

Supplementary Tables and Figures: Neural discrimination of vowels in second-language learners

Table S1. Mean, Median, Standard Deviation and Range for Self-ratings in English on the LBQ for the Japanese (JP), Russian (RU) and Spanish (SP) groups. One score was missing from the RS group and one from the SP group.

Variable	N	mean	median	SD	range
<b>Japanese</b>	12				
Overall judgment		4	4.5	1.2	2-5
Pronunciation		3.3	3.5	1.1	1-7
Grammar		3.8	4	1.4	2-7
Comp		4.5	5	1.1	3-6
Read		3.7	4	1.2	1-5
Write		3.6	4	1.6	1-6
<b>Russian</b>	11				
Overall judgment		5	6	0.7	5-7
Pronunciation		4.9	5	1.1	3-7
Grammar		5	5	1	4-7
Comp		6	6	0.9	4-7
Read		6.1	6	0.8	5-7
Write		5.2	5	1	4-7
<b>Spanish</b>	12				
Overall judgment		4	4.5	2	1-6
Pronunciation		3.7	4	1.9	1-6
Grammar		3.8	4.1	1.8	1-6
Comp		4.1	5	2.2	1-7
Read		4.1	5	2.1	1-6
Write		3.7	4	1.9	1-6

Table S2. Language background for Japanese adults calculated from 7-point scale. The number of questions used to calculate the response is shown (No. Questions). The number of participants who responded in the range is provided (Mostly Japanese = 1 or 2; Equal = 3, 4, or 5; Mostly English = 6 or 7).

Category	No. Questions	Mostly Japanese	Equal	Mostly English	Not Reported/NA
Parent/grandparents	4	12	0	0	0
Spouse	2	2	1	3	6
Children/pets	3	3	1	2	5
Community	3	1	5	6	0
Work	2	2	4	6	0
Media	1	0	10	2	0
Literacy	2	0	8	4	0
Friends	2	2	8	2	0

Table S3. Language background for Russian adults calculated from 7-point scale. The number of questions used to calculate the response is shown (No. Questions). The number of participants who responded in the range is provided (Mostly Russian = 1 or 2; Equal = 3, 4, or 5; Mostly English = 6 or 7).

Category	No. Questions	Mostly Russian	Equal	Mostly English	Not Reported/NA
Parent/grandparents	4	12	0	0	0
Spouse	2	4	1	3	4
Children/pets	3	8	2	1	1
Community	3	3	8	1	0
Work	2	2	4	6	0
Media	1	2	7	2	1
Literacy	2	3	3	5	1
Friends	2	3	7	2	0

Table S4. Language background for Spanish adults calculated from 7-point scale. The number of questions used to calculate the response is shown (No. Questions). The number of participants who responded in the range is provided (Mostly Spanish = 1 or 2; Equal = 3, 4, or 5; Mostly English = 6 or 7).

Category	No. Questions	Mostly Spanish	Equal	Mostly English	Not Reported/NA
Parent/grandparents	4	11	0	0	2
Spouse	2	4	1	1	7
Children/pets	3	4	3	0	6
Community	3	4	5	2	2
Work	2	1	5	5	2
Media	1	3	4	4	2
Literacy	2	3	3	5	2
Friends	2	7	4	1	1

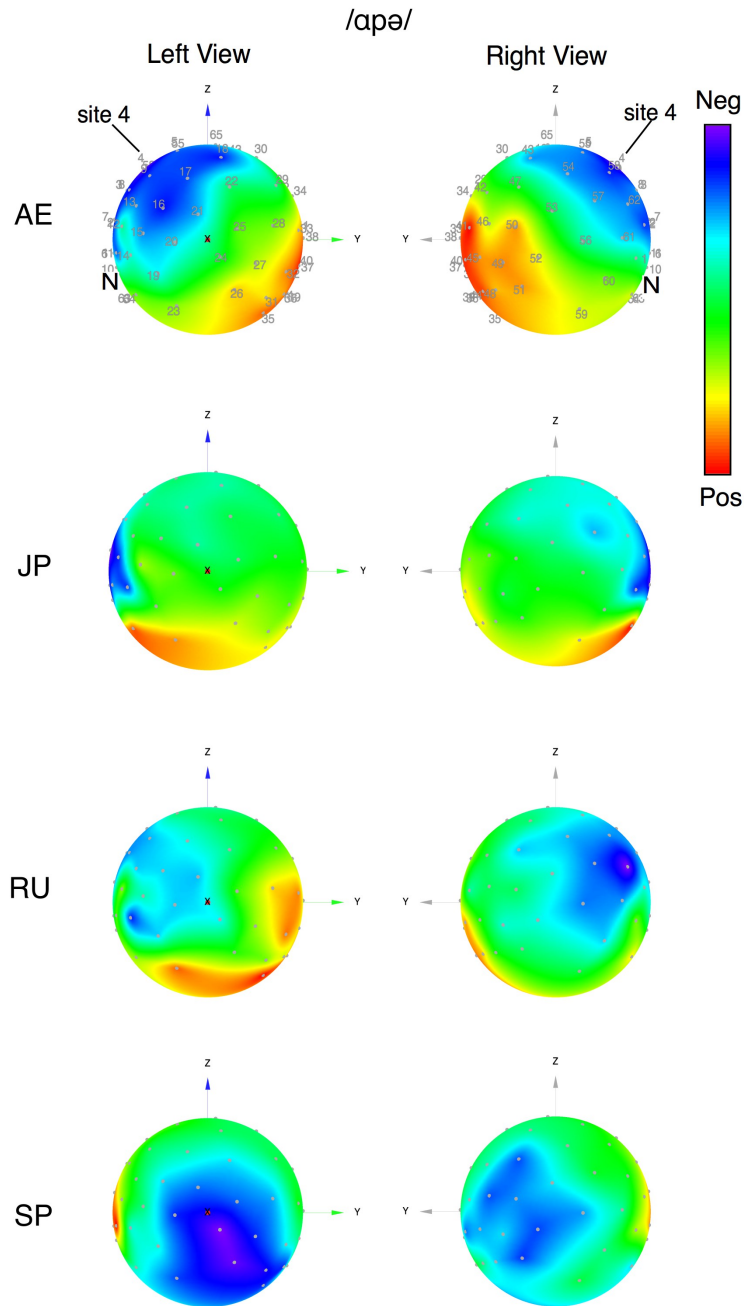


Figure S1. Topography maps of the MMN peak for the 160 ms interval for /apə/ subtraction. Amplitude values across the surface of a sphere were calculated using Delaunay triangulation (IGOR Pro 8). The Z axis emerges at the vertex and the Y axis over the occipital region. Electrode site locations are overlaid on the AE topography. Amplitude is normalized and blue shows negative (Neg) and red shows positive (Pos). The approximate location of the nose (N) is shown.

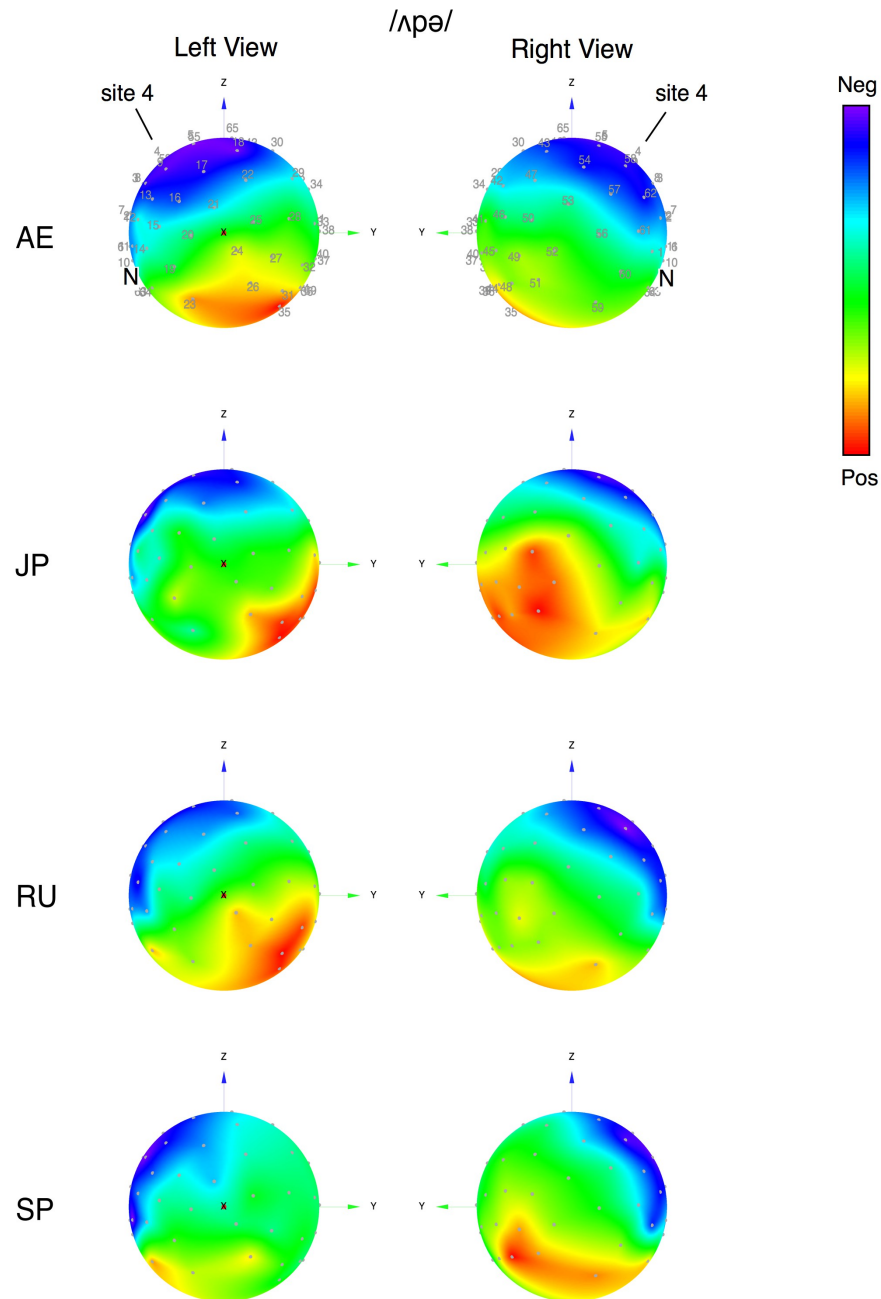


Figure S2. Topography of the MMN peak for 240 ms interval for the  $/\Delta p\partial/$  subtraction. The Z axis emerges at the vertex and the Y axis over the occipital region. Amplitude values across the surface of a sphere were calculated using Delaunay triangulation (IGOR Pro 8). Electrode site locations are overlaid on the AE topography. Amplitude is normalized and blue shows negative (Neg) and red shows positive (Pos). The approximate location of the nose (N) is shown.