Supplemental Materials

Table 1. Bayesian model results.

	Estimate	SE	Lower 90% CI	Upper 90% CI	$\hat{R}$	Bulk ESS	Tail ESS
Intercept	1.29	0.42	0.61	1.98	1	10187	11889
Component	0.31	0.3	-0.19	0.8	1	15191	13811
Subtype-Nonfluent	0.46	0.71	-0.69	1.63	1	12123	12026
Subtype-Semantic	-0.74	0.64	-1.8	0.31	1	10692	11885
Task	-0.55	0.3	***-1.04***	***-0.06***	1	14700	13686
Severity	-0.11	0.08	-0.25	0.02	1	10600	11938
Component:Subtype-Nonfluent	0.24	0.67	-0.85	1.36	1	17071	13392
Component:Subtype-Semantic	1.62	0.57	**0.7**	**2.57**	1	15168	14175
Component:Task	1.45	0.48	***0.67***	***2.24***	1	13943	13603
Subtype-Nonfluent:Task	-0.72	0.58	-1.69	0.22	1	16013	13932
Subtype-Semantic:Task	-0.19	0.51	-1.04	0.66	1	15656	14808
Component:Subtype-Nonfluent:Task	0.84	1.03	-0.8	2.58	1	16502	14290
Component:Subtype-Semantic:Task	-1.35	0.8	***-2.68***	***-0.04***	1	14174	13657

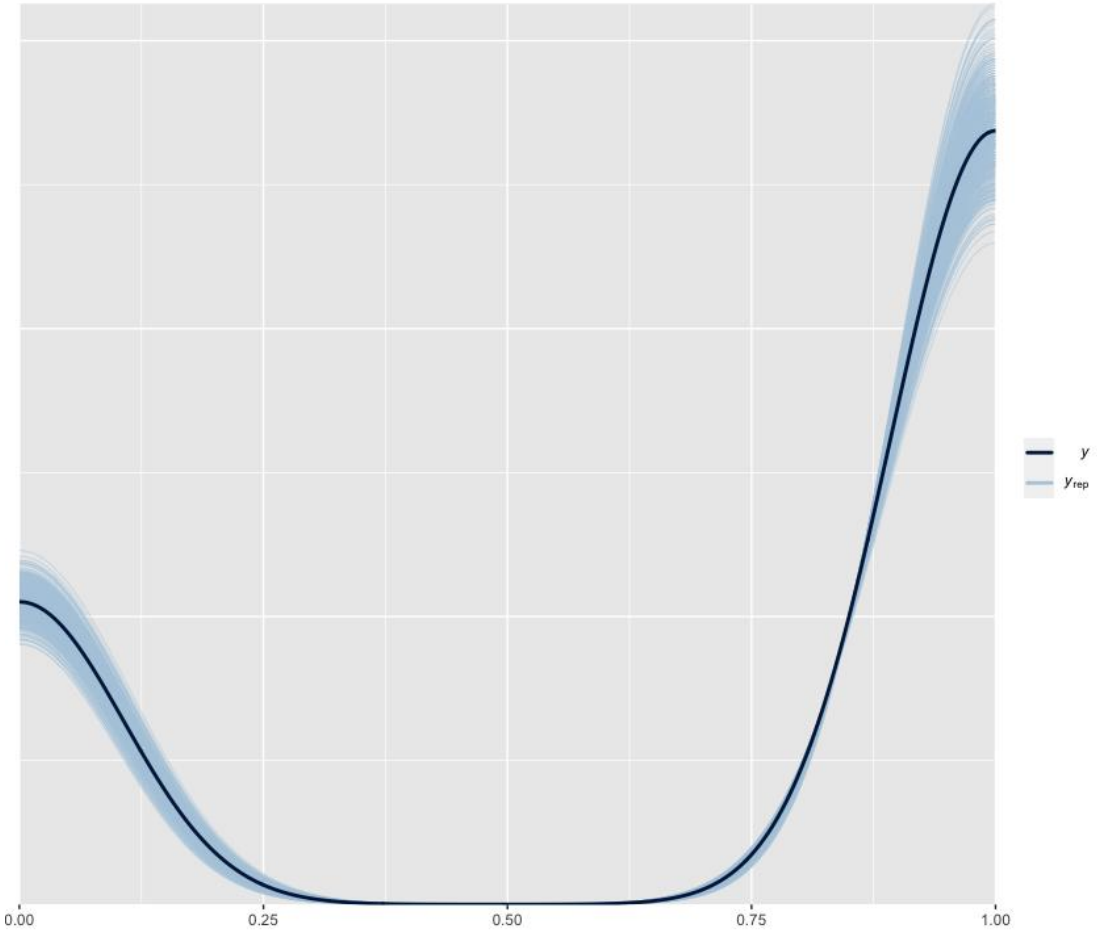
Note: SE = Standard Error. CI = Credible Interval. $\hat{R}$ = Gelman-Rubin potential scale reduction statistic. ESS = Effective Sample Size. Subtype = PPA Variant, see pairwise comparisons in Table 2 (also Table 3 in *Dresang et al.* manuscript). Effects are considered reliable if the 90% credible interval does not overlap with zero. These are denoted with ***bold italics***.

Table 2. Pairwise comparisons (with Tukey corrections) of the PPA variant x gesture component x gesture meaning interaction.

PPA Variant	Meaningful Kinematics–Hand Posture Contrast			Meaningless Kinematics–Hand Posture Contrast		
	estimate	lower HPD	higher HPD	estimate	lower HPD	higher HPD
svPPA	***-1.91***	***-2.94***	***-0.97***	***-2.02***	***-3.03***	***-1.10***
lvPPA	-0.30	-0.90	0.28	***-1.75***	***-2.53***	***-1.01***
nfvPPA	-0.53	-1.73	0.71	***-2.78***	***-4.48***	***-1.34***

Note: Effects are considered reliable if the highest posterior density (HPD) interval does not overlap with zero. These are denoted with ***bold italics***.

Figure 1. Posterior Predictive Check.



Code for R analysis.

```
beta_coef_prior = prior(student_t(3, 0, 2.5), class = b)
BayesIntxn ← brm(Score ~ 1 + Component*Subtype*Task + Severity + (1|Subject) + (1|Item),
                 data = ppaGnoAP, family = bernoulli, warmup = 1500, iter = 6000, chains = 4,
                 cores = 4, seed = 42, prior = beta_coef_prior, backend = 'cmdstan', init =
                 "random", file_refit = "on_change")
pp_check(BayesIntxn, ndraws = 600)
summary(BayesIntxn, prob = .9)
conditional_effects(BayesIntxn)
prior_summary(BayesIntxn)
mcmc_plot(BayesIntxn, type = 'trace')
hypothesis(BayesIntxn, class = "b", "Taskmeaningless >0")
hypothesis(BayesIntxn, class = "b", "SubtypeSemantic >0")
hypothesis(BayesIntxn, class = "b", "SubtypeNonfluent >0")
hypothesis(BayesIntxn, class = "b", "ComponentKIN >0")
hypothesis(BayesIntxn, class = "b", "ComponentKIN:SubtypeSemantic:Taskmeaningless >0")
emmeans(BayesIntxn, pairwise~Component*Subtype*Task, adjust="tukey")
```