

The left ventral premotor cortex is involved in hand shaping for intransitive gestures: evidence from a two-person imitation experiment

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Supplementary tables

Table 1: Mean values and main effects for actor-imitator correlation

Significant p-values (<.0063) are in bold; SH: shoulder, EL: elbow, WR: wrist, TH: thumb, IN: index finger, MI: middle finger, RI: ring finger, LI: little finger.

Tracker	Mean(±SE) Z-value									Main effect														
	Site			Time			Meaning			Effector			Site			Time			Meaning			Effector		
	PMv	PMd	Vertex	Observation	Imitation	Meaningful	Meaningless	Hand	Finger	F (2, 22)	p	η²	F (1, 11)	p	η²	F (1, 11)	p	η²	F (1, 11)	p	η²			
SH	0.515 (0.0468)	0.443 (0.0573)	0.545 (0.0365)	0.503 (0.0417)	0.499 (0.0416)	0.422 (0.0427)	0.580 (0.0457)	0.683 (0.0499)	0.319 (0.0378)	3.18	.061	.224	0.065	.803	.006	22.9	<b>.001</b>	.675	119	<b>&lt;.001</b>	.915			
EL	1.01 (0.0671)	0.988 (0.0681)	0.944 (0.0590)	0.984 (0.0550)	1.01 (0.0534)	0.932 (0.0711)	1.06 (0.0460)	1.19 (0.0500)	0.804 (0.0630)	0.056	.946	.005	4.16	.066	.275	6.19	.030	.360	109	<b>&lt;.001</b>	.908			
WR	1.94 (0.0708)	1.92 (0.0675)	2.02 (0.0488)	1.95 (0.0617)	1.98 (0.0543)	2.02 (0.0666)	1.90 (0.0528)	2.00 (0.0708)	1.92 (0.0483)	2.31	.123	.174	4.80	.051	.304	10.8	.007	.496	5.02	.047	.313			
TH	1.64 (0.0584)	1.63 (0.0516)	1.64 (0.0376)	1.62 (0.0480)	1.64 (0.0455)	1.67 (0.0478)	1.60 (0.0470)	1.69 (0.0548)	1.58 (0.0421)	0.020	.980	.002	1.52	.244	.121	7.18	.021	.395	10.9	.007	.497			
IN	1.58 (0.0481)	1.57 (0.0450)	1.59 (0.0297)	1.57 (0.0353)	1.59 (0.0350)	1.62 (0.0369)	1.54 (0.0372)	1.70 (0.0434)	1.46 (0.0352)	0.061	.941	.005	1.01	.336	.084	9.02	.012	.451	37.5	<b>&lt;.001</b>	.773			
MI	1.63 (0.0507)	1.60 (0.0455)	1.64 (0.0399)	1.62 (0.0418)	1.63 (0.0383)	1.68 (0.0394)	1.56 (0.0443)	1.66 (0.0585)	1.59 (0.0296)	0.701	.507	.060	1.57	.237	.125	17.9	<b>.001</b>	.619	2.31	.156	.174			
RI	1.67 (0.0445)	1.68 (0.0444)	1.69 (0.0291)	1.68 (0.0352)	1.68 (0.0305)	1.73 (0.0312)	1.63 (0.0372)	1.73 (0.0464)	1.63 (0.0261)	0.120	.888	.011	0.454	.514	.040	16.8	<b>.002</b>	.605	7.98	.017	.420			
LI	1.71 (0.0471)	1.71 (0.0467)	1.73 (0.0315)	1.72 (0.0397)	1.72 (0.0324)	1.76 (0.0353)	1.68 (0.0393)	1.77 (0.0501)	1.67 (0.0256)	0.158	.855	.014	0.044	.838	.004	12.9	<b>.004</b>	.539	7.32	.020	.400			

Table 2: Two-way interactions for actor-imitator correlation

SH: shoulder, EL: elbow, WR: wrist, TH: thumb, IN: index finger, MI: middle finger, RI: ring finger, LI: little finger.

Tracker	Site*time			Site*meaning			Site*effector			Time*meaning			Time*effector			Meaning*effector			
	F (2, 22)	p	η²	F (2, 22)	p	η²	F (2, 22)	df	p	η²	F (1, 11)	p	η²	F (1, 11)	p	η²	F (1, 11)	p	η²
SH	0.234	.793	.021	0.410	.668	.036	1.27	2, 22	.302	.103	0.100	.757	.009	1.41	.260	.114	7.52	.019	.406
EL	1.16	.334	.095	0.454	.61	.040	2.55	2, 22	.101	.188	0.242	.633	.022	2.44	.147	.181	0.050	.828	.004
WR	0.270	.765	.024	0.488	.620	.042	1.02	2, 22	.376	.085	2.20	.101	.225	0.267	.615	.024	0.003	.955	<b>&lt;.001</b>
TH	0.827	.451	.070	0.501	.613	.044	0.078	1.30, 14.3	.846	.007	0.587	.260	.051	0.239	.635	.021	5.08	.046	.316
IN	0.852	.440	.072	1.23	.312	.101	0.047	2, 22	.892	.010	0.033	.858	.003	0.009	.924	.001	4.73	.052	.301
MI	0.872	.432	.073	1.67	.211	.132	0.166	2, 22	.848	.015	2.37	.152	.177	0.029	.867	.003	7.22	.021	.396
RI	1.35	.279	.110	3.16	.062	.223	0.183	2, 22	.834	.016	1.50	.246	.120	0.001	.981	<b>&lt;.001</b>	4.93	.048	.309
LI	2.74	.086	.200	3.06	.067	.218	0.383	2, 22	.687	.034	4.19	.065	.276	0.729	.411	.062	7.16	.022	.394

**Table 3: Three- and four-way interactions for actor-imitator correlation**

SH: shoulder, EL: elbow, WR: wrist, TH: thumb, IN: index finger, MI: middle finger, RI: ring finger, LI: little finger.

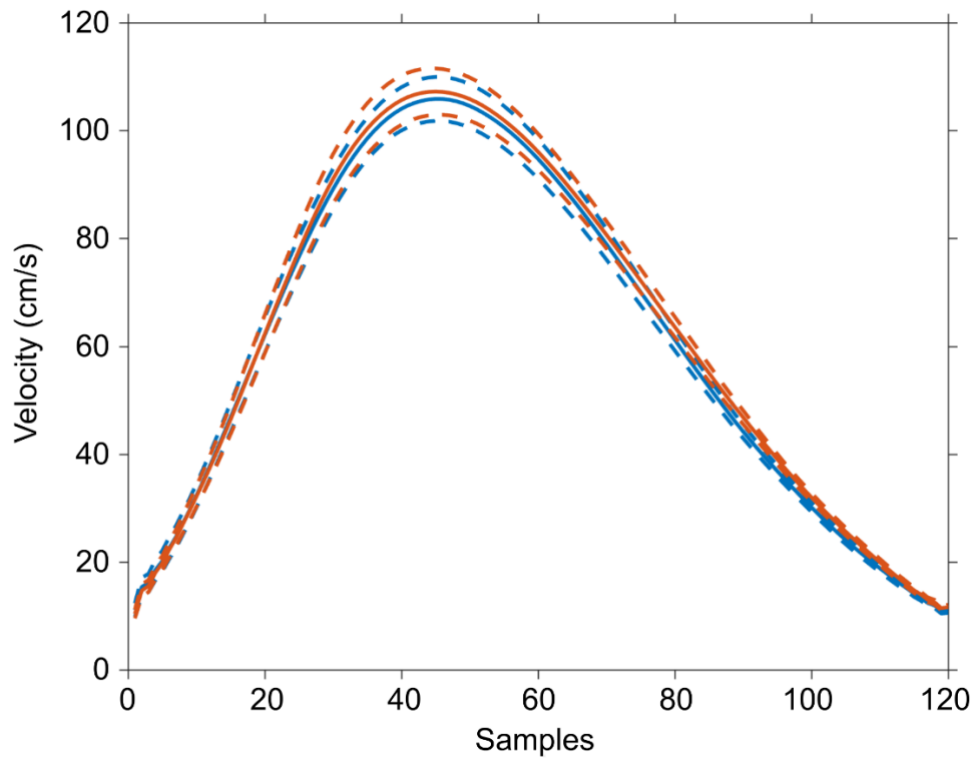
Tracker	Site*time*			Site*time*			Site*meaning*			Time*meaning*			Site*time*			
	meaning			effector			effector			effector			meaning*effector			
	F	df	p	$\eta^2$	F (2, 22)	p	$\eta^2$	F (2, 22)	p	$\eta^2$	F (1, 11)	p	$\eta^2$	F (2, 22)	p	$\eta^2$
SH	0.795	1.30, 14.3	.420	.067	0.446	.646	.039	1.66	.213	.131	2.42	.148	.180	0.266	.769	.024
EL	0.929	2, 22	.410	.078	0.036	.964	.181	0.391	.681	.034	0.326	.580	.029	1.37	.276	.110
WR	0.625	2, 22	.545	.054	0.657	.528	.056	1.02	.377	.085	1.44	.255	.116	0.692	.511	.059
TH	0.190	2, 22	.828	.017	0.823	.452	.070	0.048	.953	.004	2.20	.166	.167	1.96	.165	.151
IN	0.115	2, 22	.892	.010	0.680	.517	.058	0.697	.509	.060	6.86	.024	.384	2.58	.099	.190
MI	0.383	2, 22	.686	.034	0.408	.670	.036	0.198	.822	.018	0.588	.459	.051	1.28	.297	.104
RI	0.666	2, 22	.524	.057	0.762	.478	.065	0.191	.827	.017	2.34	.154	.176	1.49	.246	.120
LI	0.156	2, 22	.857	.014	1.05	.266	.087	0.074	.929	.007	0.142	.714	.013	2.19	.136	.166

**Table 4: Bonferroni-corrected paired t-tests for elbow site\*effector interaction**

Bonferroni-corrected alpha cutoff = .025.

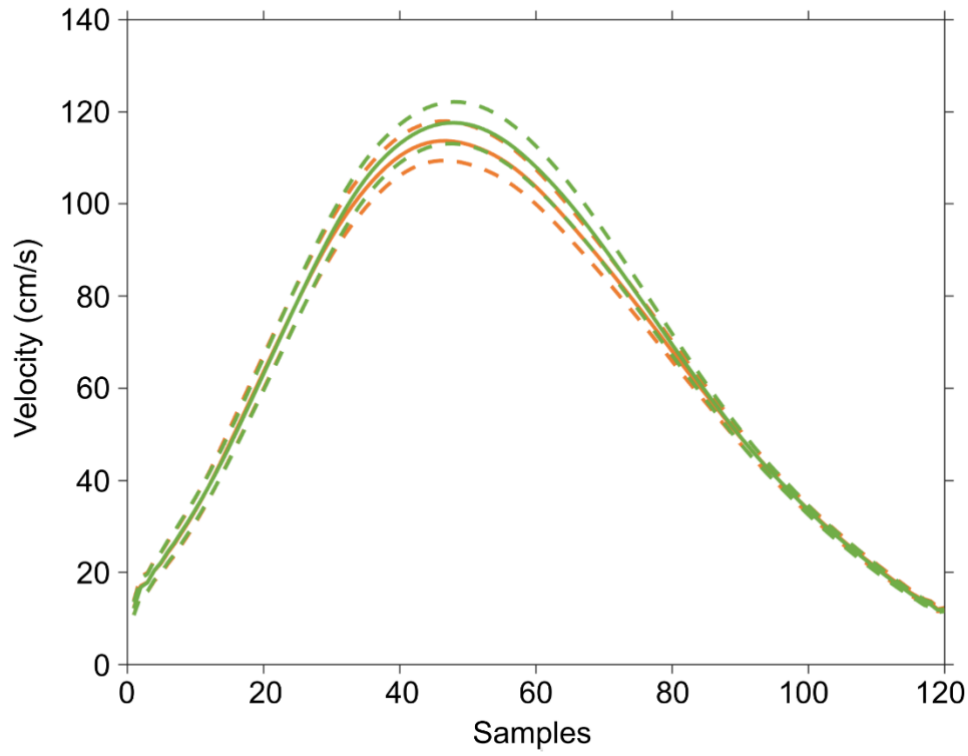
Variable	Mean( $\pm$ SE) values						Paired t-tests											
	Hand			Finger			Hand				Finger							
	PMv	PMd	Vertex	PMv	PMd	Vertex	PMv – Vertex		PMd – Vertex		PMv – PMd		PMv – Vertex		PMd – Vertex		PMv – PMd	
							t (11)	p	t (11)	p	t (11)	p	t (11)	p	t (11)	p	t (11)	p
PA (cm/s <sup>2</sup> )	236 (17.4)	229 (11.8)	224 (13.3)	159 (11.6)	167 (7.76)	157 (6.89)	1.03	.324	0.548	.595	0.868	.404	0.189	.853	1.523	.156	-1.10	.295
PV (cm/s)	47.2 (3.23)	44.0 (2.61)	45.4 (2.47)	25.2 (1.63)	26.2 (1.35)	26.0 (1.30)	0.704	.496	-0.845	.416	1.35	.205	-0.671	.516	0.140	.891	-0.721	.486
PD (cm/s <sup>2</sup> )	-181 (14.7)	-174 (10.3)	-177 (9.43)	-135 (11.6)	-140 (6.79)	-129 (4.72)	-0.442	.667	0.372	.717	-0.858	.409	-0.710	.492	-2.01	.070	0.633	.539

**Figure 1: Resampled mean velocity curve for the imitator thumb comparing PMv and PMd**



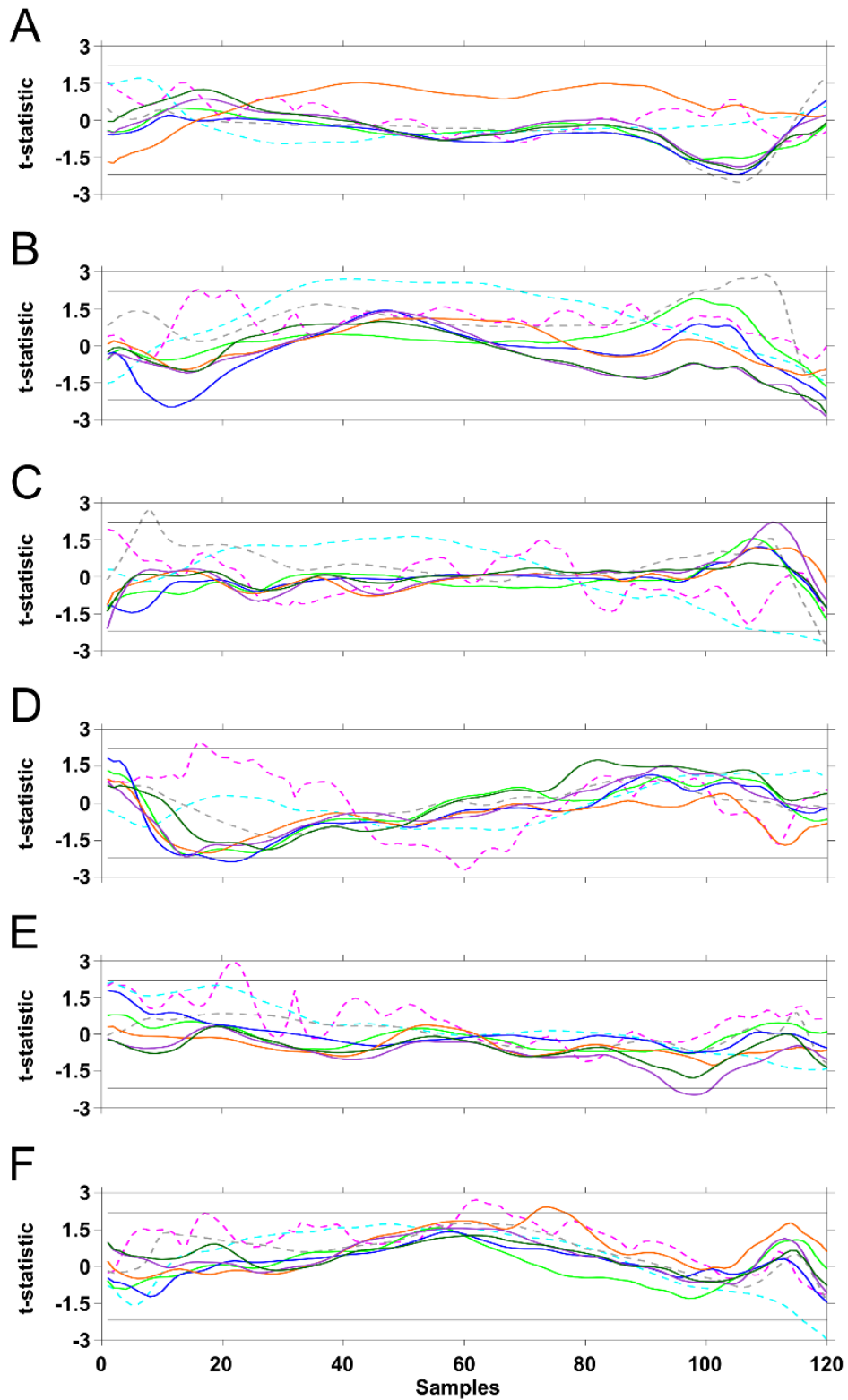
**Blue = PMv, red = PMd, Dashed lines = SE.**

**Figure 2: Resampled mean velocity curve for the imitator index finger comparing observation and imitation stimulation over the PMv**



**Orange = observation, green = imitation. Dashed lines = SE.**

**Figure 3: t-statistic plots for stimulation-site related interactions**



**A) site\*meaning B) site\*effector C) site\*time\*meaning D) site\*time\*effector E) site\*meaning\*effector F) site\*time\*meaning\*effector; Horizontal lines indicate positive and negative critical t-values; Dashed magenta = shoulder, dashed cyan = elbow, dashed grey = wrist, light green = thumb, blue = index finger, orange = middle finger, purple = ring finger, dark green = little finger.**