

## Mview Lab Assignment: Labeling consonants, extraction and timing

You will use Mview in this assignment to analyze consonants in Moroccan Arabic. Specifically, we're going to see whether [g] or [d] has a longer closure phase, or "Plateau", in a subset of the data. We are also going to make some observations about the temporal sequencing of the two consonants. As you go through the document, be sure to **answer all questions highlighted in bold**. Have a copy of the Mview Guide document with you throughout this assignment. You can download it from the course website.

- 1) Go to the lab. Take your headphones with you. From the class website, download the Mview software toolbox and unzip it to the Desktop.
- 2) Open MATLAB. Change the working directory to the Mview directory on the desktop.
- 3) In the Mview directory you should be able to see the following 5 datafiles.

F\_devg1\_022.mat  
F\_devg1\_031.mat  
F\_devg2\_262.mat  
F\_devg2\_280.mat  
F\_devg3\_374.mat

- 4) In the MATLAB command window, type (you can copy and paste this string verbatim):

```
mview('F_devg*', 'dproc', {'mdp_PosOnly2D'}, 'lproc', 'lp_findgest');
```

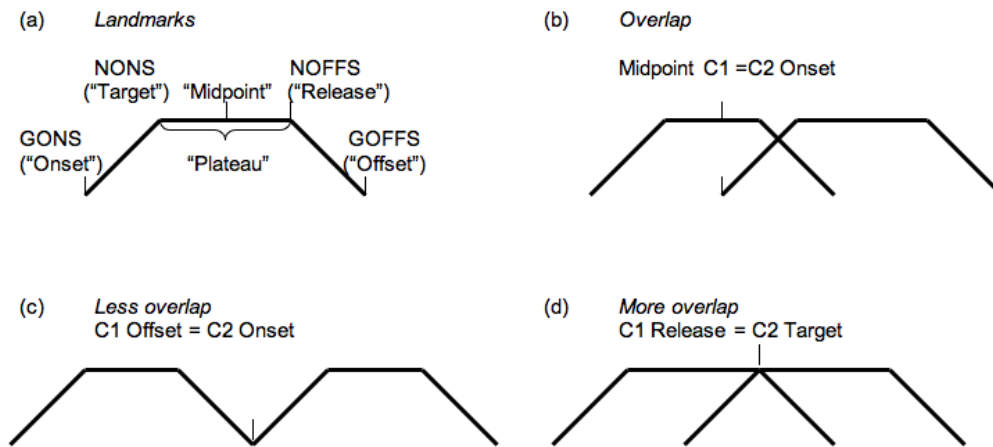
Click OK on the dialog box that appears.

- 5) This opens the above 5 datafiles (you can see the list of files open from the Variables drop-down menu in Mview), each of which has the speaker saying:

*Gal hadig tilt marat* "He said 'hadig' three times"

- 6) Zoom in so that you can see the TONGUETIPPOS record corresponding to the [d] and the TONGUEBACKPOS record corresponding to the [g].
- 7) Right click on the TONGUETIPPOS record where you see the maximum y-axis value (i.e., height) of that articulator (around 1555 ms in file F\_devg1\_022).
- 8) Right click on the TONGUEBACKPOS record where you see the maximum y-axis value (i.e., height) of that articulator (around 1710 ms F\_devg1\_022).

- 9) Now look at the two gestures and specifically look at how the two gestures unfold in time *in relation to one another*. To do this we observe how the TONGUETIPPOS movement for the [d] and the TONGUEBACKPOS movement for the [g] are related in time. **Examine each file (F\_devg1\_022, F\_devg1\_031, ...). I would like you to characterize the temporal coordination relation between [d] and [g]. In other words, we would like to identify which landmarks of the two consonants seem to be synchronous (happen at the same time). More specifically, which of the configurations below (b-d) does the timing relation in the data resembles most closely? Is there a configuration not shown below that you think better reflects the overlap you see (if you think so, also say why you think so)?**



- 10) Go to “Labels – Export Labels” (or Ctrl-9) and save the file as DG.lab (change the name to this) in the mview directory. Click Save.
- 11) From the “Variables” menu, choose the next file. MVIEW is going to go to the same point in time of the next file that you were in on the previous one. Unfortunately, this isn’t the right spot, so find the end of ‘hadig’ again. Repeat the labeling of [d] and [g] for this file.
- 12) Export the labels again. This time you should see the file DG.lab in the dialog box. Click on it and say Save. **If you don’t see the DG.lab file, you may have saved it in a different folder – if this is so, then move that file from that folder to the Mview folder and export again.** MVIEW is going to prompt you that this file already exists (which is true) and ask whether you want to replace it. This is a false alarm—MVIEW will not erase the data that is already there; it will append the new data to the data that are already in the current file. So say Yes.
- 13) Open Excel. Open DG.lab. You will have to tell it to look for “Files of Type: All files (\*.\*)”, then say it’s Delimited, Tab (this should be the default). Don’t bother formatting the columns, just click Finish.

14) You should have ten rows (not counting the header row). Remember that we defined the closure phase, or “Plateau”, as the time between the Target (column “NONS (ms)”) and Release (column “NOFFS (ms)”). Given these data, we can calculate this.

- a. Click on cell C1
- b. Choose “Insert - Column” (“Einfügen - Spalten”)
- c. Type “PLATEAU” in cell C1
- d. Click on cell C2 and type: =H2-F2
- e. Copy this cell and paste in cells C3 to C11.

15) Now press Ctrl-A. This will select all of your data.

16) Go to “Data – Sort” (“Daten – sortieren”) and choose TRAJ (Ascending [Aufsteigend]) for the first “Sort by” (“Sortieren nach”). Leave the other two blank.

17) Click on the cell that contains the first value of “TONGUETIPPOS” (I hope it’s B7...)

18) Choose “Insert Row” („Einfügen - Zeilen“). In cell C7, type: =AVERAGE(C2:C6)  
[=MITTELWERT(C2:C6)]

And press Enter. This should give you the average Plateau for the [g]s.

19) Click on cell C7, and bold it. Then copy and paste it into cell C13. This should give you the average Plateau for the [d]s.

**Which is greater? Which of the two consonants shows more variability in plateau duration (look at how plateau duration varies from one instance to another of the same consonant)?**

20) Copy the cell C7 to cell K7. This should show you the average peak velocity of the tongue back as it goes toward the target of the [g].

21) Copy the cell K7 to cell K13. This should show you the average peak velocity of the tongue tip as it goes toward the target of the [d].

**Which is faster?**

22) Save the file as an Excel Worksheet (DG.xls) and include its content with the rest of the answers to this homework.

**What to turn in:**

A single document with the answers to the above questions, including the excel worksheet in 22) above.