|  |  |
| --- | --- |
| **Standard Operating Procedure (SOP)** | |
| **SOP Title:** | Segmenting phrases using PRAAT |
| **Study:** | DBS Study |
| **Date Created:** |  |
| **Last Updated:** |  |

## Purpose

In this study, we calculate several acoustic measurements from audio collected from neurotypical speakers, speakers with Parkinson’s disease, and speakers with Parkinson’s disease and deep brain stimulation (DBS) in on- and off-conditions.

## Definitions

HC = Healthy Control

PD = Parkinson’s disease

PDDBS = Parkinson’s DBS

DBS = Deep brain stimulation

## Materials & Equipment

* PRAAT Acoustic Software (PC and Mac compatible)
  + Available from here: <https://www.fon.hum.uva.nl/praat/>
* DBS Database File Inventories
  + <https://drive.google.com/drive/folders/1qIo-eGbfwjRJP7yQ462upx1AnKS0kfWV?usp=sharing>
* Project Speaker List & Analysis Progress
  + <https://docs.google.com/spreadsheets/d/1-JvbyxBqrwyQmPkwcPoTGUxZRO1k1jBSAwZ_dY3FNgY/edit?usp=sharing>

## Procedure

1. **Locate the Data (and Download if applicable):** Locate the speaker’s Caterpillar Passage recording. Use the **Coartic Database File Inventories** to identify which file is the Caterpillar (i.e., make sure you use the Caterpillar passage recording in the 2nd folder. The first folder contains a Caterpillar passage recording without sensors. If you are working remotely, download this .wav file from the Dropbox.
2. **Opening the Sound File:** Open Praat. Two windows will appear. On the left window, you will see the options **New, Open,** and **Save.** Select **Open > Read from File**. A finder window will open up. Find the correct audio file (identified in step 1). After selecting the right file, you should see the following:

Graphical user interface, application

Description automatically generated

1. **Creating the TextGrid:** With the audio file highlighted, click **Annotate > To TextGrid**. Replace the default text in **All tier names:** to be **Phrase**. Delete the default text in **Which of these are point tiers?** To be blank, as seen in the figure below. Click **OK.** Now, in the Praat Objects window you will see two objects: **1. Sound [sound file name]**, and **2. TextGrid [sound file name]**. Highlight both objects, and click **View & Edit**.

Graphical user interface, application

Description automatically generated

1. **Highlighting the Target:** On this view, you will see a waveform for the entire audio recording. The following figure contains some general Praat tips.

Graphical user interface, application

Description automatically generated

In this view, you can identify the target phrase within the audio.

As a general tip, it is good practice to highlight the general part of the audio that contains the sentences and zoom into that area using the **“sel”** (i.e., “selection”) button in the bottom left. This allows a closer view of the audio, which allows you to be more precise in your selection of the target sentence.

Timeline

Description automatically generated

Once you have highlighted the phrase, click **⌘ + 1** (on mac; on PC click: Boundary > Add on Tier 1) to create a new segment boundary. Now you will see a yellow box within your boundary. Here, you can type to label the boundary with the appropriate phrase ID (i.e., Sent1, Sent2, Sent3, etc. In the example image, I was using a different coding scheme [P1\_11]). Repeat this process for all target sentences.

1. **Save the TextGrid**: After completing segmentation for all of the phrases. It is time to save the sound and TextGrid. To do this, go to the main Praat objects window, select the TextGrid object, and click **Save > Save as text file…** This will allow you to edit the segmental boundaries in the future by opening the TextGrid file again.

Then, highlight the TextGrid object again and click **Tabulate > List… >** (click OK with the default options). A new window will pop up with a list of the onsets, offsets, and label IDs. In this view, click **File > Save As… > [sound file name]\_Segments.txt**. This creates a file very similar to the **.lbl** file created by TF 32.

And that’s it (for one speaker)!

Please let Austin know if you have any questions ([athompson4@fsu.edu](mailto:athompson4@fsu.edu)).

Target Stimuli

* Sent1: Th**e birds that saw butterflies played by the pon**d.
* Sent2: Th**e baby birds that saw many butterflies played by the po**nd.