

Supplementary Material

Supplementary Table 1. List of included articulatory trajectories.

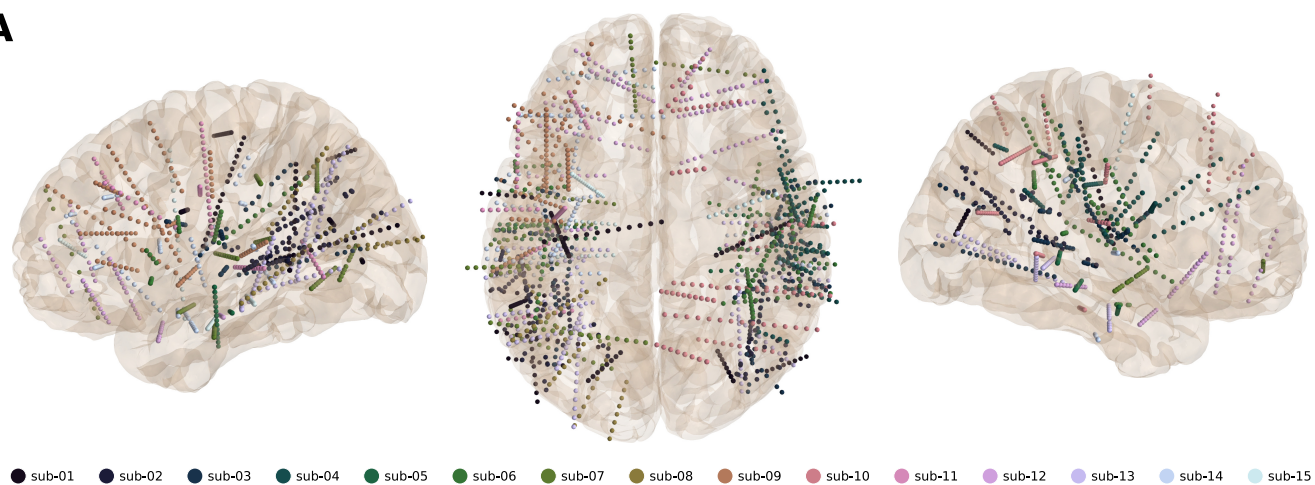
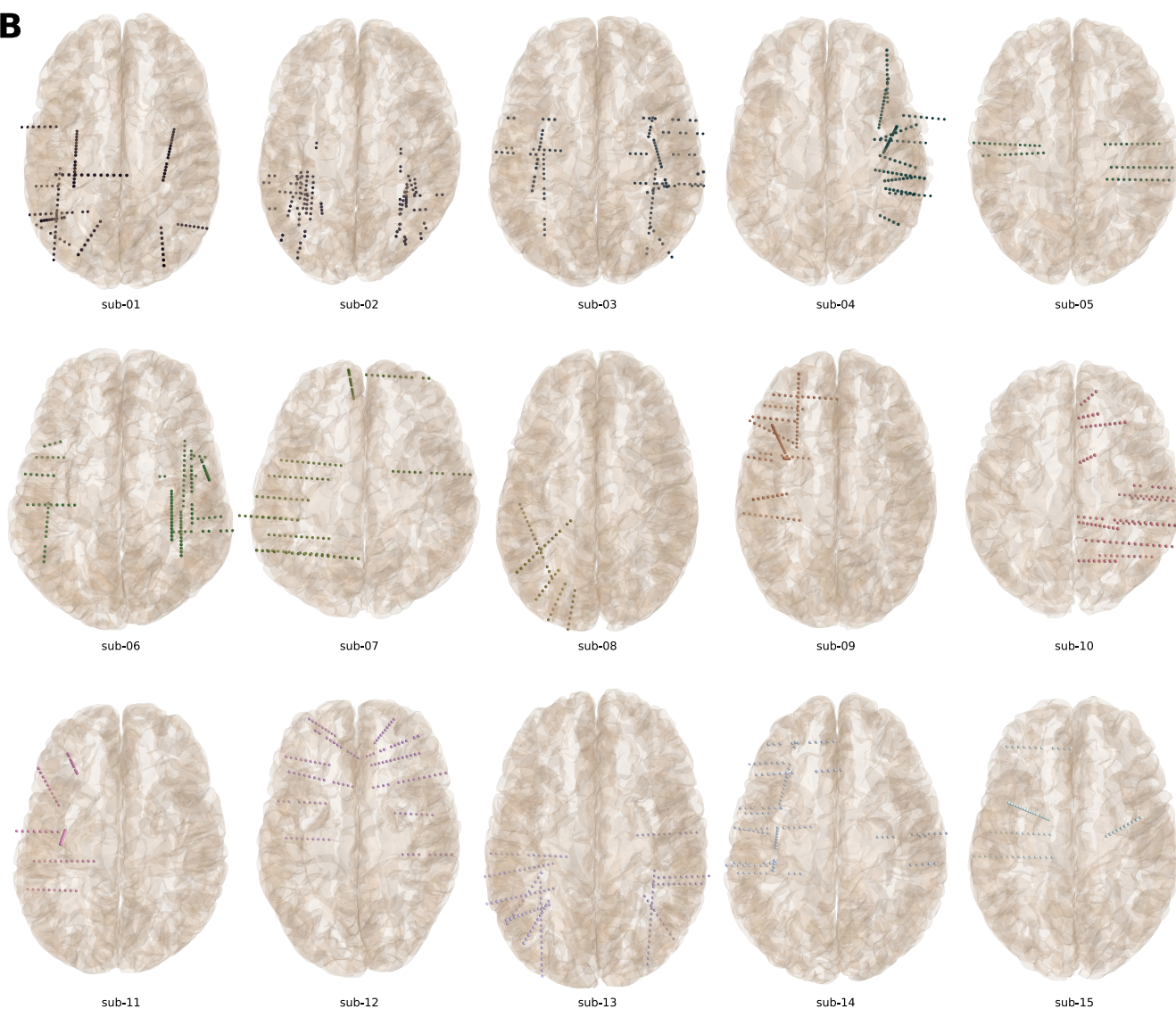
Acronym	Articulator
P_sub	Subglottal pressure
X_top	Vocal fold upper displacement
chink_area	Chink area
rel_amp	Relative amplitude
HX	Horizontal hyoid position
HY	Vertical hyoid position
JX	Jaw position
JY	Jaw angle
LP	Lip protrusion
LD	Vertical lip distance
VS	Velum shape
VO	Velum opening
TCX	Horizontal tongue body center position
TCY	Vertical tongue body center position
TTX	Horizontal tongue tip position
TTY	Vertical tongue tip position
TBX	Horizontal tongue blade position
TBY	Vertical tongue blade position
TS1	Tongue side elevation (posterior)
TS2	Tongue side elevation (middle)
TS3	Tongue side elevation (anterior)

Supplementary Table 2. Discarded articulatory word trials for each participant and the reason for exclusion (not spoken or failed trajectory estimation).

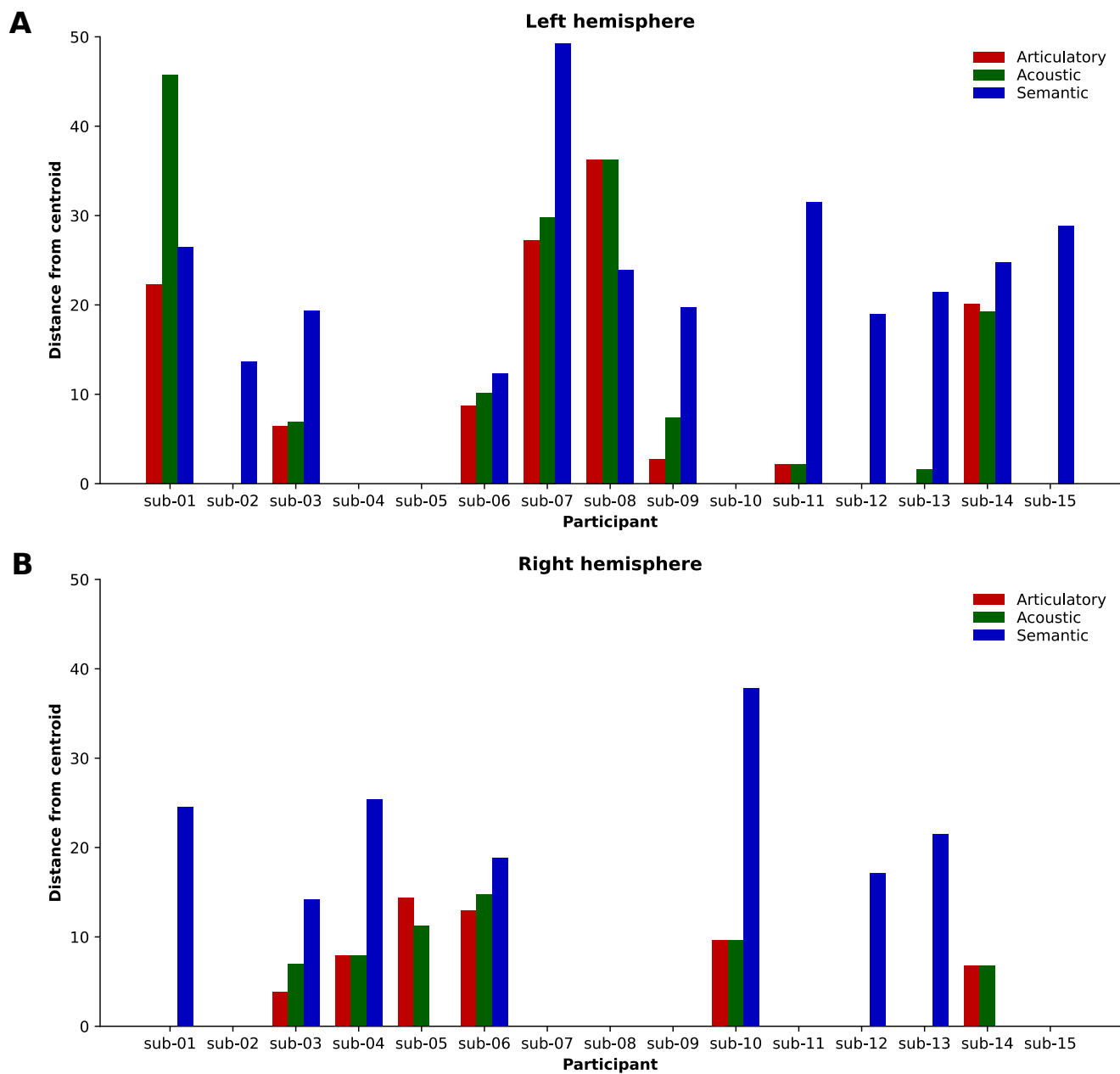
Participant	Not spoken	Failed trajectory estimation
sub-01		'teruggekregeen'
sub-02		
sub-03		'vogeltje', 'zanddak'
sub-04		'over', 'stilstaan'
sub-05		'zonlicht', 'maar', 'struik'
sub-06		'helemaal', 'tuwiet'
sub-07	'zanddak'	'bloedrode'
sub-08		'bloedrode', 'onmiddellijk', 'redetwisten', 'vogelkooitje'
sub-09		'bloedrode'
sub-10		'daarna'
sub-11		'sterkste'
sub-12	'geen'	
sub-13		
sub-14	'redetwisten'	
sub-15		'meisjes', 's morgens'

Supplementary Table 3. Included Destrieux/Fischl atlas labels per region-of-interest. The same labels were applied to both hemispheres.

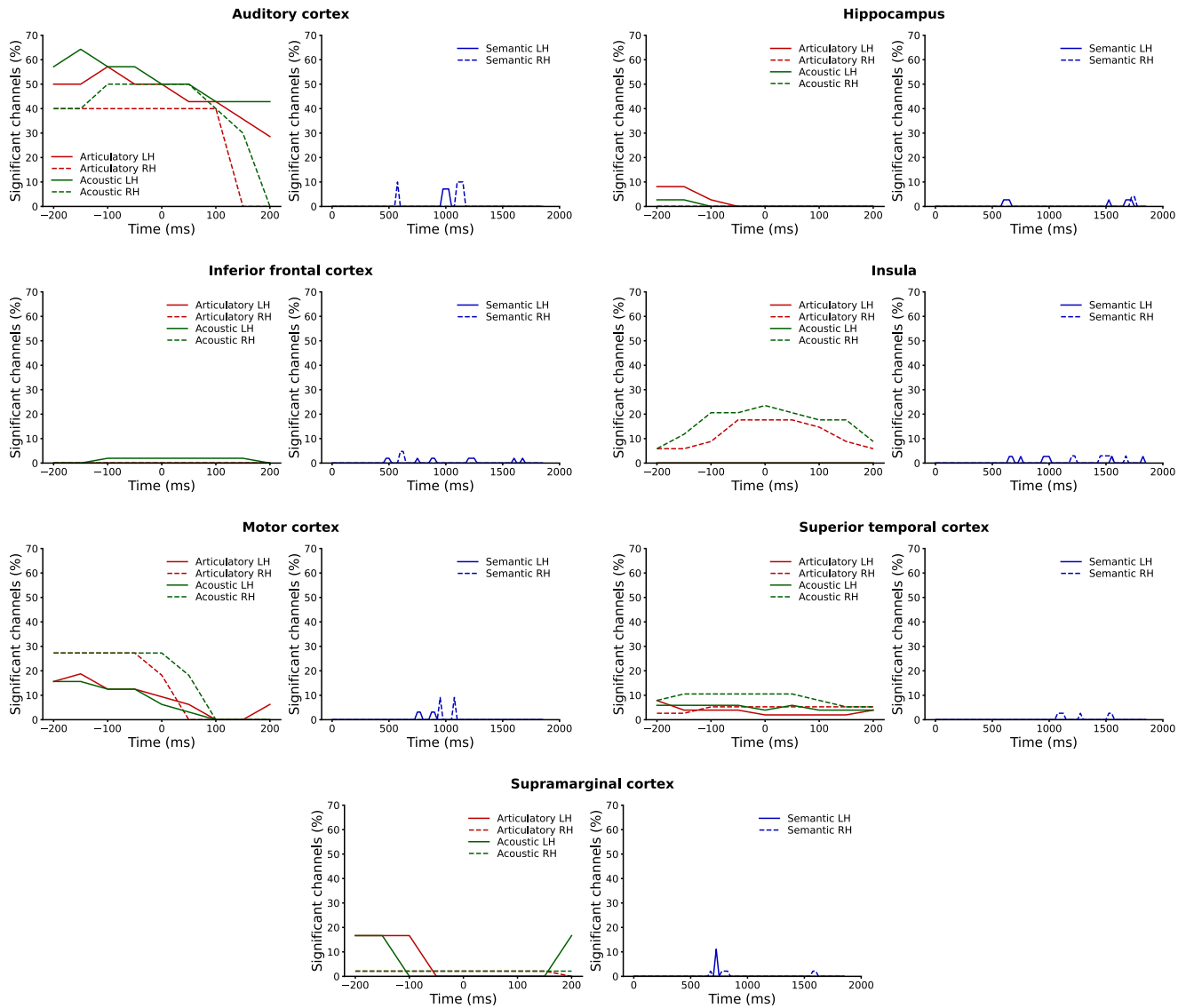
Region-of-interest	Labels
Auditory cortex	'S_temporal_transverse', 'G_temp_sup-G_T_transv', 'G_temp_sup-Plan_tempo'
Inferior frontal cortex	'G_front_inf-Opercular', 'G_front_inf-Orbital', 'G_front_inf-Triangul', 'G_orbital', 'S_orbital-H_Shaped', 'S_suborbital', 'S_front_inf', 'S_orbital_lateral', 'Lat_Fis-ant-Vertical', 'Lat_Fis-ant-Horizont'
Motor cortex	'S_central', 'G_and_S_subcentral', 'G_precentral', 'S_precentral-inf-part'
Superior temporal cortex	'G_temp_sup-Lateral', 'S_temporal_sup', 'G_temp_sup-Plan_polar'
Supramarginal cortex	'G_pariet_inf-Supramar', 'Lat_Fis-post'
Insula	'S_circular_insula_inf', 'S_circular_insula_sup', 'G_insular_short', 'G_Ins_lg_and_S_cent_ins'
Hippocampus	'Hipp'

A**B**

Supplementary Figure 1. Electrode locations. **A** Electrode locations within the MNI averaged brain using MNI coordinates from individual participants. These locations correspond to those in the main figures. Colors represent the individual participants. **B** Electrode locations within an axial view of each individual participant's native brain.



Supplementary Figure 2. Distribution between representations within individuals. The distribution is calculated using the mean Euclidean distance between each significant channel and their centroid for each representation within individuals. **A)** Distances within the left hemisphere. **B)** Distances within the right hemisphere.



Supplementary Figure 3. Temporal dynamics for all seven regions-of-interest. The percentage of significant channels within each region for each timeframe or timepoint is plotted to facilitate comparisons.