Random structures of linear mixed effects models

The models listed here are the final models that were used in the analyses reported. In all cases, we initially attempted to run a model with the full random structure. The random structure was trimmed if the fully-specified model did not converge.

Global measures

In all models, "depvar" refers to the dependent variable. For Model 1, "cond" refers to a single variable that codes all seven conditions (upright; 30° left; 60° left; 30° right; 60° right; 30° alternating; 60° alternating). For Model 2, the upright condition was not included (direction: left vs. right vs. alternating; angle: 30° vs. 60°).). For Model 3, neither the alternating not the upright conditions were included (direction left vs. right; angle: 30° vs. 60°; frequency: high vs. low).

Total sentence reading time

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle+(1+direction*angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle+(1+direction*angle|participant)+(1+direction*angle|item)

Number of fixations per sentence

Model 1. depvar~cond+(1+cond|participant)+(1|item)
Model 2. depvar~direction*angle+(1+direction*angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle+(1+direction*angle|participant)+(1+direction*angle|item)

Fixation duration

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle+(1+direction*angle|participant)+(1+angle|item)

Regression probability

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle+(1+angle|participant)+(1+angle|item)

Skipping probability

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle+(1+angle|participant)+(1+angle|item)

Local measures

In all models, "depvar" refers to the dependent variable. For Model 1, "cond" refers to a single variable that codes all seven conditions (upright; 30° left; 60° left; 30° right; 60° right; 30° alternating; 60° alternating). For Model 2, the upright condition was not included (direction: left vs. right vs. alternating; angle: 30° vs. 60°; frequency: high vs. low). For Model 3, neither the alternating not the upright conditions were included (direction left vs. right; angle: 30° vs. 60°; frequency: high vs. low).

First fixation duration

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)

Single fixation duration

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)

Gaze duration

Model 1. depvar~cond+(1+cond|participant)+(1|item)
Model 2. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)

Total fixation time

Model 1. depvar~cond+(1|participant)+(1|item)
Model 2. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)
Model 3. depvar~direction*angle*frequency+(1+angle|participant)+(1+angle|item)