Supplementary Information

Table S1: Subject characteristics (Tracking and Force experiments / Lesion-anatomy study)

							3 groups		R vs L-weak	
	Controls		**R-hand weak†**		**L-hand weak†**		**Chi^2**	**p**	**Chi^2**	**P*[3]**
N	49		50		42					
Age / yrs	56 (45 - 70)		57 (45-65)		63 (55-69)		4.46	0.107	4.30	0.038
Males / %	59		62		69		0.99	0.610	0.50	0.480
Handedness (EHI)	90 (89 - 100)		100 (90 - 100)		100 (90 - 100)		3.18	0.204	0.52	0.470
NIHSS – overall /42	0		5 (3 - 6)*[1]		4 (3 - 5)*[1]		101	0.000	0.34	0.563
HADS – Depression /15	2 (2 -3)		3 (2 - 4)*[1]		3 (2 - 5)*[1]		12.3	0.002	0.12	0.731
HADS – Anxiety /15	2 (2 - 3)		3 (2 - 4)		3 (2 - 4)		0.19	0.908	0.01	0.911
Lesion volume /cc.	0		5.6 (2.6 – 14.3)*[1]		8.1 (3.8 – 20.1)*[1]		100	0.000	2.16	0.142
White Matter Score /3	1 (1 – 1)		1 (1 - 1)		1 (1 - 2)		2.33	0.312	1.73	0.188
Days from stroke onset	-		5 (4 – 7)		6 (4 – 8)		-	-	0.70	0.403
Arm specific tests:										
Hand use	Right	Left	Right	Left	Right	Left	pooling weak arms		R- vs L-weak arms	
NIHSS – arm motor /4 (0: normal)	0	0	2*[2] (1 - 2)	0	0	2*[2] (1 - 2)	91.9	0.000	0.19	0.663
Short Fugl Meyer arm function /12 (12: normal)	12	12	9*[2] (8 - 12)	12	12	8*[2] (7 - 10)	71.9	0.000	2.92	0.087
Grip force /% (100% ≡ ≥100N)	100 (99-100)	100 (99-100)	96*[2] (88-100)	100 (97-100)	99 (97-100)	93*[2] (70-99)	36.6	0.000	1.78	0.183

† "weak" here refers to clinically-apparent impairment in hand strength and/or dexterity. Note that patients can have impaired dexterity while having normal grip force in the same hand. Cited values are median (interquartile range). All tests non-parametric (Kruskal-Wallis, rank sum or chi2-tests where appropriate). *[1] $p<0.01$, all patients vs controls. *[2] $p<0.01$ paretic-arm vs equivalent arm in controls (e.g. L arm in L-hand weak group vs. L arm in controls). Comparisons of paretic arms of R- vs.L-weak*[3] were insignificant except age. N patients with lesions in attention-control regions and/or frontoparietal cortices but not CST/M1: 15. N patients with lesions where overlap of attention-control regions > overlap of CST/M1: 36.
EHI: Edinburgh Handedness Inventory; HADS: Hospital Anxiety-Depression Scale; NIHSS: National Institute Health Stroke Scale.

Table S2: Subject characteristics (Precision and Force experiments)

							3 groups		R vs L-weak	
	Controls		**R-hand weak†**		**L-hand weak†**		**Chi^2**	**p**	**Chi^2**	**P*[3]**
N	10		13		14					
Age / yrs	68 (52 - 74)		58 (50 - 70)		68 (49 - 82)		1.60	0.448	1.14	0.285
Males / %	60		85		57		2.68	0.262	2.44	0.118
Handedness (EHI)	90 (90 - 90)		90 (90 - 100)		90 (80 - 100)		1.71	0.426	0.04	0.836
NIHSS – overall /42	0		4 (3 - 5)		4 (4 - 5) *[1]		22.3	0.000	0.33	0.568
HADS – Depression /15	2 (1 - 3)		3 (2 - 6)		4 (2 - 5)*[1]		6.47	0.039	0.00	1.000
HADS – Anxiety /15	3 (2 - 4)		2 (2 - 5)		3 (2 - 4)		0.01	0.994	0.02	0.902
Lesion volume /cc.	0		3.0 (1.0 – 3.9)		4.2 (1.0 - 15)*[1]		22.9	0.000	1.99	0.158
White Matter Score /3	1 (1 - 2)		1 (1 - 2)		1 (1 - 2)		0.69	0.708	0.28	0.595
Days from stroke onset	-		4 (3 – 6)		5 (3 – 6)		-	-	0.04	0.844
Arm specific tests:										
Hand use	Right	Left	Right	Left	Right	Left	pooling weak arms		R- vs L-weak arms	
NIHSS – arm motor /4 (0: normal)	0	0	2*[2] (1 - 2)	0	0	1.5*[2] (1 - 2)	21.5	0.000	0.03	0.856
Short Fugl Meyer arm function /12 (12: normal)	12	12	9*[2] (9 - 11)	12	12	9*[2] (7 - 10)	21.0	0.000	0.62	0.430
Grip force /% (100% ≡ ≥100N)	100 (99-100)	99 (98-100)	87*[2] (76-99)	99 (82-100)	96 (94-99)	90*[2] (74-94)	16.7	0.000	0.04	0.846

† "weak" here refers to clinically-apparent impairment in hand strength and/or dexterity. Note that patients can have impaired dexterity while having normal grip force in the same hand. Cited values are median (interquartile range). All tests non-parametric (Kruskal-Wallis, rank sum or chi2-tests where appropriate). *1 $p<0.01$, all patients vs controls. *2 $p<0.01$ paretic-arm vs equivalent arm in controls (e.g. L arm in L-hand weak group vs. L arm in controls). Comparisons of paretic arms of R- vs.L-weak*3 were insignificant.

Table S3: Subject characteristics (Non-motor experiment)

							3 groups		R vs L-weak	
	Controls		**R-hand weak†**		**L-hand weak†**		**Chi^2**	**P**	**Chi^2**	**P*[3]**
N	11		13		12					
Age / yrs	63 (56 - 68)		58 (50 - 64)		63 (58 - 70)		1.51	0.471	1.64	0.200
Males / %	46		54		75		2.23	0.328	1.21	0.271
Handedness (EHI)	90 (83 - 100)		90 (88 - 100)		90 (80 - 100)		0.15	0.928	0.00	0.951
NIHSS – overall /42	0		5 (4 - 6)		5 (4 - 7) *[1]		23.2	0.000	0.00	0.956
HADS – Depression /15	2 (1 – 3)		2 (2 - 3)		2 (1 - 5)		1.31	0.521	0.01	0.911
HADS – Anxiety /15	3 (2 - 3)		2 (2 - 3)		3 (1 - 4)		1.34	0.511	0.11	0.736
Lesion volume /cc.	0		3.9 (1.1 – 16)		14 (6 - 31)*[1]		24.1	0.000	2.32	0.128
White Matter Score /3	1 (1 - 1)		1 (1 - 1)		1 (1 - 2)		3.23	0.199	3.08	0.079
Days from stroke onset	-		6 (4 – 7)		7 (5 – 8)		-	-	0.44	0.509
Arm specific tests:										
Hand use	Right	Left	Right	Left	Right	Left	pooling weak arms		R- vs L-weak arms	
NIHSS – arm motor /4 (0: normal)	0	0	2*[2] (1 - 3)	0	0	2*[2] (2 - 3)	24.0	0.000	0.05	0.816
Short Fugl Meyer arm function /12 (12: normal)	12	12	8*[2] (6.8 - 10)	12	12	7.5*[2] (7 – 9.5)	17.3	0.000	0.40	0.527
Grip force /% (100% ≡ ≥100N)	100 (98-100)	100 (97-100)	92 (75-98)	99 (92-100)	97 (89-100)	83*[2] (72-95)	12.2	0.002	0.50	0.479

† "weak" here refers to clinically-apparent impairment in hand strength and/or dexterity. Note that patients can have impaired dexterity while having normal grip force in the same hand. Cited values are median (interquartile range). All tests non-parametric (Kruskal-Wallis, rank sum or chi2-tests where appropriate). *1 $p<0.01$, all patients vs controls. *2 $p<0.01$ paretic-arm vs equivalent arm in controls (e.g. L arm in L-hand weak group vs. L arm in controls). Comparisons of paretic arms of R- vs.L-weak*3 were insignificant.

Table S4: Subject characteristics (Resting-state FMRI experiment)

							3 groups		R vs L-weak	
	Controls		**R-hand weak†**		**L-hand weak†**		**Chi^2**	**P**	**Chi^2**	**P*[3]**
N	23		12		11					
Age / yrs	60 (50 - 62)		61 (46 - 70)		64 (56 - 75)		3.18	0.204	1.03	0.309
Males / %	57		75		82		2.60	0.273	0.16	0.692
Handedness (EHI)	100 (90 - 100)		90 (80 - 90)		100 (80 - 100)		5.39	0.068	0.70	0.404
NIHSS – overall /42	0		3 (2 - 6)		6 (4 - 9) *[1]		39.6	0.000	3.13	0.077
HADS – Depression /15	2 (1 – 5)		5 (1 - 8)		4 (2 - 8)		1.95	0.376	0.28	0.598
HADS – Anxiety /15	2 (1 - 5)		6 (1 - 9)		4 (2 - 8)		1.70	0.427	0.25	0.621
Lesion volume /cc.	0		2.8 (1.2 – 6.4)		8.5 (3.6 - 31)*[1]		39.6	0.000	3.64	0.056
White Matter Score /3	1 (1 - 1)		1 (0 - 1)		1 (1 - 2)		4.61	0.100	3.52	0.061
Days from stroke onset	-		7 (6 – 8)		7 (6 – 8)		-	-	0.04	0.851
Arm specific tests:										
Hand use	Right	Left	Right	Left	Right	Left	pooling weak arms		R- vs L-weak arms	
NIHSS – arm motor /4 (0: normal)	0	0	1*[2] (1 - 2)	0	0	2*[2] (2 - 3)	30.7	0.000	2.45	0.118
Short Fugl Meyer arm function /12 (12: normal)	12	12	11*[2] (9 - 12)	12	12	9*[2] (6 – 11)	30.3	0.000	1.90	0.168
Grip force /% (100% ≡ ≥100N)	100 (98-100)	100 (97-100)	97*[2] (90-98)	100 (99-100)	95 (76-100)	86*[2] (71-95)	19.2	0.000	3.42	0.069

† "weak" here refers to clinically-apparent impairment in hand strength and/or dexterity. Note that patients can have impaired dexterity while having normal grip force in the same hand. Cited values are median (interquartile range). All tests non-parametric (Kruskal-Wallis, rank sum or chi2-tests where appropriate). *1 $p<0.01$, all patients vs controls. *2 $p<0.01$ paretic-arm vs equivalent arm in controls (e.g. L arm in L-hand weak group vs. L arm in controls). Comparisons of paretic arms of R- vs.L-weak*3 were insignificant. Lesions in higher cortical regions (i.e. other than primary sensorimotor cortex): N = 8 (R-hand weak); 8 (L-hand weak). Lesions whose volume is ≥50% within corticospinal tract / M-1: N = 7 (R-hand weak); 4 (L-hand weak). N patients with lesions in attention-control regions and/or frontoparietal cortices but not CST/M1: 3. N patients with lesions where overlap of attention-control regions > overlap of CST/M1: 8.

Table S5: Undistracted performance

Task	**Tracking (slow)**			**Precision**			**Force**		
Subject group	Controls	R-weak	L-weak	Controls	R-weak	L-weak	Controls	R-weak	L-weak
N	49	50	42	10	11	14	59	61	56
Age	56	57	63	68	58	68	56	57	64
Median difference: Controls: R vs L Patients: paretic vs nonparetic	5.5% p<0.01	4.3% p=0.015	11% p<0.001	2.8% p=0.11	9.8% p=0.023	12% p<0.01	0.00 p=0.11	A*: 1.3% P<0.001	A: 5.4% p<0.001
								B*: 18% p<0.05	B: 29% p<0.001
Correlation (r^2) R vs L**	0.52 p<0.001	0.76 p<0.001	0.71 p<0.001	0.09 p=0.41	0.58 p<0.01	0.82 p<0.001	0.69 p<0.001	A: 0.23 p<0.001	A: 0.41 p<0.001
Group differences: controls vs. patients R hand use	-	19% p<0.001	22% p<0.001	-	23% P<0.01	28% p<0.001	-	A: 4.0% p<0.001	A: 1.8% P<0.001
								B: 38% p<0.001	B: 3.6% p<0.001
L hand use	-	9.4% p=0.014	31% p<0.001	-	4.9% p=0.19	47% p<0.001	-	A: 0.75% p=0.054	A: 8.4% p<0.001
								B: 19% P<0.01	B: 37% p<0.001

All statistical tests are non-parametric: difference: sign test; correlation: Spearman's rank; group-differences: rank sum.
* A: all patients; B: patients with grip force <75% in either hand (n=8, 16 for R- and L-weak, respectively).
** Task-differences in R-L correlation coefficients were seen for Tracking vs Force (Z=3.9; p<0.001) and Precision vs Force (Z=2.5, p=0.01). Differences in y-intercept for equivalent linear regressions were seen for Tracking vs Force and Precision vs Force (t>5; p<0.001).
Paretic-hand Force (or controls' left hand) correlated with Nonparetic (or controls' right-) hand Tracking, or Precision: $r \geq 0.3$; $p \leq 0.01$.

Table S6: Effect of distractors

A: ANOVAs assessing effect of distractors on accuracy, and interaction with hand-used, task-speed, and group		
Task	**Tracking**	**Precision**
Raw-accuracy* - distractors 0,1,3 (tracking) - distractors 0,3 (precision)	Factors: Distractors, Hand-use, Speed, Group Distractors: F(2,276) = 427, p<0.001 - linear contrast: F(1,138) = 660, p<0.001 Group x Distractors: F(4,276) = 7.5, p<0.001 - linear contrast: F(2,138) =11.5, p<0.001 Group x Distractors x Hand-Use: F(4,276)=2.70, p=0.024, due to Distraction greater for *Nonparetic*-hand in R-weak and L-weak patients (see Fig. 2A) Group x Distractor x Speed: F(4,276)=1.16, p=0.30, 4-way interaction: F(4,828)=2.47, p=0.056	Factors: Distractors, Hand-use, Group Distractors: F(2,34) = 46.6, p<0.001 Group x Distractors: F(2,34)=1.0, p=0.38 Group x Distractors x Hand-Use: F(2,34)=2.9, p=0.071, due to Distraction greater for *Nonparetic*-hand in R-weak and L-weak patients (see Fig. 2A).
Normalized interference = (Distractor 0 - 3) / Distractor 0	Factors: Hand-use, Speed, Group Group: F(2,138) = 34.6, p<0.001 Group x Hand-Use (F(2,138)=1.34; p=0.26), Group x Speed (F(2,138)=0.69; p=0.50), 3-way interaction (F(2,138)=1.71; p=0.18)	Factors: Hand-use, Group Group: F(1,35) =6.6, p=0.013 Group x Hand-Use: F(1,35)=0.7, p=0.41
Normalized interference: Task comparison	Factors: Hand-Use, Group, Task (Tracking vs Precision) Task: F(1,172)=0.58, p=0.448; Hand-Use: F(1,172)=0, p=1.0; Task x Hand-Use: F(1,172)=0.09, p=0.76; Task x Group: F(2,172)=0.12, p=0.88; Task x Group x Hand-Use: F(2,172)=1.07, p=0.347	
Significance ascertained by non-parametric ANOVA (permutation test). *Only Distractor effects reported.		

B: Correlations of interference with undistracted performance: bilateral (1 or 2) or unilateral (3) components						
Task	**Tracking (slow)**		**Precision**		**Force†**	
	r^2	p	r^2	P	r^2	P
(1a) Nonparetic-hand interference vs.	0.39	<0.001	0.26	<0.01	A: 0.21	<0.001

Paretic-hand performance					B: 0.17	<0.001
(1b) Nonparetic-hand interference vs. Nonparetic-hand performance	0.36	<0.001	0.41	<0.001	A: 0.17	<0.001
					B: 0.14	<0.001
(1a) partialling out lesion volume, Mood	0.26	<0.001	0.17	0.013	A: 0.09	<0.001
					B: 0.08	<0.001
(1b) partialling out lesion volume, Mood	0.21	<0.001	0.33	<0.001	A: 0.09	<0.001
					B: 0.08	<0.001
(2) Nonparetic -hand interference vs. [Nonparetic - Paretic performance] partialling out lesion volume, mood	0.04**	0.013	0.01*	0.67	A: 0.01**	0.156
					B: 0.02**	0.099

All correlations use Spearman's test. † Correlation of Force with Tracking or Precisioninterference. A: average; B: best of 4 trials.
** Comparison of r between Nonparetic / interference correlation (1) vs. [Nonparetic-Paretic] / interference correlation (2) : $p<0.001$, *<0.01
All comparisons of r's between (1a) vs. (1b) are non-significant ($p>0.1$).
Interference/performance r's decreased in order: Tracking> Precision> Force (Tracking > Force: $Z = 1.8$; $p=0.074$; others contrasts: n.s.).
All comparisons of r between groups (Controls, patients) are non-significant ($p>0.05$), except L-weak vs R-weak for Tracking (r= -0.12 versus -0.69; $p<0.01$). This may be accounted for by the observation (see main report) that poorer performance is associated with higher interference variability, given that L-weak were worse at Tracking than R-weak in their paretic hand (difference: 18%; $p<0.01$; corrected for lesion volume).
Fatigue and pain self-rating scores showed no correlations ($p>0.1$) with conflict or performance in either hand (n=46).

C: Correlations of non-motor (working-memory) interference with undistracted motor performance

Task	**Tracking (slow)**		**Precision**		**Force**	
	r^2	P	r^2	P	r^2	P
(1a) Paretic-hand performance	0.54	<0.001	-	-	0.34	<0.001
(1b) Nonparetic-hand performance	0.48	<0.001	-	-	0.24	<0.01
(1a) corrected for lesion size, mood	0.37	<0.001	-	-	0.13	0.040
(1b) corrected for lesion size, mood	0.32	<0.001	-	-	0.14	0.032

N.B. Non-motor r values are all numerically greater (albeit not significantly different; $p>0.1$) than the equivalent correlations that use interference values from motor-Tracking.

Figure S7: Voxelwise permutation rank-order (Brunner-Munzel) test

Values of the two motor, and one interference, measures were each tested for associations with lesion locations using the Brunner-Munzel rank-order test. Voxels surpassing significant permutation thresholds ($p<0.05$ FWE) for each association are shown below. Associations with Nonparetic hand Tracking and Nonparetic – Paretic hand Force showed no significant voxels. Lesions from left hemisphere are flipped onto the right hemisphere to increase power.

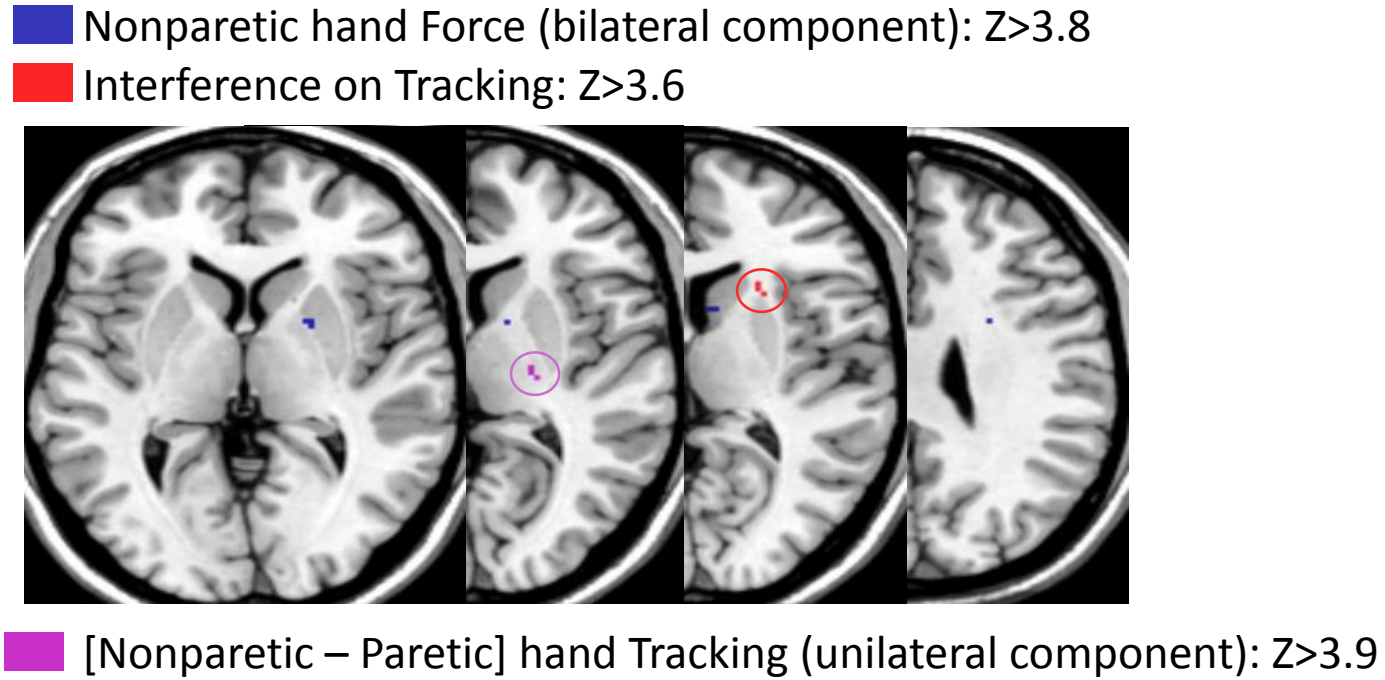


Table S8: Correlations of motor and attentional performance with ROI lesion overlap

A: Corticospinal tract – primary motor cortex				
Task: Hand used	Uncorrected		Corrected (lesion vol.)	
	r^2	P	r^2	P
Tracking: Nonparetic-hand	0.014	0.257	0.004	0.577
Tracking: Hand-difference	**0.276**	**0.000**	**0.245**	**0.000**
Grip: Nonparetic-hand	0.000	0.837	0.020	0.186
Grip: Hand-difference	**0.107**	**0.001**	**0.097**	**0.003**
Tracking Interference: Nonparetic-hand	0.021	0.163	0.003	0.605
B: Attention-control (cingulo-opercular) network*				
Tracking: Nonparetic-hand	**0.280**	**0.000**	**0.258**	**0.001**
Tracking: Hand-difference	0.087	0.004	0.047	0.038
Grip: Nonparetic-hand	**0.190**	**0.000**	**0.096**	**0.003**
Grip: Hand-difference	0.021	0.173	0.011	0.332
Tracking Interference: Nonparetic-hand	**0.271**	**0.000**	**0.187**	**0.000**
C: Left fronto-parietal-temporal network				
Tracking: Nonparetic-hand	0.008	0.536	0.002	0.791
Tracking: Hand-difference	0.139	0.008	0.067	0.072
Grip: Nonparetic-hand	0.030	0.228	0.012	0.445
Grip: Hand-difference	0.033	0.207	0.017	0.365
Tracking Interference: Nonparetic-hand	0.016	0.382	0.002	0.790
D: Right fronto-parietal network				
Tracking: Nonparetic-hand	0.000	0.928	0.020	0.378
Tracking: Hand-difference	0.013	0.481	0.000	0.861
Grip: Nonparetic-hand	0.024	0.326	0.000	0.899
Grip: Hand-difference	0.003	0.744	0.003	0.751
Tracking Interference: Nonparetic-hand	0.167	0.007	0.066	0.106
E: Callosal fibres				
Tracking: Nonparetic-hand	0.021	0.165	0.002	0.669
Tracking: Hand-difference	0.069	0.011	0.034	0.078
Grip: Nonparetic-hand	0.012	0.293	0.006	0.463
Grip: Hand-difference	0.013	0.270	0.006	0.483
Tracking Interference: Nonparetic-hand	0.050	0.032	0.006	0.480

*Comparisons of r between R vs L-weak patients for all performance measures was non-significant except Interference, corrected, for which R-weak (L-sided lesions) correlation was greater than L-weak (R-sided lesions) ($Z=2.39$, $p=0.017$).

Table S9. Cross-correlations of Motor Performance with Resting-state network integrity

r^2 value (+/- indicates sign of r)	**Pooling Controls and Patients** Corrected for age		
Resting-state network integrity	Tracking (Paretic or R arm)	Force (Paretic or R arm)	Force Difference
Primary sensorimotor	(+) 0.121†	**(+) 0.199***	**(-) 0.317****
Cingulo-opercular	**(+) 0.162***	(+) 0.121†	(-) 0.040
R dorsal frontoparietal ('visuo-spatial')	(+) 0.081†	(+) 0.067	(-) 0.112†
Default-mode	(+) 0.128†	(+) 0.121†	(-) 0.101†
Visual (medial & lateral)	(+) 0.006	(+) 0.000	(-) 0.009
L fronto-temporal-parietal ('praxis')	(+) 0.024	(+) 0.108†	(-) 0.051
Auditory	(+) 0.020	(+) 0.000	(-) 0.047
Cerebellum-brainstem	(+) 0.012	(+) 0.023	(-) 0.048

r^2 value (+/- indicates sign of r)	**Patients only** Corrected for lesion volume, age		
Resting-state network integrity	Tracking (Paretic)	Force (Paretic)	Force Difference
Primary sensorimotor	(+) **0.331***	(+) **0.430****	(-) **0.536****
Cingulo-opercular	(+) 0.228†	(+) 0.188†	(-) 0.061
R dorsal frontoparietal ('visuo-spatial')	(+) 0.046	(+) 0.002	(-) 0.009
Default-mode	(+) 0.026	(+) 0.090	(-) 0.082
Visual (medial & lateral)	(+) 0.003	(+) 0.000	(+) 0.001
L fronto-temporal-parietal ('praxis')	(+) 0.023	(+) 0.120	(-) 0.009
Auditory	(+) 0.022	(-) 0.000	(-) 0.061
Cerebellum-brainstem	(-) 0.005	(-) 0.034	(+) 0.015

** $p<0.01$. * $p<0.05$, Bonferroni corrected. † $p<0.05$ uncorrected for multiple comparisons.

Table S10. Cross-correlation of Anatomical ROI with Resting-state network integrity

r^2 value (+/- indicates sign of r)	**Anatomical ROI lesion overlap**				
Resting-state network integrity	CST-M1	Attention-control	L fronto-parietal-temporal	R fronto-parietal	Callosal
Primary sensorimotor	(-) **0.510****	(-) 0.121	(-) 0.014	(-) 0.016	(-) 0.252†
Cingulo-opercular	(-) 0.166	(-) **0.388***	(-) 0.119	(-) 0.107	(-) 0.099
R dorsal frontoparietal ('visuo-spatial')	(-) 0.064	(-) 0.033	(-) 0.000	(-) 0.000	(-) 0.043
Default-mode	(-) 0.000	(-) 0.096	(-) 0.003	(-) 0.000	(-) 0.054
Visual (medial & lateral)	(+) 0.006	(-) 0.018	(-) 0.016	(-) 0.009	(+) 0.041
L fronto-temporal-parietal ('praxis')	(-) 0.022	(-) 0.002	(-) 0.005	(-) 0.004	(-) 0.096
Auditory	(-) 0.060	(-) 0.012	(-) 0.008	(-) 0.000	(-) 0.056
Cerebellum-brainstem	(+) 0.107	(-) 0.032	(-) 0.008	(-) 0.008	(+) 0.001

** $p<0.01$. * $p<0.05$, Bonferroni corrected. † $p<0.05$ uncorrected for multiple comparisons.

Table S11: Patient List (for lesion-anatomy and fMRI studies)

Age	Sex	Lesion location	Lesion vol (cc)	Handed-ness (EHI /100)	Short Fugl-Meyer Upper Limb (/12)	NIHSS	Test interval from stroke onset (days)
Lesion-anatomy study (Tracking and Force experiments)							
45	M	R corona radiata (mid)	7.58	70	7	5	7
53	M	R caudate, striatocapsular, thalamus, corona radiata (mid)	26.38	100	9	6	5
69	M	R posterior thalamus, capsule, corona radiata (mid, posterior)	9.03	100	10	4	9
66	F	R striatocapsular, thalamus	1.91	80	9	3	6
79	F	R precentral gyrus	2.66	100	10	2	4
66	M	R inferior frontal	6.22	70	10	6	8
90	M	R parietal	14.94	100	11	3	9
55	F	R medial, superior frontal	8.62	100	7	4	4
47	F	R hemipons	1.16	100	6	4	5
55	M	R corona radiata (mid), thalamus, caudate, capsule	28.01	80	10	6	7
76	M	R frontoparietal	39.50	90	8	7	13
70	M	R capsule, prefrontal	4.30	100	12	4	2
66	M	R corona radiata (posterior)	2.94	100	9	3	1
75	M	R frontal operculum	3.38	100	7	2	2
75	F	R corona radiata (posterior, mid)	5.72	100	8	4	10
68	M	R corona radiata (anterior, mid), striatocapsular, frontoparietal	20.09	80	7	4	3
65	M	R insula, striatocapsular	12.94	100	6	5	2
49	M	R corona radiata (whole), striatocapsular	42.60	100	9	5	7
60	F	R corona radiata (mid), striatocapsular	11.72	100	9	5	8
29	M	R thalamus	1.38	100	7	4	8
67	M	R parietal	4.39	100	8	3	2
61	M	R corona radiata (mid)	4.21	100	12	3	9
64	F	R frontoparietal	25.00	100	12	4	5
58	M	R thalamus, capsule	10.71	100	7	8	3
82	M	R prefrontal, striatocapsular	31.21	80	5	7	6
70	F	R striatocapsular	20.43	100	6	4	12
30	M	R corona radiata (mid, anterior)	9.15	100	12	3	4
85	M	R prefrontal, caudate	3.94	100	8	5	6
21	M	R parietal	3.82	100	9	3	2
55	F	R corona radiata (mid)	2.49	70	8	4	8
75	M	R thalamus, hippocampus, cerebellum	5.61	100	7	4	8
63	F	R frontoparietal	14.68	100	8	4	9
72	M	R hemipons, midbrain	4.70	100	11	3	5
65	M	R frontoparietal, striatocapsular	29.99	100	8	6	8

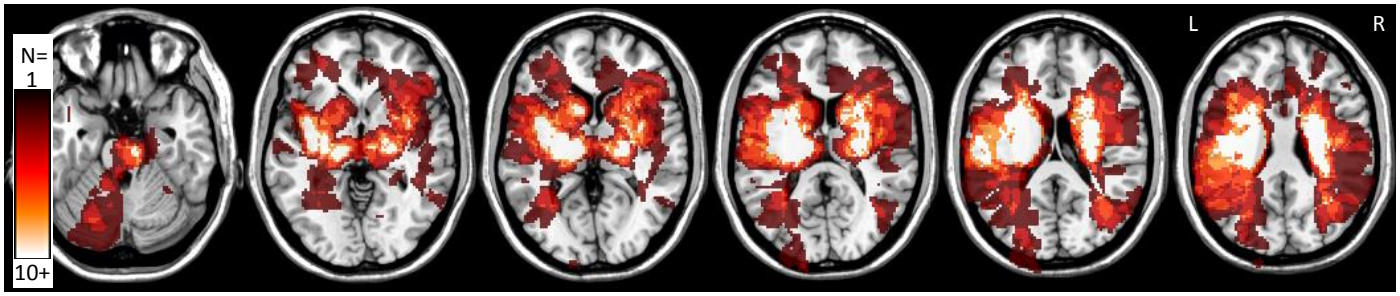
55	M	R hemipons	0.65	90	9	4	8
58	M	R frontoparietal	46.59	80	7	7	6
64	M	R striatocapsular, insula, corona radiata (whole)	37.94	80	10	3	5
59	F	R pulvinar, parietal	2.44	90	12	2	11
55	M	R hemipons	3.23	100	9	6	10
57	M	R cingulate, caudate, striatocapsular	15.22	80	5	10	8
85	F	R frontoparietal	12.82	100	7	5	1
51	F	R corona radiata (mid, posterior)	5.79	100	8	5	2
61	M	L striatocapsular, corona radiata (mid)	5.54	100	8	5	6
70	M	L striatocapsular, parietal	6.94	70	11	4	4
60	M	L prefrontal	13.00	100	12	5	8
65	M	L capsule, thalamus, hippocampal	11.03	100	12	6	8
65	M	L thalamus	2.94	100	6	3	10
56	M	L hemipons	5.32	100	11	4	3
29	M	L frontoparietal, operculum, striatocapsular	26.62	100	12	3	4
61	F	L parietal, corona radiata (mid)	2.23	100	6	4	5
40	M	L corona radiata (posterior), thalamus, hippocampus	2.72	95	12	5	5
76	F	L corona radiata (anterior), superior prefrontal, anterior cingulate	43.53	100	12	4	4
69	F	L thalamus	3.42	90	12	4	4
58	M	L corona radiata (mid), striatum	2.10	100	7	4	4
51	F	L insula, striatocapsular, corona radiata (posterior, mid), parietal	56.90	100	8	6	12
38	M	L hemipons, cerebellar	0.66	70	12	4	3
57	M	L corona radiata (mid, anterior)	2.96	100	8	4	5
65	M	L thalamus	1.98	100	11	5	7
75	M	L striatocapsular, corona radiata (mid)	14.68	90	7	6	7
77	M	L hemipons	1.24	100	8	3	5
39	M	L corona radiata (mid, anterior), prefrontal	7.39	100	9	3	2
42	M	L corona radiata (mid), striatum	2.02	80	8	6	6
80	F	L capsule	5.03	100	8	5	4
47	F	L thalamus	1.12	100	5	5	8
63	M	L thalamus, capsule	3.94	90	6	5	8
40	M	L striatum	3.84	100	12	4	11
74	M	L thalamus, occipital	2.70	80	9	6	9
59	F	L hippocampus, occipital	2.16	70	12	3	7
58	F	L frontoparietal	2.62	100	11	3	7
42	F	L corona radiata (anterior), cingulate, prefrontal	20.56	100	6	7	14
63	M	L insula	0.96	90	12	5	2
59	M	L frontoparietal	44.12	100	9	6	7
46	M	L corona radiata (whole), frontoparietal	93.16	100	7	7	4
36	F	L thalamus, hemipons	7.97	90	8	6	3

66	F	L striatocapsular, corona radiata (whole), frontoparietal	58.17	80	7	7	5
40	M	L prefrontal, striatum	3.29	90	9	6	2
69	M	L striatum, corona radiata (posterior)	7.67	100	10	2	7
44	M	L corona radiata (posterior), thalamus	5.58	100	12	2	4
36	F	L striatocapsular, corona radiata (mid, posterior)	42.26	100	5	8	6
56	M	L temporal	9.62	90	11	1	7
86	F	L parietal	0.89	100	8	4	2
44	F	L hemipons, medulla	8.29	100	12	3	3
49	M	L corona radiata (mid, posterior), parietal	39.29	90	10	6	3
57	M	L thalamus, capsule, prefrontal	6.55	80	9	3	2
53	M	L thalamus	5.58	70	10	5	4
40	M	L insula	1.97	90	11	2	7
57	F	L frontoparietal	6.94	90	10	2	2
53	M	L thalamus	0.84	100	10	4	9
65	M	L precentral, occipital	15.45	100	12	4	1
50	F	L cerebellum, hemipons	22.00	80	7	7	12
52	F	L prefrontal	6.99	80	8	6	8
64	M	L striatocapsular, thalamus	15.97	100	8	7	7
Functional MRI study							
64	M	R corona radiata (mid)	3.59	60	12	2	5
64	M	R capsule, thalamus	1.27	80	11	3	7
67	M	R capsule, thalamus, temporal	5.97	90	11	2	6
53	M	R corona radiata (anterior)	1.45	100	7	6	7
26	M	R cerebral peduncle	0.96	90	11	3	7
71	F	R corona radiata (mid)	1.22	100	10	6	6
40	M	R capsule, prefrontal	2.10	100	11	2	8
53	M	R capsule, corona radiata (mid)	1.70	80	9	6	7
45	M	R prefrontal	14.10	90	3	8	10
65	M	R corona radiata (anterior), prefrontal	16.47	80	9	8	5
73	F	R hemipons, cerebellum, hippocampus	6.81	90	12	2	11
61	M	R hemipons, medulla, cerebellum	22.00	90	11	3	8
79	M	L temporoparietal, insula	109.54	60	2	13	9
62	M	L striatocapsular, thalamus, midbrain, hemipons	34.21	100	5	12	12
76	M	L frontoparietal	13.57	60	8	9	6
45	M	L capsule	1.25	100	4	3	5
82	M	L striatocapsular, thalamus	6.62	90	11	4	7
60	F	L striatocapsular, temporal	13.50	90	2	8	5
73	M	L corona radiata (mid)	0.82	100	12	2	8
59	M	L capsule, corona radiata (mid, posterior)	17.88	100	8	3	7
47	F	L capsule	1.10	80	12	1	6

55	M	L striatal, corona radiata (mid), insula	14.16	100	11	7	8
77	F	L corona radiata (mid)	2.56	80	10	4	8

Figure S12: Lesion atlas (unflipped)

Lesion-anatomy study



Functional MRI study