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## Supplementary Materials

# Contents

|          |   |          |
|----------|---|----------|
| <b>1</b> | <b>General approach</b>   | <b>3</b> |
| 1.1      | model selection . . . . .                                       | 4        |
| 1.1.1    | Model selection : Emotion rivalry (Speed) . . . . .             | 4        |
| 1.1.2    | Model selection : Gender rivalry (Speed) . . . . .              | 4        |
| 1.1.3    | Model selection : Emotion stability (Cumulative time) . . . . . | 5        |
| 1.1.4    | Model selection : gender stability (cumulative time) . . . . .  | 5        |

# 1 General approach

We used R (R Core Team, 2012) and lme4 (Bates, Maechler & Bolker, 2012) to perform a linear mixed effects analysis of the relationship between rivalry and consciousness phases. As fixed effects, we entered rivalry and phases (with interaction term) into the model. As random effects, we had intercepts for subjects. Visual inspection of residual plots did not reveal any obvious deviations from homoscedasticity or normality. P-values were obtained by anova of the full models for gender blocks and emotion blocks:

```
fit <- lmer(mean ~ rivalry*phase + (1|subject))
```

## 1.1 model selection

The logic of the model selection is to compare the likelihood of different models. First, the model without any factor (the null model), then each model add a factor that we are interested in.

```
model1<-lmer(speed ~ 1 + (1|subject), dat) # null model

model2<-lmer(speed ~ phase + (1|subject), dat) # add consciousness phases: formation vs dissolution

model3<-lmer(speed ~ phase + rivalry + (1|subject), dat) # add rivalry: emotion(happy vs neutral) OR gender

model4<-lmer(speed ~ rivalry*phase + (1|subject), dat) # add interaction

anova(model1,model2,model3,model4)

# Stabilisation

model1<-lmer(STB ~ 1 + (1|subject), dat) # null model

model2<-lmer(STB ~ rivalry + (1|subject), dat) # add consciousness rivalry: emotion(happy vs neutral) OR gender

anova(model1,model2)
```

### 1.1.1 Model selection : Emotion rivalry (Speed)

| term   | npars | AIC         | BIC         | logLik     | deviance    | statistic | df    | p.value |
|--------|-------|-------------|-------------|------------|-------------|-----------|-------|---------|
| model1 | 3.000 | -24,875.386 | -24,854.800 | 12,440.693 | -24,881.386 |           |       |         |
| model2 | 4.000 | -25,014.287 | -24,986.839 | 12,511.144 | -25,022.287 | 140.901   | 1.000 | 0.000   |
| model3 | 5.000 | -25,073.504 | -25,039.193 | 12,541.752 | -25,083.504 | 61.216    | 1.000 | 0.000   |
| model4 | 6.000 | -25,076.132 | -25,034.959 | 12,544.066 | -25,088.132 | 4.628     | 1.000 | 0.031   |

### 1.1.2 Model selection : Gender rivalry (Speed)

| term   | npars | AIC         | BIC         | logLik     | deviance    | statistic | df    | p.value |
|--------|-------|-------------|-------------|------------|-------------|-----------|-------|---------|
| model1 | 3.000 | -28,239.352 | -28,218.735 | 14,122.676 | -28,245.352 |           |       |         |
| model2 | 4.000 | -28,259.495 | -28,232.004 | 14,133.747 | -28,267.495 | 22.142    | 1.000 | 0.000   |
| model3 | 5.000 | -28,257.918 | -28,223.555 | 14,133.959 | -28,267.918 | 0.424     | 1.000 | 0.515   |
| model4 | 6.000 | -28,258.001 | -28,216.765 | 14,135.000 | -28,270.001 | 2.083     | 1.000 | 0.149   |

### 1.1.3 Model selection : Emotion stability (Cumulative time)

| term   | npar  | AIC        | BIC        | logLik     | deviance   | statistic | df    | p.value |
|--------|-------|------------|------------|------------|------------|-----------|-------|---------|
| modell | 3.000 | 12,729.181 | 12,742.657 | -6,361.590 | 12,723.181 |           |       |         |
| model2 | 4.000 | 12,414.950 | 12,432.919 | -6,203.475 | 12,406.950 | 316.230   | 1.000 | 0.000   |

### 1.1.4 Model selection : gender stability (cumulative time)

| term   | npar  | AIC        | BIC        | logLik     | deviance   | statistic | df    | p.value |
|--------|-------|------------|------------|------------|------------|-----------|-------|---------|
| modell | 3.000 | 14,051.589 | 14,065.441 | -7,022.794 | 14,045.589 |           |       |         |
| model2 | 4.000 | 14,050.534 | 14,069.003 | -7,021.267 | 14,042.534 | 3.055     | 1.000 | 0.080   |

### References

Bates, Douglas, Martin Mächler, Ben Bolker, and Steve Walker. 2014. “Fitting Linear Mixed-Effects Models Using lme4.” arXiv [stat.CO]. arXiv. <http://arxiv.org/abs/1406.5823>.