# Supplementary Document

This document contains information about the model specifications, and model selection processes.

## Model Specification

* Maximal model, iterative processes (Bates’s suggestion)

|  |  |
| --- | --- |
| Name | Formula |
| model\_mag1 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + congruency \* num\_distance | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |
| model\_mag2 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + congruency \* num\_distance | | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |
| model\_mag3 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + congruency + num\_distance | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |
| model\_mag4 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + congruency + num\_distance | | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |
| model\_mag5 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + congruency | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |
| model\_mag6 | lmer(log\_rt ~ congruency \* num\_distance \* fluency\_centered +  (1 + num\_distance | participant) +  (1| problem),  data = mag\_stroop\_df,  control = lmerControl(optimizer = "bobyqa",  optCtrl = list(maxfun = 2e5))) |

Due to singularity, we compiled the following.

## Model Selection

In the final model selection,

## Post-hoc outputs

Numerical distance congruency