

**Cell, Volume 181**

**Supplemental Information**

**Hand Knob Area of Premotor**

**Cortex Represents the Whole Body**

**in a Compositional Way**

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**Supplemental Table 1. List of data collection sessions.** Related to STAR Methods section “Session Structure and Cued Movement Tasks”.

Participant	Date (Post-Implant Day)	Description	Figure / Video
T5	10.22.2018 (796)	Cued face, head, arm & leg movements. 32 trials per movement.	Fig 1A-D SFig 1,2,3
T7	08.23.2013 (24)	Cued face, head, arm & leg movements. 18 trials per movement.	Fig 1A, C, D SFig 1,2,3
T5	12.05.2018 (840)	Cued ipsilateral & contralateral arm and leg movements. 30 trials per movement.	Fig 2, 3, 4A-B, SFig 5
T5	11.19.2018 (824)	Cued ipsilateral & contralateral arm and leg movements, focusing on homologous pairs. 20 trials per movement.	Fig 4C, SFig 5
T5	12.10.2018 (845)	Partially cued movements (laterality). 32 trials per movement condition.	Fig 4D, SFig 6
T5	03.27.2019 (952)	Partially cued movements (arm vs. leg). 31 trials per movement condition.	Fig 4E, SFig 6
T5	02.13.2019 (910)	Four effectors, radial 8 movements (hands and feet). 24 trials per target.	SFig 4B-D
T5	12.05.2018 (840)	Four effectors, radial 6 movements [arms and legs]. 26 trials per target.	SFig 4E
T5	03.19.2018 (579)	Simultaneous movement with the following effector pairs: (R-Arm, L-Arm), (R-Arm, Head), (R-Arm, L-Leg), (R-Leg, L-Leg). 18 trials per movement condition.	Fig 5
T5	03.21.2018 (581)	Simultaneous movement with the following effector pair: (R-Arm, R-Leg). 18 trials per movement condition.	Fig 5
T5	04.02.2018 (593)	Simultaneous movement with the following effector pairs: (R-Leg, Head), (L-Leg, Head), (L-Arm, Head), (R-Leg, L-Arm), (L-Arm, L-Leg). 18 trials per movement condition.	Fig 5
T5	11.05.2018 (810)	Single-effector radial target layouts with different numbers of targets. 540 trials per layout.	Fig 6B
T5	01.07.2019 (873)	16-target layouts with 1 effector, 2 effectors, or 4 effectors. 355 trials per layout.	Fig 6C-E
T5	09.19.2018 (763)	Closed-loop discrete decoding with a four-effector layout (900 trials per layout)	Fig 6F-G, SVid 1
T5	09.26.2018 (770)	Closed-loop discrete decoding with a two-effector layout	Fig 6F
T5	10.01.2018 (775)	Closed-loop discrete decoding with a one-effector layout and 32-target layout	Fig 6F, SVid 2
T5	10.03.2018 (777)	Closed-loop discrete decoding with a four-effector layout and one-effector layout	Fig 6F
T5	10.08.2018 (782)	Closed-loop discrete decoding with a two-effector layout and 32-target layout	Fig 6F
T5	10.10.2018 (784)	Closed-loop discrete decoding with a four-effector layout and one-effector layout	Fig 6F
T5	10.15.2018 (789)	Closed-loop discrete decoding with a two-effector layout and 32-target layout	Fig 6F

**Supplemental Table 2: Motor power & reflex exam results for T5 and T7.** Related to STAR Methods section “Experimental Model and Subject Details”.

Motor Power Key: (0=Nothing, 1=Muscle Twitch but no Joint Movement, 2=Some Joint Movement, 3=Overcomes Gravity, 4=Overcomes Some Resistance, 5=Overcomes Full Resistance).

Reflex Testing Key: (0=Areflexive, 1=Hyporeflexive, 2=Normal, 3=Brisk, 4=Clonus).

<b>Muscle Group</b>	T5 Left (Ipsi.)	T5 Right (Contra.)	T7 Left (Ipsi.)	T7 Right (Contra.)
Cervical Flexion	5		4	
Cervical Extension	5		4	
Cervical Sidebend	5	5	4	4
Cervical Rotation	5	5	4	4
Hip Flexion	2	1	4	4
Hip Extension	2	1	4	4
Hip Abduction	1	2	4	4
Hip Adduction	1	1	4	4
Knee Flexion	2	2	4	4
Knee Extension	2	2	4	5
Ankle Dorsiflexion	0	1	3	4
Ankle Plantarflexion	1	2	4	4
Shoulder Flexion	3	1	2	2
Shoulder Extension	3	2	2	Not tested due to positioning
Shoulder Internal Rotation	2	0	2	3
Shoulder External Rotation	2	2	1	1
Elbow Flexion	5	0	2	2
Elbow Extension	1	1	2	3
Wrist Flexion	0	0	2	3
Wrist Extension	1	2	1	3
Finger Flexion	0	0	2	4
Finger Extension	3	2	1-3	2-3
<b>Reflex</b>	T5 Left (Ipsi.)	T5 Right (Contra.)	T7 Left (Ipsi.)	T7 Right (Contra.)
Biceps	3	3	2	2
Brachioradialis	3	3	2	2
Triceps	3	3	1	0
Patella	3	3	3	3
Achilles	0	0	4	4