Lab Assignment #08 VOT and place of articulation in Sindhi

Due **F Oct 24** at 2:30pm on Canvas (Assignments) 30 points total

This lab will be done in **partner groups**. Each group only needs to turn in one submission on Canvas.

Lab session: Part of class on **W Oct 5 and M Oct 20** will be a lab session for this assignment. You will have an opportunity to collaborate with your partner group and other classmates, get help with Praat, and ask questions.

Overview

For this assignment, you will propose hypotheses concerning the **effect of place of articulation on VOT** for voiced, voiceless, and voiceless aspirated stops; measure properties of the stops in words from Sindhi; and interpret and discuss your results. The Klatt (1975) reading (available through UNC Libraries) will help you form hypotheses.

Klatt, Dennis H. 1975. Voice onset time, frication, and aspiration in word-initial consonant clusters. *Journal of Speech and Hearing Research* 18: 686-706.

Recommended workflow

- *W Oct 15 and M Oct 20 in class:* Work as a group to formulate hypotheses. Measure a few sample words and determine your measurement landmarks. Begin measuring sound files.
- *Working individually:* I recommend that each group member measure all the sound files, try to structure and format a results table, and experiment with data graphics to display the results. Think about what points to make in the Discussion.
- *Further collaboration:* Work as a group to compare and agree on measurements, finalize the results table structure and formatting, and finalize the data graphics. Finalize the Discussion section.

Purpose

This assignment provides an opportunity to apply and develop:

A. Phonetics knowledge and Praat skills

- Measure VOT for voiced, voiceless unaspirated, and voiceless aspirated oral stops.

B. Research skills

- Use phonetics knowledge and information from a reading to formulate a hypothesis.
- Interpret the collected data in order to evaluate the hypothesis.
- Communicate the results in the form of data graphics.

Task

A. Prepare to complete the lab assignment

- **Download** the sound files in the folder "Lab #8--Sindhi word sets" (see the "Lab assignments" page for links) and save these sound files on your computer so that you can open them with Praat.
- Make concrete plans with your **group partner(s)** about how to divide up the work and about when and how to collaborate on the lab assignment.

B. Answer questions (1)–(7) directly in Canvas

1. Hypotheses

Note: Be sure to justify your hypotheses with explicit discussion and argumentation, making concrete reference to the places of articulation found in Sindhi (see sound-file resources below).

(1) Based on the discussion in Klatt (1975), state and justify a hypothesis concerning how place of articulation will affect VOT for **voiceless unaspirated stops** in Sindhi. [2 points]

(2) Make a case for whether the same hypothesis as in question (1) is or is not plausible to state for **voiceless aspirated stops** in Sindhi as well, and why. [2 points]

(3) Based on our class discussion of the *myoelastic-aerodynamic* (muscular + aerodynamic) model of vocal-fold vibration, state and justify a hypothesis concerning how place of articulation will affect VOT for **voiced stops** in Sindhi. [2 points]

2. Experiment and results

Background: The sound files used for this assignment are excerpted from a field recording made by Peter Ladefoged in 1981. (If you wish to see the full set of materials from that field session, they are available here: <http://archive.phonetics.ucla.edu/Language/SND/snd.html>.) Each sound file is labeled with its English translation, and contains approximately 9 utterances of one Sindhi word (from 9 different speakers). To see the Sindhi word in IPA transcription, so that you know which stop you are measuring for that word, look at the word list, available here: <http://archive.phonetics.ucla.edu/Language/SND/snd_word-list_1981_01.html>. (The word list also includes words that we are not measuring.)

- **Measure the VOT for *each repetition* of each word.** (Don't worry about which speaker has said the word; just include every repetition in the sound file UNLESS Ladefoged comes on the recording and says something like "the eighth repetition was an error.")

In order to do this consistently and accurately, you will need to decide on **measurement landmarks.** You may wish to determine some of the landmarks separately for voiceless aspirated, voiceless unaspirated, and voiced stops.

(4) Describe the **landmarks** you used for measuring VOT in: (a) voiceless unaspirated stops; (b) voiceless aspirated stops; (c) voiced stops. [3 points]

(5) Present your VOT measurements in a table, which you should convert to **PDF** and **upload** to Canvas. Include the group's names in the filename or in the document. [10 points]

Organize your table in a linguistically meaningful order. (Note that we are looking only at the **first consonant** in each word.) In this table, you should:

(a) Identify each word by its **IPA transcription and gloss/translation** (as on the IPA word list; see above).

(b) Give the **VOT for *each repetition*** of each word.

(c) Also give an ***average VOT*** **for each word**, averaging across all repetitions of that word.

3. Analysis and discussion

- Make one or more data graphics (such as a bar chart or scatterplot) as part of the discussion of **each** of your three hypotheses, allowing you to explicitly compare and contrast relevant values for the argument you would like to make. **Think carefully about how to set up your data graphic.** How should the information be organized? Does the order of the categories matter?

(6) **Upload** your data graphic(s) to Canvas in **PDF** format. Include the group's names in the filename or in the document. [6 points]

(7) **Discuss** your results. Were your hypotheses supported, or not? If any words or categories did not behave as expected, or if any problems occurred in measuring the sound files, you should discuss these issues here also. [5 points]

Criteria for success

This lab assignment is worth a total of 30 points; see individual questions for specific point values. Points will be awarded for accuracy and insight, and partial credit will be given where appropriate. All partners in the group will receive the same grade except in unusual circumstances.