

Supplemental Material S3

Bayesian single-trial level re-analyses of ERP data from Experiments 1 and 2. All models below were fit using the “brms” package (Bürkner, 2017), with weakly regularizing priors for all population-level effects (normal distribution with a mean of 0 and standard deviation of 10), using four chains sampling for 4000 iterations (2000 of warmup). Contrasts were set up in the same way as with the lme4 models but weighted by the number of trials in each cell (only correct trials without artifacts were included). For all models, the grouping variables were Participants, Electrodes nested within Participants, and Target words. Bold rows indicate parameters for which there is evidence of an effect because the 90% Highest Density Interval (chosen because it is more stable than 95% given the effective sample sizes in our models; Kruschke, 2015) doesn’t contain 0 or over 90% (less than 10% for negative effects) of the posterior distribution exceeds 0.

Table S3.1. Posterior estimates for multi-level model of mean amplitude in the N400 window for visual stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	2.84	1.36	0.70	5.10	0.98
IN vs. LP & HP	3.9	0.87	2.52	5.34	1.00
LP vs. HP	-0.23	0.83	-1.51	1.18	0.40
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	5.1	1.07			
Participant:IN vs. LP & HP	2.41	0.57			
Participant:LP vs. HP	2.13	0.54			
Participant:Electrode:Intercept	1.53	0.15			
Participant:Electrode:IN vs. LP & HP	0.19	0.15			
Participant:Electrode:LP vs. HP	0.25	0.18			
Target:Intercept	4.02	0.22			

Table S3.2. Posterior estimates for multi-level model of mean amplitude in the N400 window for auditory stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-2.95	0.95	-4.51	-1.36	0.0014
IN vs. LP & HP	3.99	0.79	2.75	5.34	1.00
LP vs. HP	2.12	0.86	0.75	3.57	0.99
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	3.57	0.70			
Participant:IN vs. LP & HP	2.27	0.56			
Participant:LP vs. HP	2.62	0.56			
Participant:Electrode:Intercept	0.39	0.17			
Participant:Electrode:IN vs. LP & HP	0.17	0.13			
Participant:Electrode:LP vs. HP	0.2	0.15			
Target:Intercept	3.35	0.19			

Table S3.3. Posterior estimates for multi-level model of mean amplitude in the Frontal Positivity window for visual stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-1.99	1.17	-3.93	-0.13	0.043
LP vs. HP & IN	-1.00	0.75	-2.24	0.22	0.088
HP vs. IN	1.42	1.02	-0.26	3.07	0.919
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	4.32	0.96			
Participant:LP vs. HP & IN	1.95	0.48			
Participant:HP vs. IN	2.96	0.69			
Participant:Electrode:Intercept	3.02	0.19			

Participant:Electrode:LP vs. HP & IN	0.24	0.18			
Participant:Electrode:HP vs. IN	0.24	0.18			
Target:Intercept	4.11	0.23			

Table S3.4. Posterior estimates for multi-level model of mean amplitude in the Frontal Positivity window for auditory stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-5.53	1.15	-7.37	-3.63	0
LP vs. HP & IN	-1.53	0.85	-2.95	-0.17	0.036
HP vs. IN	3.26	1.03	1.57	4.92	0.999
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	4.32	0.94			
Participant:LP vs. HP & IN	2.63	0.57			
Participant:HP vs. IN	3.05	0.66			
Participant:Electrode:Intercept	3.03	0.19			
Participant:Electrode:LP vs. HP & IN	0.22	0.16			
Participant:Electrode:HP vs. IN	0.66	0.27			
Target:Intercept	3.67	0.2			

Table S3.5. Posterior estimates for multi-level model of mean amplitude in the pre-Frontal Positivity window for visual stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-4.32	1.14	-6.14	-2.4	0.00013
LP vs. HP & IN	-1.17	0.83	-2.6	0.11	0.07537
HP vs. IN	1.1	1.1	-0.73	2.88	0.84425

Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	4.39	1.02			
Participant:LP vs. HP & IN	1.93	0.61			
Participant:HP vs. IN	2.99	0.82			
Participant:Electrode:Intercept	2.28	0.27			
Participant:Electrode:LP vs. HP & IN	0.31	0.25			
Participant:Electrode:HP vs. IN	0.38	0.29			
Target:Intercept	4.37	0.26			

Table S3.6. Posterior estimates for multi-level model of mean amplitude in the pre-Frontal Positivity window for auditory stimuli in Experiment 1.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-5.48	1.14	-7.33	-3.61	0
LP vs. HP & IN	-1.46	0.84	-2.86	-0.11	0.044
HP vs. IN	3.27	1	1.64	4.89	0.999
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	4.34	0.95			
Participant:LP vs. HP & IN	2.64	0.59			
Participant:HP vs. IN	3.06	0.66			
Participant:Electrode:Intercept	3.04	0.19			
Participant:Electrode:LP vs. HP & IN	0.22	0.16			
Participant:Electrode:HP vs. IN	0.65	0.27			
Target:Intercept	3.67	0.21			

Table S3.7. Posterior estimates for multi-level model of mean amplitude in the N400 window in Experiment 2.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	0.21	0.536	-0.66	1.09	0.66
IN vs. LP & HP	5.01	0.751	3.72	6.19	1
HP vs. LP	1.56	0.724	0.4	2.78	0.98
Average vs. Idiosyncratic	-0.32	0.563	-1.2	0.62	0.29
IN vs. HP & LP x Average vs. Idiosyncratic	-1.37	1.169	-3.41	0.44	0.12
HP vs. LP x Average vs. Idiosyncratic	0.45	1.501	-2.07	2.83	0.62
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	2.34	0.411			
Participant:IN vs. LP & HP	2.75	0.544			
Participant:LP vs. HP	2.75	0.502			
Participant:Average vs. Idiosyncratic	2.07	0.391			
Participant:IN vs. HP & LP x Average vs. Idiosyncratic	3.75	0.765			
Participant:HP vs. LP x Average vs. Idiosyncratic	6.11	1.107			
Participant:Electrode:Intercept	0.71	0.08			
Participant:Electrode:IN vs. LP & HP	0.15	0.117			
Participant:Electrode:LP vs. HP	0.12	0.09			
Participant:Electrode:Average vs. Idiosyncratic	0.1	0.077			
Participant:Electrode:IN vs. HP & LP x Average vs. Idiosyncratic	0.25	0.185			
Participant:Electrode:HP vs. LP x Average vs. Idiosyncratic	0.23	0.171			
Target:Intercept	4.9	0.162			

Target:Average vs. Idiosyncratic	8.46	0.292			
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Table S3.8. Posterior estimates for multi-level model of mean amplitude in the Frontal Positivity window in Experiment 2.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-0.95	0.55	-1.8403	-0.061	0.0393
LP vs. IN & HP	-1.99	0.73	-3.1988	-0.82	0.0043
HP vs. IN	-2.4	0.88	-3.8218	-0.947	0.0051
Average vs. Idiosyncratic	-0.13	0.59	-1.1147	0.827	0.4203
LP vs. IN & HP x Average vs. Idiosyncratic	0.13	1.31	-2.0718	2.203	0.5379
HP vs. IN x Average vs. Idiosyncratic	2.28	1.38	0.0078	4.51	0.9499
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	2.29	0.46			
Participant:LP vs. IN & HP	3.01	0.52			
Participant:HP vs. IN	3.46	0.61			
Participant:Average vs. Idiosyncratic	2.29	0.44			
Participant:LP vs. IN & HP x Average vs. Idiosyncratic	5.2	1.03			
Participant:HP vs. IN x Average vs. Idiosyncratic	4.95	1.03			
Participant:Electrode:Intercept	3	0.15			
Participant:Electrode:LP vs. IN & HP	0.31	0.14			
Participant:Electrode:HP vs. IN	0.19	0.15			
Participant:Electrode:Average vs. Idiosyncratic	0.14	0.1			
Participant:Electrode:LP vs. IN & HP x Average vs.	0.21	0.15			

Idiosyncratic					
Participant:Electrode:HP vs. IN x Average vs. Idiosyncratic	0.3	0.22			
Target:Intercept	4.6	0.16			
Target:Average vs. Idiosyncratic	8.46	0.29			

Table S3.9. Posterior estimates for multi-level model of mean amplitude in the pre-Frontal Positivity window in Experiment 2.

Population-level effects	Estimate	Std. Error	HDI lower	HDI upper	Posterior Prop. > 0
Intercept	-2.979	0.55	-3.87	-2.06	0
LP vs. IN & HP	-1.721	0.74	-2.94	-0.52	0.0118
HP vs. IN	-2.212	0.92	-3.69	-0.68	0.0095
Average vs. Idiosyncratic	-0.133	0.59	-1.11	0.85	0.4108
LP vs. IN & HP x Average vs. Idiosyncratic	-0.054	1.19	-2.02	1.86	0.4861
HP vs. IN x Average vs. Idiosyncratic	2.139	1.37	-0.12	4.4	0.9404
Group-level effects	Std. Deviation	Std. Error			
Participant:Intercept	2.173	0.51			
Participant:LP vs. IN & HP	2.918	0.51			
Participant:HP vs. IN	3.597	0.65			
Participant:Average vs. Idiosyncratic	2.16	0.44			
Participant:LP vs. IN & HP x Average vs. Idiosyncratic	4.192	0.88			
Participant:HP vs. IN x Average vs. Idiosyncratic	4.419	1.06			
Participant:Electrode:Intercept	2.766	0.23			
Participant:Electrode:LP vs. IN & HP	0.253	0.18			

Participant:Electrode:HP vs. IN	0.218	0.17			
Participant:Electrode:Average vs. Idiosyncratic	0.181	0.14			
Participant:Electrode:LP vs. IN & HP x Average vs. Idiosyncratic	0.322	0.24			
Participant:Electrode:HP vs. IN x Average vs. Idiosyncratic	0.421	0.32			
Target:Intercept	4.691	0.17			
Target:Average vs. Idiosyncratic	8.785	0.32			