Name: _____ Team: _____

Lab Ch 8: Speech Perception Experiments   CDIS 4313 – Freeman

In this lab, you will conduct speech perception experiments on yourself and your friends.

Materials: Internet connection, Praat, Lab-ch8-sounds.zip (extract all files).

Part A: Categorical perception of stop place of articulation via formant transitions

1. Complete all parts of this activity: https://learninglink.oup.com/access/content/sensation-and-perception-5e-student-resources/sensation-and-perception-5e-activity-11-2. Follow in order:

    a. Introduction: read to learn about the identification and discrimination tests.

    b. Identification trials: complete at least 14 trials, then click "show results;" this brings you to Results, Part 1 (read it). Record your results in Table A1. (Record the number of times you chose "ba," "da," and "ga" for sound #1, for #2, etc.).

    c. Discrimination trials: complete at least 18 trials, then click "show results;" this brings you to Results, Part 2 (read it). Record your results in Table A2. (Record the number of times you chose "identical" and "different" for each pair of sounds.)

2. Have two other people (outside our class) complete the identification and discrimination tasks and record their results in the table below. Instruct them to complete the trials before reading the intro or any results, so they are "clean slates."
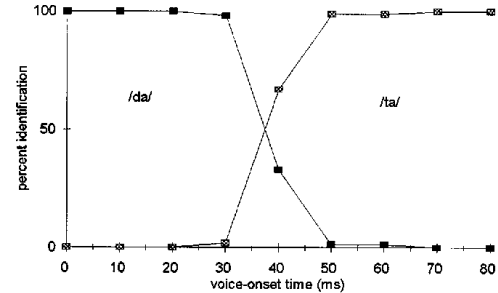
Table A1: Identification Results (number of responses)

Sound →	1			2			3			4			5			6			7		
resps →	b	d	g	b	d	g	b	d	g	b	d	g	b	d	g	b	d	g	b	d	g
Me																					
Friend 1																					
Friend 2																					
Totals																					
%ages																					

Table A2: Discrimination Results (number of responses)

| Sounds →	1-2		2-3		3-4		4-5		5-6		6-7	
resps →	same	diff	same	diff	same	diff	same	diff	same	diff	same	diff
Me												
Friend 1												
Friend 2												
Totals												
%ages												

3. Finish filling out the tables and graph the results in Plots A1 and A2.

   a. For the Totals rows, add the number of "b" responses across all 3 people, "d," and "g."

   b. For the Percentages rows, divide the total responses for "b" by the total number of responses (b+d+g in the Totals row), etc. Use these for the plots.

   c. Plot A1: graph a point for each phoneme /b, d, g/ for each sound. Use a different symbol for each (e.g. circle, square, triangle), fill in the legend, and connect the symbols with a different color or dash of line. Here is an example of a plot of this type where there were two phoneme choices that for sounds that differed in VOT (your plot will have three lines) →

   d. Plot A2: graph a point for the percentage of "these were different" responses for each pair of sounds.

Plot A1: Identification Results (%ages)
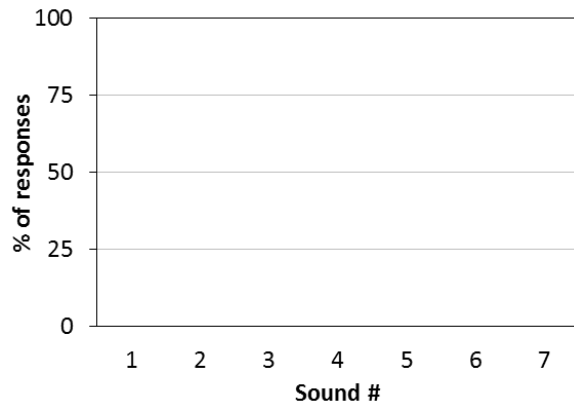
Plot A2: Discrimination Results (%ages)
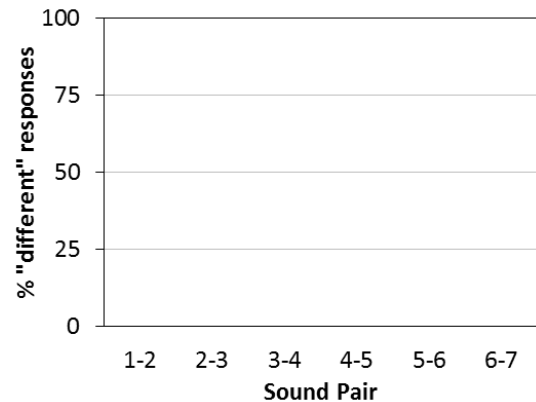
4. Answer the following questions:

   a. Plot A1: Where is the crossover point between /b/ and /d/? (Where do the lines cross: at or between which sound number(s)?)

   b. Plot A2: Is the crossover point for /b, d/ the same in the discrimination task as in the identification task? If not, where is crossover point in Plot A2? (Where is the highest percentage of "different" responses between /b/ and /d/ responses?)

   c. Plot A1: Where is the crossover point between /d/ and /g/?

   d. Plot A2: Is the crossover point for /d, g/ the same in the discrimination task as in the identification task? If not, where is crossover point in Plot A2?

   e. Briefly describe your participants' reactions to this activity.

Part B: Voicing

5. Identification: While wearing headphones or earbuds, play the file "bad-bat.wav" and circle which words you hear in Table B1 as it plays. There are nine items in random order (and some may be repeated), each of which might be either bad or bat. Circle whichever of the two words you think it is. Some of the words may sound like neither bad nor bat, in which case you should just guess which you think it is most like. The words are 1.5 seconds apart, so you won't have much time to make up your mind. It's your quick guesses that matter.

6. Repeat with two other people and record their responses in Table B1.

Table B1: Identification Results & Measurements

word	I heard…	Friend 1	Friend 2	Measure: _____	Time point(s)
1	bad bat	bad bat	bad bat		
2	bad bat	bad bat	bad bat		
3	bad bat	bad bat	bad bat		
4	bad bat	bad bat	bad bat		
5	bad bat	bad bat	bad bat		
6	bad bat	bad bat	bad bat		
7	bad bat	bad bat	bad bat		
8	bad bat	bad bat	bad bat		
9	bad bat	bad bat	bad bat		

7. Open bad-bat.wav in Praat, and look at the spectrogram of each word (Spectrum > Show spectrogram). What is different about them? (Hint: they are synthetic, so most things are identical.) Write the measurement that is different in Table B1, and then measure it for each word. Record both the measurements and the time points where you take them.

8. Fill in: What measurement determined which word people heard? Where was the crossover point? When _____ [measure] was less than _____, people heard _____; when it was greater than _____, people heard _____. (Tip: it may help to sketch a graph like Plot A1.)