

Mavis Lab Assignment: Labeling vowels and extracting the labeled values

Have a copy of the “Mavis Guide” document with you throughout this assignment. You can download it from the course website.

1) Go to a computer room where you can use Matlab. Take your headphones with you. Download the Mavis software toolbox and unzip it to the Desktop, as we did in class last time.

2) The goal in this assignment is to quantify the tongue shapes of all the back Hungarian vowels. These are the six circled vowels below.

	[-back]		[+back]	
	[-round]	[+round]	[-round]	[+round]
high	i [i]	í [i:]	ü [y]	ú [y:]
mid	e [ɛ]	é [e:]	ö [ø]	ó [o:]
low	e [ɛ]		á [a:]	a [ɔ]

Their datafiles should be included in the Mavis software toolbox you downloaded above and should have names like bab_BL_B1_R2.mat or bab_BS_B1_R1.mat [mnemonics: ‘BL’ stands for Back Long, ‘BS’ stands for Back Short, ‘B1’/‘B2’ stand for data acquisition Block 1 or Block 2, and ‘R1’/‘R2’ stand for repetition of the sentence within a given data acquisition block.]

Here is the list of all the relevant datafiles for this assignment (12 in total).

Low vowels	bab_BL_B1_R1	bab_BS_B1_R1
	bab_BL_B1_R2	bab_BS_B1_R2
Mid vowels	bob_BL_B1_R1	bob_BS_B1_R1
	bob_BL_B1_R2	bob_BS_B1_R2
High vowels	bub_BL_B1_R1	bub_BS_B1_R1
	bub_BL_B1_R2	bub_BS_B1_R2

Note that in each of the above datafiles there are two repetitions of the target word, ‘bub’ and so on. In the exemplar Excel sheet we worked with in the

lab, these were registered as Repetition 1 or 2. So from each datafile you should be extracting 12 numbers: 3 receivers (TB1, TB2, TD) x 2 dimensions (X, Y) x 2 repetitions. Since there are two datafiles for each vowel, bab_BL_B1_R1.mat and bab_BL_B1_R2.mat, there should be 24 numbers for each vowel.

Also note that the extrema you want to quantify in each vowel will depend on that vowel. For the low back vowels (bab...), the extrema should be found within valleys in the Y-dimension. In these valleys, find the timepoint of the Y minimum during the temporal range of the vowel and record its spatial Y value. At that same timepoint also take the spatial value in the X-dimension. In each datafile, do this for each of the three receivers, TB1, TB2, TD.

For the mid and high back vowels (bob..., bub...), the extrema should be found within valleys in the X-dimension. Thus, follow the same procedure as above: find the timepoint of the X minimum during the temporal range of the vowel and record its spatial X value. At that same timepoint also take the spatial value in the Y-dimension. In each datafile, do this for each of the three receivers, TB1, TB2, TD.

4) What you need to turn in: The Excel sheet with your quantified vowels and a graph of the tongue shapes for these vowels based on your quantifications.