

VVUnitAligner: script for DARLA-based segmentation (version 0.3)

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User's manual

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Script implemented by Leônidas Silva Jr., CH/UEPB, Brazil, based originally on **DARLA: Dartmouth Linguistic Automation**. *A suite of vowel formant extraction tools tailored to research questions in sociophonetics.*

This script post-processes phonemic-sized units returned by the original Montreal Forced Aligner (MFA), into vowel onset-to-vowel onset units (phonetic syllables¹). The script also chunks speech into higher prosodic units (*chunks* – CH). The new segmentation serves for the automatic extraction of metric and prosodic-acoustic parameters (see Silva Jr. & Barbosa's, 2019, 2021, and Barbosa's, 2020 scripts for the reference task).

So far, *VVUnitAligner* script is under adjustments of chunk segmentation. As far as new versions are available, they will be updated in our GitHub repository: <https://github.com/leonidasjr/VVunitAlignerCode_DARLA>.

HOW TO CITE THIS SCRIPT

SILVA JR. Leônidas. (2022). **VVunitAligner for DARLA-based segmentation**. Computer program (script) for Praat. (Version 0.3). URL:

<https://github.com/leonidasjr/VVunitAlignerCode_DARLA>.

GETTING STARTED...

- We will start from the point having in mind that you have already installed Praat in your computer.
- Please, consider placing the destination folder in a short directory path (desktop, for instance) in order to avoid long-path conflict.

Before start with the script workflow, let us see the settings for procedures in DARLA environment:

1. DARLA PROCEDURES

Please, access DARLA (Dartmouth Linguistic Automation) from URL: <<http://darla.dartmouth.edu/>>. Before you start the procedures, make sure you have a pair of files ('.wav' & '.txt') will be required. The '.wav' file is the audio you want to align. The '.txt' file is the text transcription to be aligned along with the audio file; The pair of files must have the same name (e.g.: '**filename.wav**' / '**filename.txt**').

¹ For a detailed use of this protocol, see Silva Jr. and Barbosa (2019).

Now, go to "Semi-Automated Alignment and Extraction"² option as presented in Figure 1, and choose one from both the options in Figure 2.

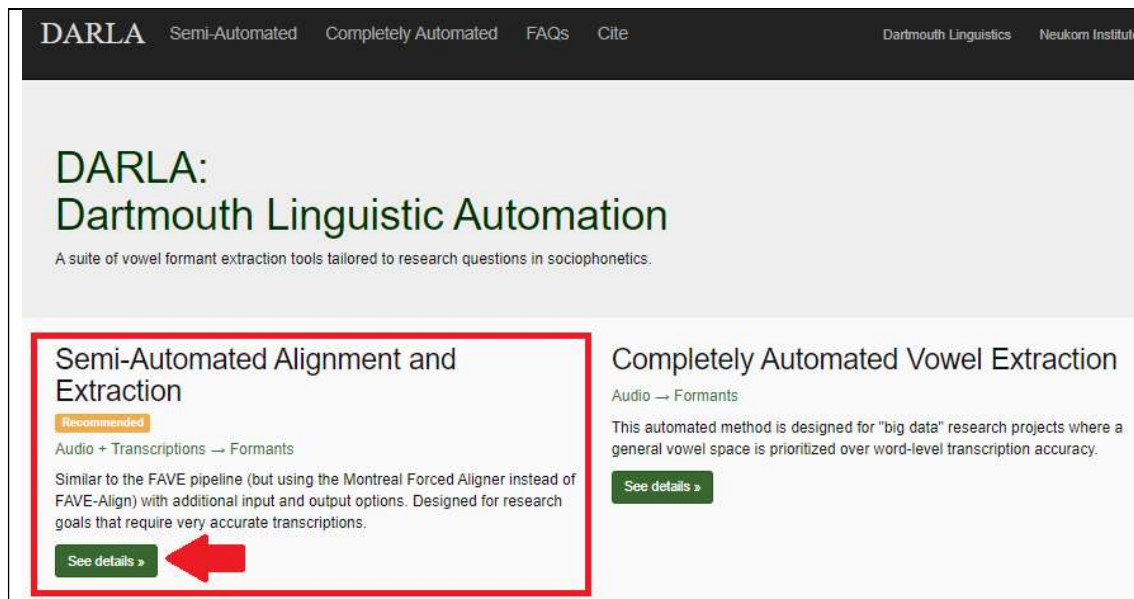


Figure 1

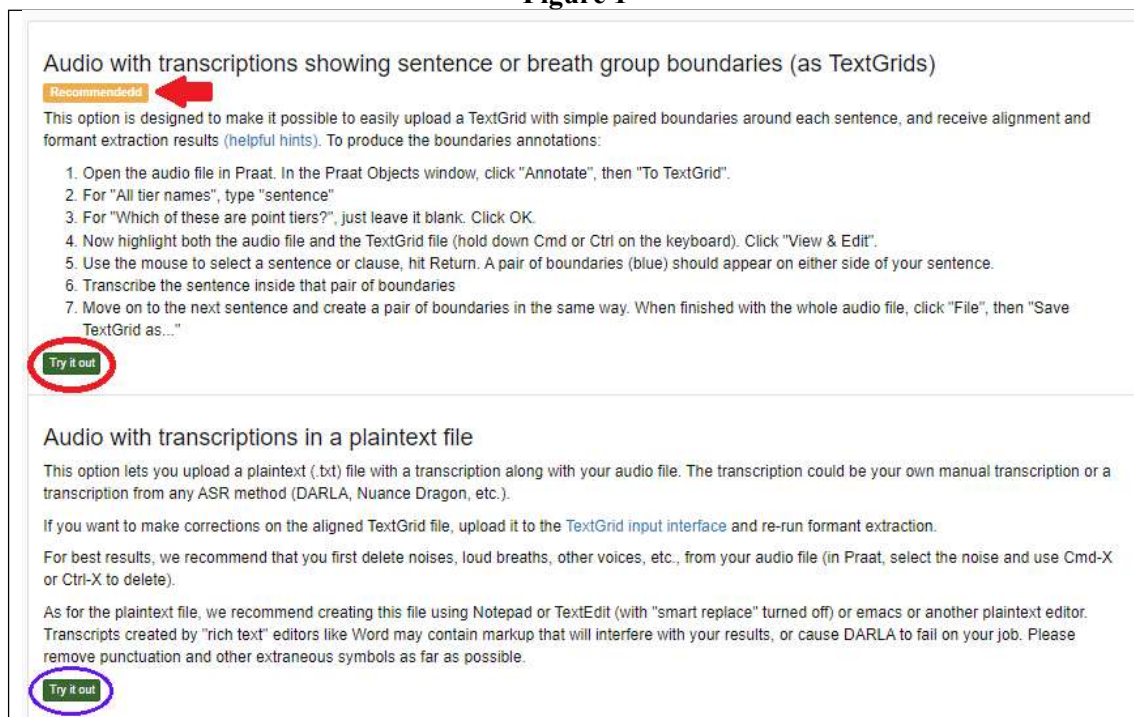


Figure 2

If you choose for the “Audio with transcriptions showing sentence or breath group boundaries (as TextGrids)”, then you will need a TextGrid file besides the txt and audio files (follow procedures in Figure 2);

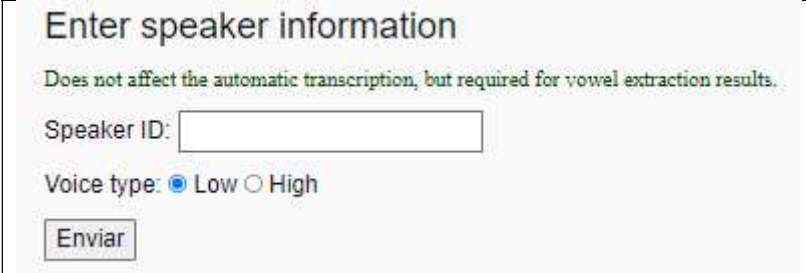
- For saving time, you can use `VVunitAligner_DARLA_Settings` script. This script automatically creates a TextGrid file for each pair - audio/txt

² Similar to the *forced aligner vowel extraction* (FAVE) pipeline (but using the *Montreal Forced Aligner* (MFA) instead of FAVE-Align with additional input and output options. Designed for research goals that require very accurate transcriptions. It aligns only **ENGLISH** audio/text files.

files - in your folder, uploads the plain text information from the files and set it into a pair of boundaries, as well as saving the TextGrids.

Else, just choose “Audio with transcriptions in a plaintext file”, click in “Try it out” option and upload your audio and plaintext files as showed in Figure 2.

Now, write the speaker’s ID (the same name of your audio/TextGrid/plaintext files) and send (see Figure 3).



Enter speaker information

Does not affect the automatic transcription, but required for vowel extraction results.

Speaker ID:

Voice type: ☒ Low ☐ High

Figure 3

Go to your e-mail and download the aligned TextGrid file.
Repeat the process in Figures 1, 2 and 3 for all of your files.

REMEMBER to keep *VVUnitAligner* script in **the same folder** of the files.

2. *VVUnitAligner* PROCEDURES

Now that you have already applied the DARLA procedures, and your audio, TextGrid, and *VVUnitAligner* script files are in the same folder, open Praat software and on the drop-down menu, click **Praat >> Open Praat script...** as showed in Figure 5. Now, choose the directory you saved your files, and click on *VVUnitAligner_DARLA.PSC* file.

For running the script, click **Run >> Run** as showed in Figure 6.

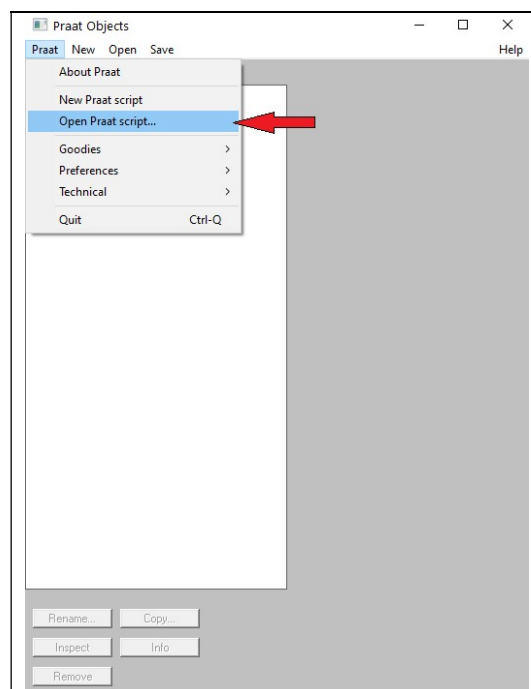


Figure 5

```

Script "C:\Users\Leonidas\Dropbox\UPitt\UPitt_DARLA\VUnitAlignerScript_DARLA_version0.3.PSC"
File Edit Search Convert Font Run
# VUnitAligner.psc # Run Ctrl-R #####
# Script implemented Run selection Ctrl-T 2: (leonidas.silvajr@gmail.com), CH/UEPB, Brazil,
# based originally on .....
##### CITATION #####
### SILVA JR. Leônidas. (2022). VUnitAligner for DARLA-based segmentation. Script for Praat (version 0.3).
#####
##### C R E D I T S #####
# Plinio Barbosa, for the whole teaching and supervision during my postdoctoral research besides
# the crucial tips/suggestions on programming in Praat as well as being a great friend
# Copyright (C) 2021, Silva Jr., L.
#####

## Getting started...

form Phonetic syllable alignment
#word Folder Paste directory path
word Folder C:\Users\Leonidas\Dropbox\UPitt\UPitt_DARLA
comment WARNING! This script must be in the same folder of the sound and TextGrid files
comment ".TextGrid" files must be created from: "DARLA Semi-Automated Alignment and Extraction"
comment URL: http://darla.dartmouth.edu/
boolean Chunk_segmentation 1
boolean Save_TextGrid_files 0
#natural Tier_number_1 3
#natural Tier_number_2 1
#real Max_period 0.02
#real Mean_period 0.01
#real Pause_detection_(s) 0.65
endform

```

Figure 6

When you click **Run**, the script will pop-up a window (a form with folder-path, language-choice, and saving-TextGrid options) as showed in Figure 7. Set up your preferences, and click the **Ok** button to run the script.

Run script: Phonetic syllable alignment

Folder:

WARNING! This script must be in the same folder of the sound and TextGrid files

".TextGrid" files must be created from: "DARLA Semi-Automated Alignment and Extraction"

URL: <http://darla.dartmouth.edu/>

☒ Chunk segmentation

☐ Save TextGrid files

Standards Cancel Apply OK

Figure 7

After running the script, *VUnitAligner* returns three different ‘.TextGrid’ files:

- The original segmentation (e.g.: DARLA.TextGrid - see Figure 8);

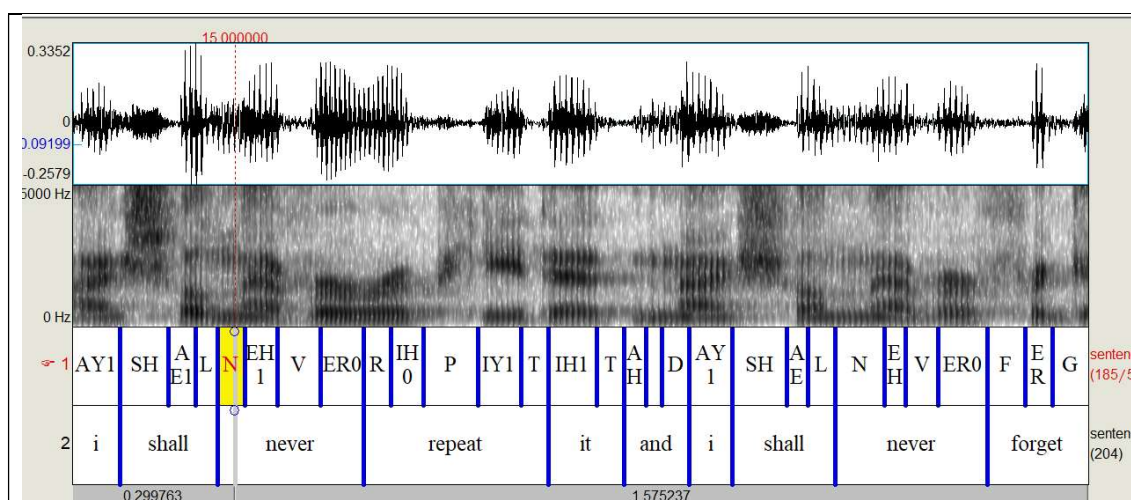


Figure 8

- The blend segmentation (e.g.: DARLA-VV.TextGrid - see Figure 9), so that the user can work either with DARLA annotation (plus an extra VV phone tier), and/or general annotation such as V/C/VV/#, and Chunk (CH) labels;

Figure 9

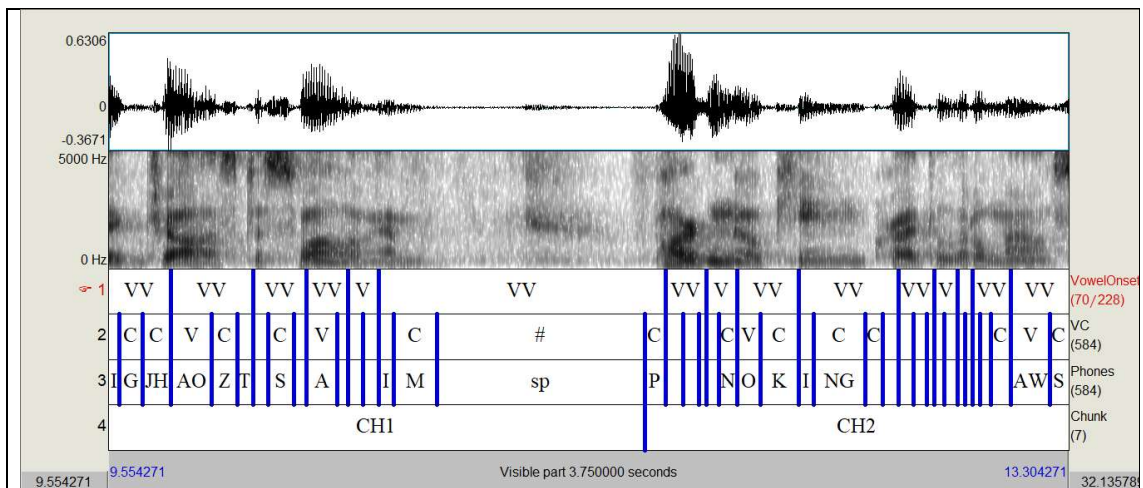


Figure 10

SILVA JR, L.; BARBOSA, P. A. (2019). Speech rhythm of English as L2: an investigation of prosodic variables on the production of Brazilian Portuguese speakers. **Journal of Speech Sciences**, v. 8, n. 2, p. 37-57. Available at: <<http://revistas.iel.unicamp.br/joss>>.

References (DARLA)

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