject) + (1 + VideoCondition | SportType) + (1 +
VideoCondition | Image)
## model.clm4      ratings ~ VideoCondition + (1 + VideoCondition | Subject) + (1 + VideoCondition |
SportType) + (1 + VideoCondition | Image)
##          link: threshold:
## model.clm.null logit flexible
## model.clm4     logit flexible
##
##          no.par   AIC  logLik LR.stat df Pr(>Chisq)
## model.clm.null    28 10841 -5392.6
## model.clm4        30 10837 -5388.4  8.5295  2    0.01406 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

- We can see that they do - and our experimental model has the lower AIC value.