

Supplementary Material for
 “Multimodal Language Processing: How Preceding Discourse Constrains Gesture Interpretation and Affects Gesture Integration When Gestures Do Not Synchronise with Semantic Affiliates”

Isabella Fritz, Sotaro Kita, Jeannette Littlemore, Andrea Krott

	Time window				
	200-300	300-400	400-500	500-600	600-700
Discourse	.723	.763	.820	.865	.772
Discourse x PR	.481	.695	.462	.682	.311
Discourse x PL	.484	.962	.430	.625	.694
Discourse x Centre	.399	.908	.559	.997	.625
Discourse x CL	.859	.737	.902	.653	.782
Discourse x CR	.539	.795	.425	.715	.622
Discourse x AR	.603	.785	.902	.839	.779
	700-800	800-900	900-1000	1000-1100	1100-1200
Discourse	.710	.584	.430	.989	.689
Discourse x PR	.520	.501	.285	.656	.934
Discourse x PL	.513	.509	.256	.589	.783
Discourse x Centre	.830	.899	.502	.906	.871
Discourse x CL	.642	.608	.766	.613	.483
Discourse x CR	.653	.731	.331	.801	.906
Discourse x AR	.905	.747	.502	.702	.782

Table 1. Summary (p-values) of the mixed effect models for ERPs time-locked to the gesture onset across all time windows, with Related Discourse as baseline for the factor Discourse and Anterior Left ROI as baseline for the factor ROI. PL = posterior left ROI, PR = posterior right ROI, CL = centre left ROI, CR = centre right ROI, AR = anterior right ROI; * < .05, . < .01

	Time window				
	200-300	300-400	400-500	500-600	600-700
Discourse	.582	.514	.7214	.398	.895
Gesture	.794	.613	.6030	.895	.502
Gesture x Discourse	.956	.733	.7802	.926	.290
Discourse x AR	.524	.435	.4011	.610	.854
Discourse x AL	.977	.841	.3053	.241	.422
Discourse x Centre	.38	.357	.8970	.966	.930
Discourse x PL	.992	.912	.7601	.639	.575
Gesture Match x AR	.317	.733	.3190	.443	.447
Gesture Match x AL	.482	.149	.3955	.905	.843
Gesture Match x Centre	.677	.327	.5172	.655	.984
Gesture Match x PL	.694	.916	.7911	.928	.756
Gesture Match x Discourse x AR	.926	.370	.9483	.596	.264
Gesture Match x Discourse x AL	.806	.476	.9351	.918	.817
Gesture Match x Discourse x Centre	.551	.205	.6101	.599	.652
Gesture x Discourse x PL	.804	.915	.6859	.769	.845
	700-800	800-900	900-1000	1000-1100	1100-1200
Discourse	.525	.230	.768	.696	.542
Gesture	.369	.048 *	.220	.236	.342
Gesture x Discourse	.245	.028 *	.233	.309	.447
Discourse x AR	.406	.120	.303	.668	.932
Discourse x AL	.680	.245	.917	.249	.389
Discourse x Centre	.346	.119	.186	.186	.339
Discourse x PL	.693	.757	.628	.753	.811
Gesture Match x AR	.118	.067 .	.064 .	.195	.294
Gesture Match x AL	.185	.067 .	.261	.095 .	.269
Gesture Match x Centre	.222	.328	.083 .	.274	.385
Gesture Match x PL	.800	.859	.949	.917	.992
Gesture Match x Discourse x AR	.098 .	.039 *	.097 .	.153	.380
Gesture Match x Discourse x AL	.301	.040 *	.193	.043 *	.165
Gesture Match x Discourse x Centre	.238	.097 .	.327	.072 .	.169
Gesture Match x Discourse x PL	.700	.989	.870	.969	.873

Table 2. Summary (p-values) of effects of the mixed effect models for ERPs time-locked to the verb's (= semantic affiliate's) onset across all time-windows. Posterior Right is baseline for the factor ROI. AR = anterior right ROI, AL = anterior left ROI, PL = posterior left ROI, PR = posterior right ROI; * < .05, . < .01

Predictor	<i>Coefficient</i>	<i>SE</i>	<i>t-value</i>	<i>p</i>
Posterior Left				
Intercept	0.185	0.310	0.598	.55157
Gesture Match	1.057	0.364	2.902	.004 **
Discourse	0.768	0.358	2.147	.032 *
Gesture Match * Discourse	-1.257	0.506	-2.486	.013 *
Posterior Right				
Intercept	-0.110	0.327	-0.338	.737
Gesture Match	0.956	0.382	2.506	.014 *
Discourse	0.590	0.376	1.568	.118
Gesture Match * Discourse	-1.268	0.515	-2.463	.014 *
Centre				
Intercept	0.032	0.394	0.082	.935
Gesture Match	0.487	0.453	1.075	.283
Discourse	0.315	0.448	0.703	.703
Gesture Match * Discourse	-0.074	0.635	-0.117	.907
Anterior Left				
Intercept	0.511	0.423	1.209	.230
Gesture Match	0.322	0.441	0.730	.465
Discourse	0.084	0.435	0.192	.848
Gesture Match * Discourse	-0.403	0.616	-0.655	.513
Anterior Right				
Intercept	0.339	0.418	0.811	0.419
Gesture Match	0.322	0.446	0.722	0.471
Discourse	0.304	0.441	0.690	0.490
Gesture Match * Discourse	-0.404	0.623	-0.648	0.517

Table 3. Summary of the posthoc tests, i.e. fixed effects of the full mixed logistic model for the time-window 800-900 ms time-locked to the verb in the individual ROIs.

Predictor	<i>Coefficient</i>	<i>SE</i>	<i>t-value</i>	<i>p</i>
Posterior Left				
Intercept	0.275	0.315	0.874	.386
Gesture Match	0.581	0.384	1.512	.134
Discourse	0.386	0.375	1.031	.303
Gesture Match * Discourse	-0.575	0.523	-1.098	.272
Posterior Right				
Intercept	0.218	0.362	0.601	.550
Gesture Match	0.635	0.426	1.489	.141
Discourse	0.204	0.378	0.538	.590
Gesture Match * Discourse	-0.609	0.534	-1.140	.254
Centre				
Intercept	-0.197	0.464	-0.424	.673
Gesture Match	0.916	0.498	1.842	.069 .
Discourse	0.591	0.483	1.223	.223
Gesture Match * Discourse	-0.919	0.662	-1.388	.165
Anterior Left				
Intercept	0.384	0.449	0.856	.395
Gesture Match	0.488	0.474	1.028	.305
Discourse	0.053	0.457	0.115	.908
Gesture Match * Discourse	-0.605	0.647	-0.936	.349

Anterior Right				
Intercept	0.158	0.480	0.330	.743
Gesture Match	0.750	0.545	1.377	.172
Discourse	0.492	0.537	0.916	.362
Gesture Match * Discourse	-1.097	0.663	-1.655	.098

Table 4. Summary of the posthoc tests, i.e. fixed effects of the full mixed logistic model for the time-window 1000-1100 ms time-locked to the verb in the individual ROIs.