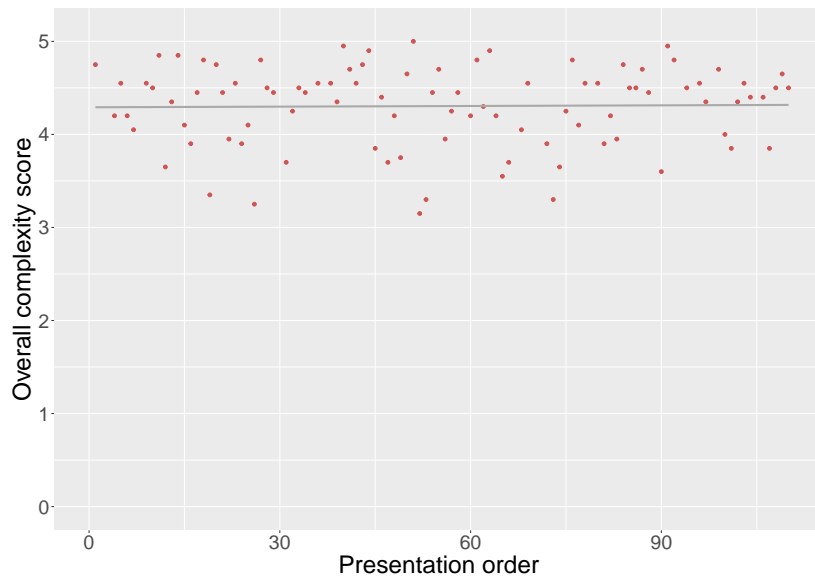# Appendix C: Models computed and resulting parameters

Here we report the results of the step-up procedure.

1. Effect of the order of presentation of stimuli on overall accuracy

clmm(overall-Error $\sim$ ORDER + (1|participant) + (1|item), data = df)
Items = 94; Participants = 20
AIC = 3597.59

2. Effect of chronological age on overall accuracy

clmm(overall-Error $\sim$ AGE + (1 | participant) + (1 | item), data = df)
Items = 94; Participants = 20; Pseudo-R^2 = 0.270
AIC = 3593.61

AGE	β	SE	z value	p value
	-0.021	0.010	-2.103	<0.05

3. Effect of model-driven overall complexity on error-driven overall complexity

clmm(overall-Error $\sim$ overall-Model + AGE + (1|participant) + (1|item), data = df)
Items = 94; Participants = 20; Pseudo-R^2 = 0.278
AIC = 3578.52

overall-Model	β	SE	z value	p value
	-0.112	0.026	-4.289	< 0.001
AGE	β	SE	z value	p value
	-0.021	0.01	-2.107	< 0.05

4. Effect of model-driven HS complexity on error-driven HS complexity

glmer(HS-Error $\sim$ HS-Model + AGE + (1|participant) + (1|item), data = df, family = binomial(link = "logit"))
Observations = 1880; Items = 94; Participants = 20; Marginal R^2 = 0.162; Conditional R^2 = 0.446
AIC = 1807

HS-Model	β	SE	z value	p value
	-0.25	0.038	-6.473	< 0.001
AGE	β	SE	z value	p value
	-0.026	0.01	-2.534	< 0.05

5. Effect of model-driven Location complexity on error-driven Location complexity

glmer(L-Error $\sim$ L-Model + (1|participant) + (1|item), data = df, family = binomial(link = "logit"))
Observations = 1880; Items = 94; Participants = 20; Marginal R^2 = 0.072; Conditional R^2 = 0.377
AIC = 546.6

L-Model	β	SE	z value	p value
	-0.266	0.096	-2.745	< 0.05

6. Effect of model-driven Movement complexity on error-driven Movement complexity

glmer(M-Error $\sim$ M-Model + (1|participant) + (1|item), data = df, family = binomial(link = "logit"))
Observations = 1880; Items = 94; Participants = 20
AIC = 1709.33

7. Effect of each model-driven phonemic class on error-driven overall complexity

clmm(overall-Error $\sim$ HS-Model + L-Model + AGE + (1|participant) + (1|item), data = df)
Items = 94; Participants = 20; Pseudo-R^2 = 0.278
AIC = 3579.77

HS-Model	β	SE	z value	p value
	-0.134	0.035	-3.797	<0.001
L-Model	β	SE	z value	p value
	-0.127	0.055	-2.303	<0.05
AGE	β	SE	z value	p value
	-0.021	0.01	-2.105	<0.05

8. Ad-hoc analysis: Effect of model-driven Movement complexity on error-driven Movement complexity for 5 easiest and 5 most complex signs

glmer(M-Error $\sim$ M-Model + (1|participant) + (1|item), data = df, family = binomial(link = "logit"))
Observations = 200; Items = 10; Participants = 20
AIC = 133.16