Table S1: Re-evaluation of the performance of the NSR system (see table 5) including any silence time points that were not part of the inter-stimulus silence periods that preceded and followed each stimulus. The resulting posteriogram and confusion accuracies are provided along with the differences in mean accuracies when compared to the original performance evaluation results. Accuracies are given in percentages (mean ± standard deviation) and accuracy changes are given in percentage points. Phoneme error rates were not re-computed because that metric uses compressed sequences that exclude silences and did not differ from the values computed in the original evaluation.

| Feature set | | Results | | | | | | | |
| | | Estimation | | | | Decoding | | | |
Feature type	Subject(s)	Posteriogram accuracy (%)	Accuracy change (pp)	Confusion accuracy (%)	Accuracy change (pp)	Posteriogram accuracy (%)	Accuracy change (pp)	Confusion accuracy (%)	Accuracy change (pp)
Chance	-	6.44 ± 9.68	-0.62	2.56 ± 15.81	-0.07	6.44 ± 9.68	-0.62	2.56 ± 15.81	-0.07
MFCC	-	45.41 ± 13.09	$+4.96$	36.15 ± 18.89	$+1.64$	46.87 ± 17.90	$+5.00$	37.86 ± 14.40	$+1.56$
Single-trial HGS	A	18.09 ± 13.11	$+6.35$	$+9.98 \pm 17.34$	$+2.31$	17.76 ± 14.61	$+5.97$	13.57 ± 15.01	$+2.08$
	B	14.55 ± 11.94	$+6.83$	$+7.11 \pm 15.13$	$+2.32$	15.29 ± 13.66	$+5.06$	11.34 ± 11.86	$+1.71$
	C	15.82 ± 12.16	$+6.82$	$+7.16 \pm 16.17$	$+2.35$	16.68 ± 14.55	$+5.98$	10.21 ± 14.06	$+2.05$
Single-trial HGW	A	21.61 ± 13.49	$+5.99$	14.92 ± 16.64	$+2.16$	20.73 ± 14.93	$+5.66$	16.86 ± 15.07	$+1.97$
	B	19.05 ± 12.57	$+6.36$	11.74 ± 14.58	$+2.17$	17.86 ± 13.93	$+5.15$	13.52 ± 12.17	$+1.73$
	C	19.42 ± 12.91	$+6.49$	10.35 ± 16.13	$+2.26$	18.50 ± 14.84	$+5.89$	11.86 ± 13.97	$+2.02$
Averaged HGS	A	21.81 ± 13.78	$+7.12$	13.04 ± 17.37	$+2.22$	20.85 ± 15.73	$+6.82$	16.12 ± 15.58	$+2.05$
	B	19.19 ± 12.64	$+7.25$	10.44 ± 15.34	$+2.23$	19.49 ± 14.23	$+5.98$	14.40 ± 13.24	$+1.81$
	C	19.59 ± 12.68	$+7.37$	9.37 ± 16.71	$+2.30$	19.13 ± 14.71	$+6.72$	12.06 ± 14.23	$+2.06$
	All	28.85 ± 13.36	$+6.51$	20.16 ± 16.21	$+2.03$	29.55 ± 16.31	$+6.15$	23.26 ± 14.66	$+1.88$
Averaged HGW	A	25.60 ± 14.35	$+6.68$	18.54 ± 16.69	$+2.06$	25.20 ± 15.73	$+6.41$	20.41 ± 15.59	$+1.92$
	B	24.08 ± 13.02	$+6.73$	15.86 ± 14.62	$+2.06$	23.56 ± 15.39	$+5.92$	17.10 ± 13.04	$+1.79$
	C	23.42 ± 13.44	$+7.01$	13.39 ± 16.00	$+2.18$	21.90 ± 15.93	$+6.54$	14.29 ± 14.75	$+2.02$
	All	34.31 ± 13.15	$+5.95$	25.87 ± 15.77	$+1.86$	34.93 ± 16.65	$+5.67$	26.80 ± 15.18	$+1.77$

Table S2: Re-evaluation of the performance of the NSR system (see table 5) including all silence time points. The resulting posteriogram and confusion accuracies are provided along with the differences in mean accuracies when compared to the original performance evaluation results. Accuracies are given in percentages (mean ± standard deviation) and accuracy changes are given in percentage points. Phoneme error rates were not re-computed because that metric uses compressed sequences that exclude silences and did not differ from the values computed in the original evaluation.

		Results							
Feature set		Estimation				Decoding			
Feature type	Subject(s)	Posteriogram accuracy (%)	Accuracy change (pp)	Confusion accuracy (%)	Accuracy change (pp)	Posteriogram accuracy (%)	Accuracy change (pp)	Confusion accuracy (%)	Accuracy change (pp)
Chance	-	3.03 ± 3.37	-4.03	2.56 ± 15.81	-0.07	3.03 ± 3.37	-4.03	2.56 ± 15.81	-0.07
MFCC	-	74.41 ± 10.48	$+33.96$	36.16 ± 18.91	$+1.65$	74.32 ± 12.14	$+32.44$	37.87 ± 14.47	$+1.58$
Single-trial HGS	A	61.67 ± 13.81	$+49.92$	9.97 ± 17.32	$+2.30$	59.08 ± 13.86	$+47.30$	13.57 ± 14.99	$+2.07$
	B	58.80 ± 14.94	$+51.08$	7.12 ± 15.19	$+2.33$	51.75 ± 14.76	$+41.52$	11.39 ± 12.13	$+1.76$
	C	59.87 ± 14.98	$+50.87$	7.16 ± 16.19	$+2.36$	57.80 ± 15.21	$+47.10$	10.24 ± 14.21	$+2.08$
Single-trial HGW	A	61.87 ± 13.08	$+46.25$	14.92 ± 16.64	$+2.16$	59.37 ± 13.37	$+44.31$	16.87 ± 15.10	$+1.98$
	B	59.60 ± 14.18	$+46.91$	11.76 ± 14.69	$+2.19$	54.04 ± 14.62	$+41.33$	13.59 ± 12.51	$+1.79$
	C	60.65 ± 14.35	$+47.72$	10.35 ± 16.16	$+2.27$	57.91 ± 14.66	$+45.30$	11.88 ± 14.10	$+2.05$
Averaged HGS	A	62.19 ± 14.06	$+47.51$	13.04 ± 17.40	$+2.23$	60.65 ± 14.11	$+46.63$	16.14 ± 15.66	$+2.06$
	B	59.98 ± 14.95	$+48.03$	10.45 ± 15.42	$+2.24$	56.62 ± 14.81	$+43.11$	14.45 ± 13.51	$+1.86$
	C	60.53 ± 15.10	$+48.32$	9.38 ± 16.75	$+2.30$	58.80 ± 15.13	$+46.39$	12.09 ± 14.38	$+2.08$
	All	65.19 ± 13.29	$+42.86$	20.17 ± 16.25	$+2.03$	64.81 ± 13.42	$+41.40$	23.28 ± 14.73	$+1.89$
Averaged HGW	A	62.49 ± 13.22	$+43.56$	18.55 ± 16.72	$+2.06$	61.19 ± 13.44	$+42.39$	20.43 ± 15.67	$+1.94$
	B	61.08 ± 14.09	$+43.73$	15.88 ± 14.72	$+2.08$	58.42 ± 14.56	$+40.79$	17.15 ± 13.32	$+1.85$
	C	61.49 ± 14.45	$+45.07$	13.39 ± 16.04	$+2.19$	59.45 ± 14.56	$+44.09$	14.31 ± 14.85	$+2.04$
	All	66.57 ± 12.26	$+38.21$	25.88 ± 15.81	$+1.87$	66.30 ± 12.79	$+37.04$	26.82 ± 15.26	$+1.79$

Figure S1: The confusion matrices for the HGW evaluations along with comparisons to the confusion matrices from the MFCC evaluation. Each sub-figure (a-g) contains results for a single HGW evaluation. For each HGW evaluation, the estimation and decoding confusion matrices are given in the top row, and the difference matrices obtained by subtracting each of these matrices with the corresponding confusion matrix using MFCC results are given in the bottom row. The confusion matrices for the MFCC results are provided in figure 7.
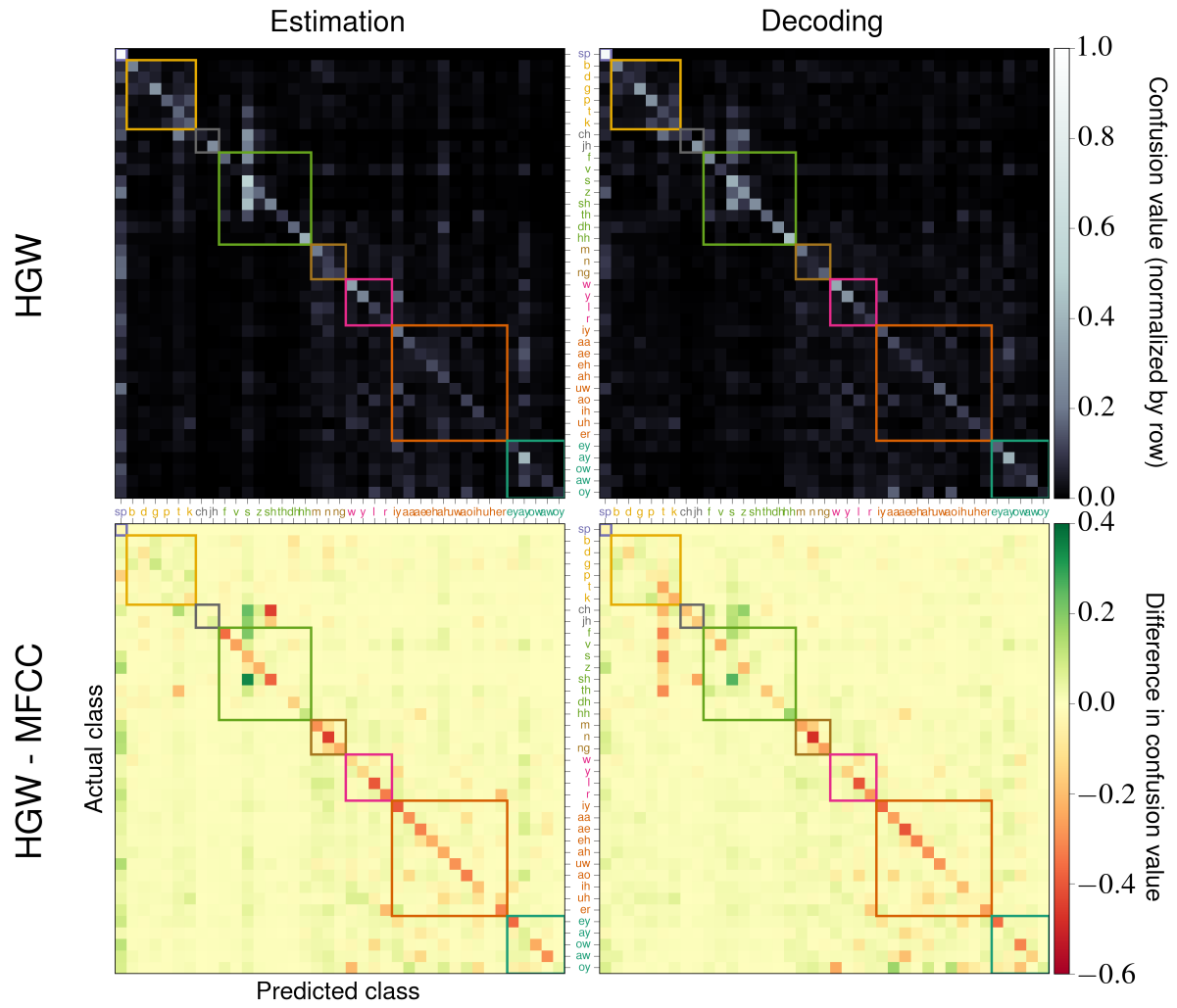

(a) Subject A - Single-trial HGW
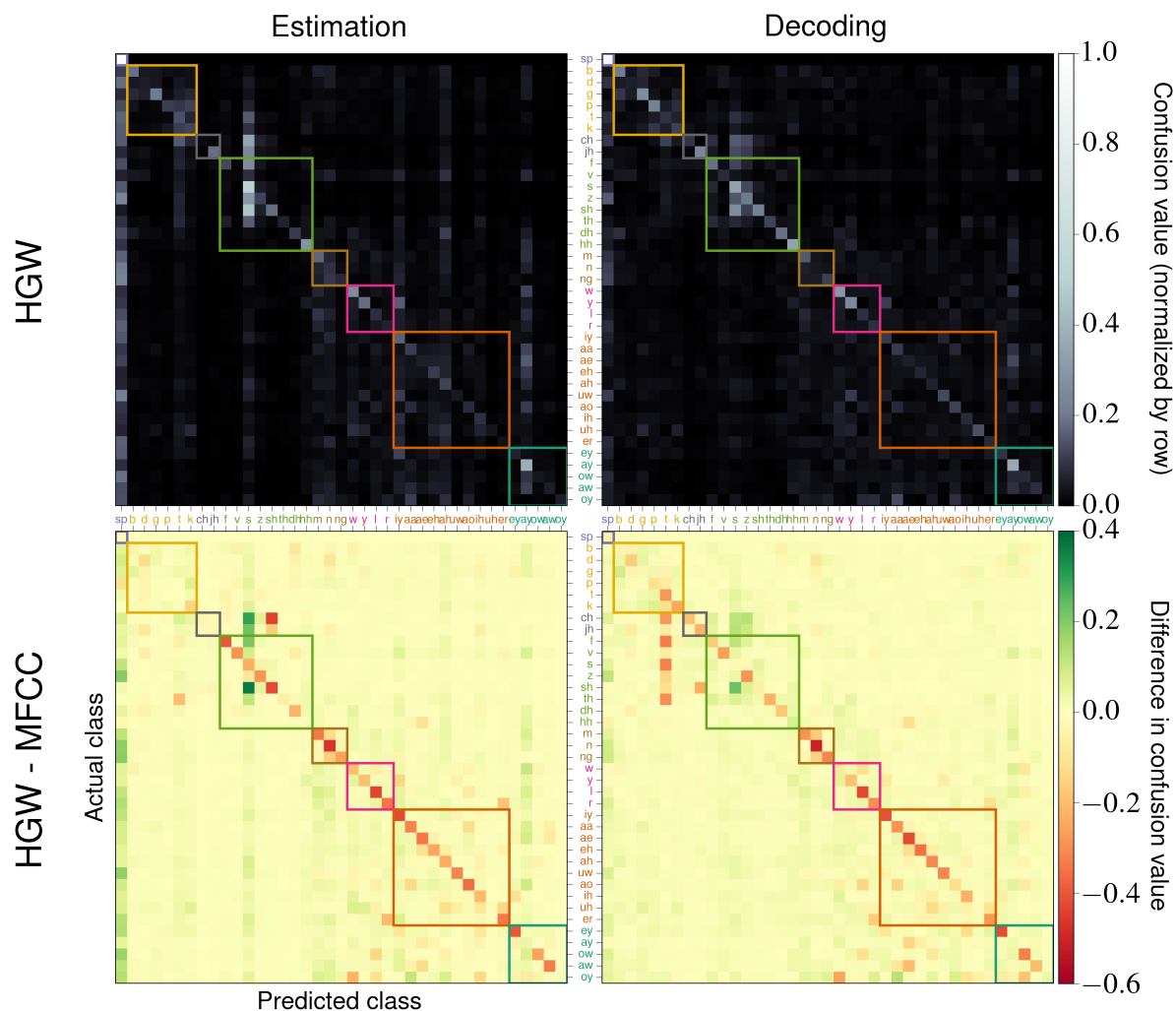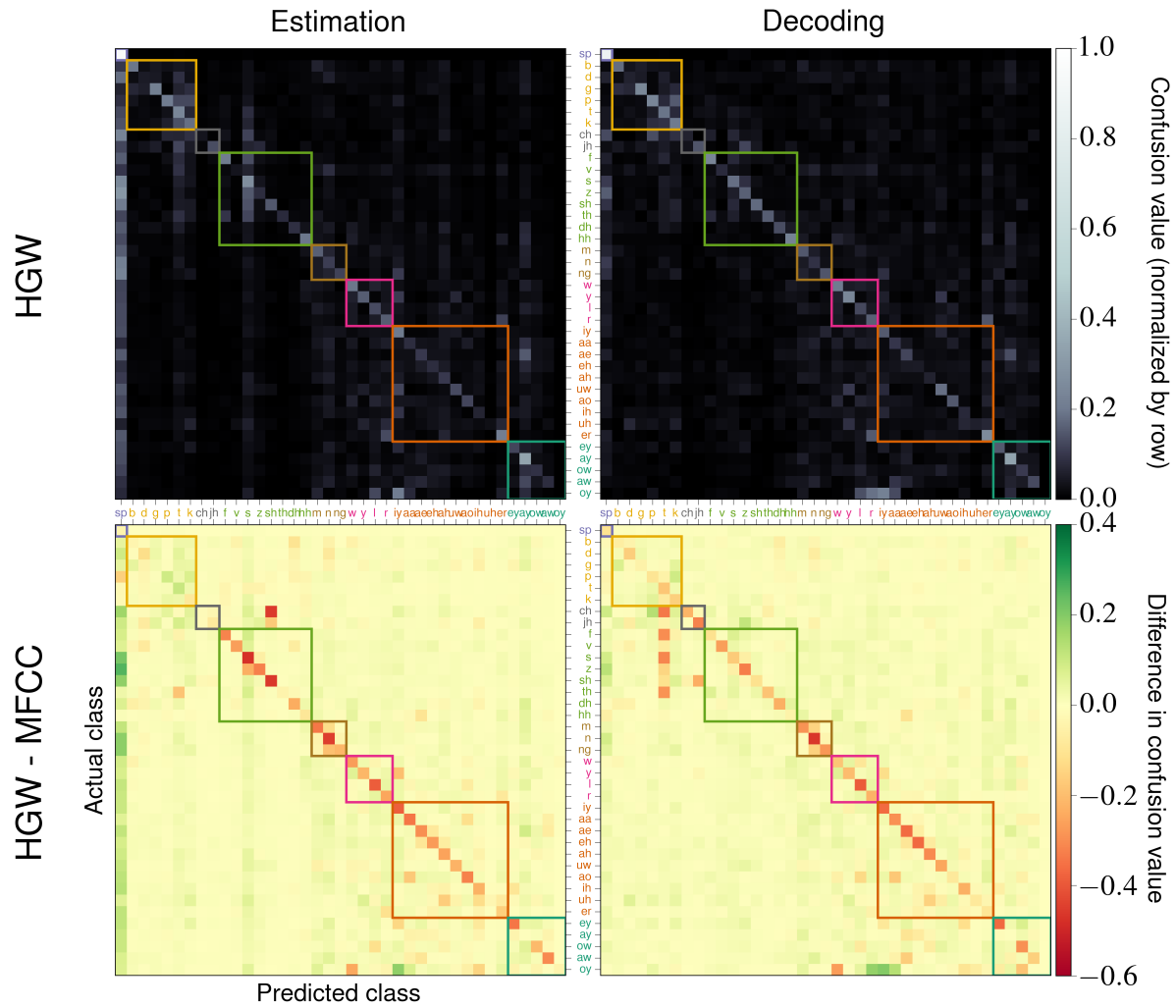
(b) Subject B - Single-trial HGW
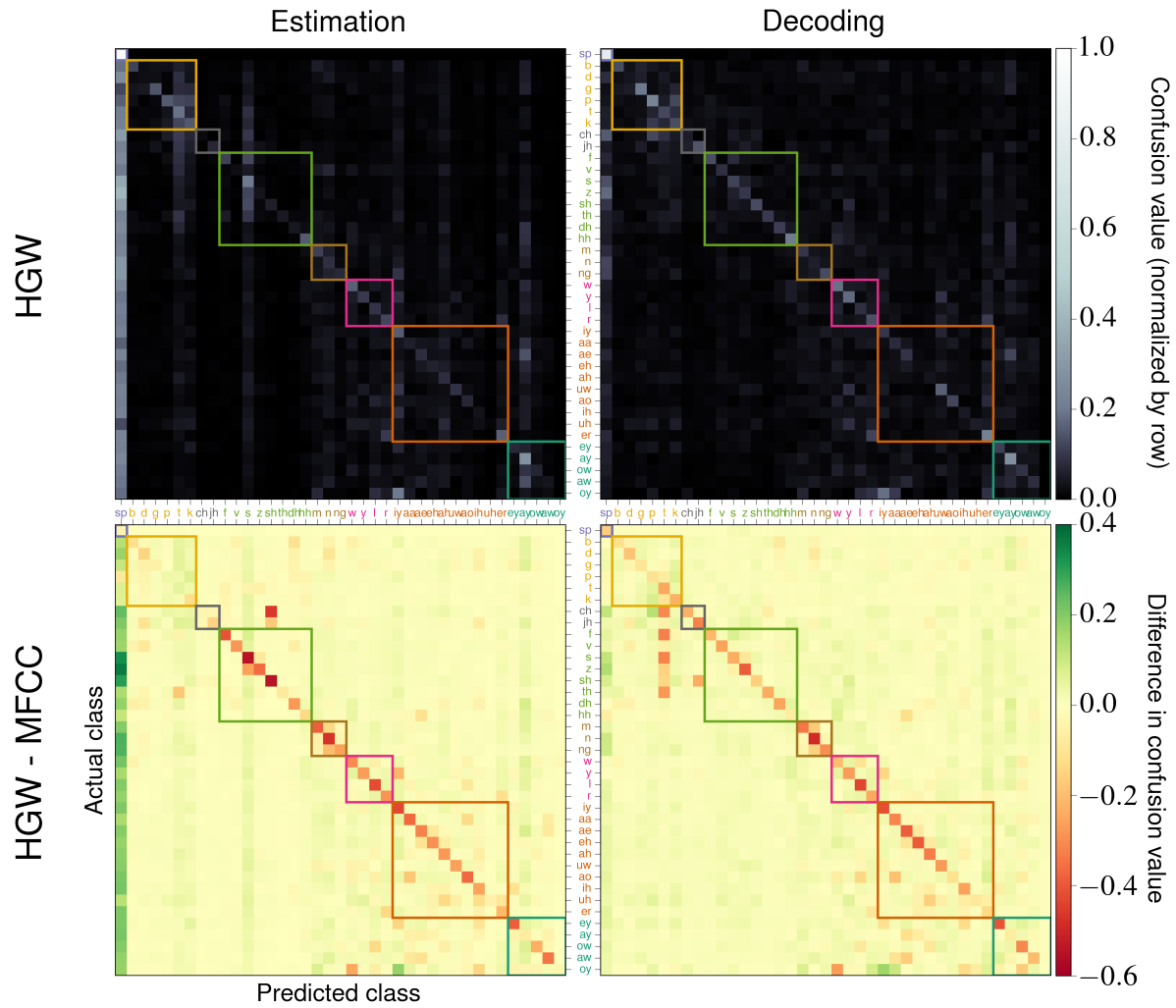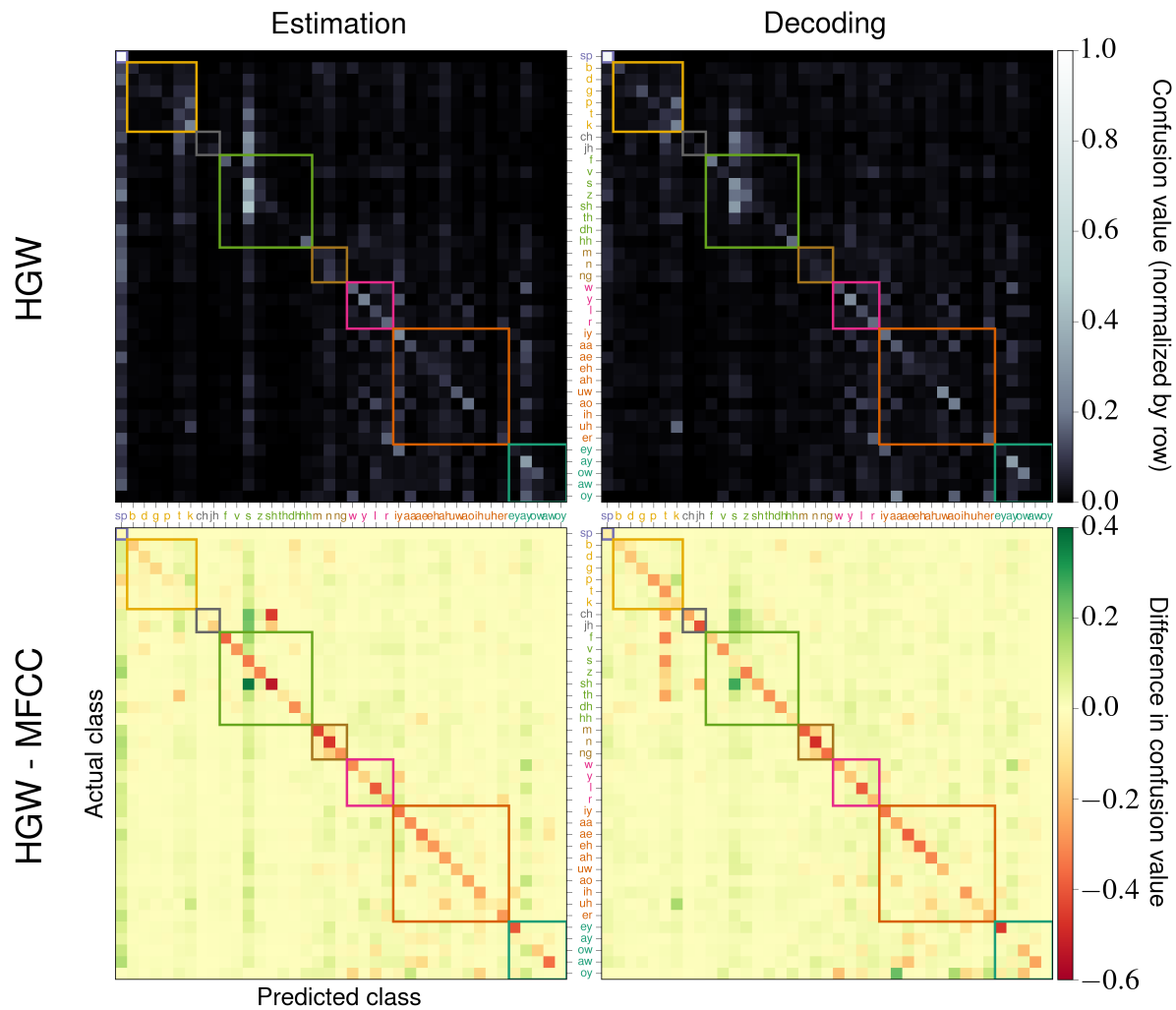
(c) Subject C - Single-trial HGW
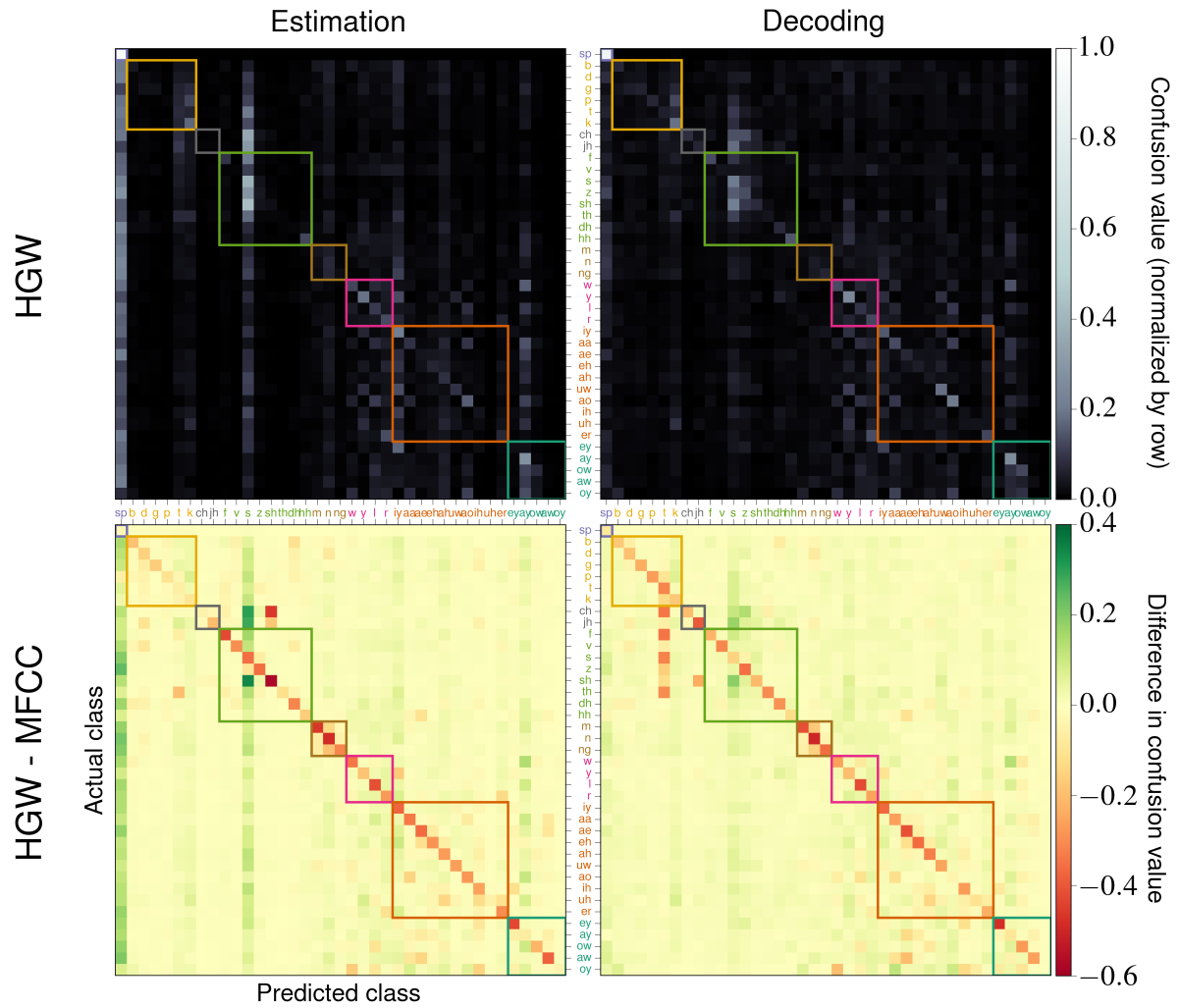
(d) Subject A - Averaged HGW

(e) Subject B - Averaged HGW

(f) Subject C - Averaged HGW

(g) All Subjects - Concatenated HGW