

Supplemental Material S3. Tables for model output and comparison.

Table S1. Model Comparison Results: Exemplar Variability

Model	logLikelihood	χ^2	<i>p</i>
Base model	-1469.4		
Full model	-1439.6	59.551	.002

Table S2. Output for Full Model

	Fixed Effects					
Parameter	Estimate	SE	z	p	95% CI	
Intercept	-0.169	0.474	-0.357	.721	-1.097	0.759
Visit Test2	0.326	0.360	0.905	.366	-0.380	1.031
Visit Test3	0.854	0.365	2.340	.019	0.139	1.570
Visit Test4	0.356	0.366	0.973	.330	-0.361	1.073
Language Spanish	0.103	0.634	0.162	.872	-1.140	1.346
Variability Condition Low	0.472	0.605	0.780	.435	-0.713	1.657
Trial Type Within-language Generalization	0.435	0.362	1.204	.228	-0.273	1.144
Visit Test2 X Language Spanish	0.534	0.530	1.007	.314	-0.505	1.573
Visit Test3 X Language Spanish	-0.131	0.528	-0.248	.804	-1.165	0.903
Visit Test4 X Language Spanish	0.563	0.535	1.052	.293	-0.486	1.611
Visit Test2 X Variability Condition Low	-0.522	0.509	-1.025	.305	-1.520	0.476
Visit Test3 X Variability Condition Low	-1.314	0.514	-2.555	.011	-2.322	-0.306
Visit Test4 X Variability Condition Low	-0.214	0.518	-0.413	.679	-1.230	0.802
Language Spanish X Variability Condition Low	-0.535	0.826	-0.647	.517	-2.153	1.084

Visit Test2 X Trial Type Within-language Generalization	0.162	0.513	0.315	.753	-0.844	1.167
Visit Test3 X Trial Type Within-language Generalization	-0.769	0.513	-1.497	.134	-1.775	0.238
Visit Test4 X Trial Type Within-language Generalization	-0.573	0.517	-1.109	.268	-1.586	0.440
Language Spanish X Trial Type Within-language Generalization	-0.652	0.523	-1.246	.213	-1.676	0.373
Variability Condition Low X Trial Type Within-language Generalization	-0.342	0.512	-0.667	.505	-1.345	0.661
Visit Test2 X Language Spanish X Variability Condition Low	0.345	0.734	0.469	.639	-1.094	1.784
Visit Test3 X Language Spanish X Variability Condition Low	1.392	0.731	1.904	.057	-0.041	2.826
Visit Test4 X LanguageSpanish X Variability Condition Low	-0.559	0.737	-0.758	.448	-2.005	0.886
Visit Test2 X Language Spanish X Trial Type Within-language Generalization	-0.412	0.748	-0.550	.582	-1.879	1.055
Visit Test3 X Language Spanish X Trial Type Within-language Generalization	1.135	0.745	1.523	.128	-0.325	2.595
Visit Test4 X Language Spanish X Trial Type Within-language Generalization	0.629	0.754	0.835	.404	-0.848	2.106
Visit Test2 X Variability Condition Low X Trial Type Within-language Generalization	0.007	0.724	0.009	.993	-1.413	1.426
Visit Test3 X Variability Condition Low X Trial Type Within-language Generalization	1.534	0.727	2.109	.035	0.108	2.959

Visit Test4 X Variability Condition Low X Trial Type Within-language Generalization	0.914	0.737	1.240	.215	-0.530	2.358
Language Spanish X Variability Condition Low X Trial Type Within-language Generalization	0.000	0.727	0.000	1.000	-1.425	1.426
Visit Test2 X Language Spanish X Variability Condition Low X Trial Type Within-language Generalization	0.112	1.038	0.108	.914	-1.923	2.146
Visit Test3 X Language Spanish X Variability Condition Low X Trial Type Within-language Generalization	-1.843	1.034	-1.782	.075	-3.870	0.184
Visit Test4 X Language Spanish: X Variability Condition Low X Trial Type Within-language Generalization	-0.157	1.047	-0.150	.881	-2.208	1.895

Random Effects

	Variance	SD	Correlation
Participant (intercept)	1.023	1.011	
Item (intercept)	.421	.6485	
Variability Condition Low	.473	.6880	-.30
Language Spanish	1.058	1.029	-.72

Model Fit

	Conditional	Marginal
R^2	.291	.032

Note. Confidence intervals calculated using Wald method.

Table S3. Type II Wald test of Linear Hypothesis

	χ^2	<i>df</i>	<i>p</i>
Visit	19.295	3	.0002
Language	0.019	1	.891
Variability Condition	0.149	1	.699
Trial Type	0.0005	1	.982
Visit X Language	8.006	3	.046
Visit X Variability Condition	2.410	3	.492
Language X Variability Condition	0.482	1	.488
Visit X Trial Type	0.636	3	.888
Language X Trial Type	9.224	1	.002
Variability Condition X Trial Type	0.031	1	.860
Visit X Language X Variability Condition	5.513	3	.138
Visit X Language X Trial Type	3.011	3	.390
Visit X Variability Condition X Trial Type	3.771	3	.287
Language X Variability Condition X Trial Type	1.65	1	.199
Visit X Language X Variability Condition X Trial Type	4.687	3	.196

Table S4. Model Comparison Results: BESA semantic scores

Model	logLikelihood	χ^2	<i>p</i>
Base model	-277.83		
+ Spanish	-276.89	1.884	0.17
+ English	-275.67	4.322	0.038

Table S5. Model Comparison Results: Language Sample Measures

Model	logLikelihood	χ^2	<i>p</i>
Base model	-365.88		
+ NDW	-360.42	10.921	.001
+ NTW	-360.39	0.060	.806
+ MLU	-358.77	3.226	.072
+ SI	-357.95	1.655	.198

Table S6. Model Comparison Results: Code-switching

Model	logLikelihood	χ^2	<i>p</i>
Base model	-365.87		
+ Code-switching	759.67	10.202	.006