

BeatMaker (version 1.03)
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This script was implemented by Leônidas SILVA JR. (State University of Paraíba). It aims to resynthesize speech audio sounds into Beat and Pitch objects for prosodic analyses purposes in voice comparison context.

This script can be used, at least in a broad sense, for voice comparison in the following areas:

- Pronunciation teaching (native *vs.* foreign speech/accent);
- Sociophonetic analysis (dialect differences);
- Speech therapy (regular *vs.* disordered voices)
- Forensics (questioned *vs.* target voice validation).

For the sake of a finer comparison between voices, we **STRONGLY** recommend using - at most - **two audio files** per folder (at least SO FAR because *BeatMaker* is under updating).

This script **requires**:

- ✓ Two audio (**.wav** format) files containing the same speech information, but spoken by two different voices;
- ✓ A text file (**.txt**) containing the speech transcription of the audios must have the same name of the **reference audio**.

HOW TO CITE THIS SCRIPT

SILVA Jr., Leonidas. (2022). **BeatMaker**. Computer program for Praat (version 1.03). URL: <<https://github.com/leonidasjr/ResynthCode>>.

1. Getting started

We will start from the point that you have already installed Praat in your computer.

We provide in *BeatMaker* repository (<<https://github.com/leonidasjr/ResynthCode>>), three files (two audio files and a text file) for testing the script. Files are “L1_speech.wav/L2_speech.wav” and “L1_speech.txt”. Once you download the files you may follow the instructions on Table 1:

Preparing Metadata	Examples
<ul style="list-style-type: none">• For a better performance of <i>BeatMaker</i>, we strongly recommend that the audio files are named in the following sequence:✓ The 1st and 2nd characters = the <i>voice target</i>.✓ The program accepts the following sequences of 1st-to-2nd characters when tagging the audios: L1/L2 (Language 1/2); NS/FS (Native Speech/Foreign Speech); V1/V2 (Voice 1/2); CV/EV (Control Voice/Experimental Voice); SV/QV (Suspect Voice/Questioned Voice)	L1_speech.wav L2_speech.wav L1/L2 = Language 1/Language 2;

<ul style="list-style-type: none"> Write a text file (.txt) containing the speech transcription of the <i>reference audio</i> (L1 is the <i>reference audio</i> of our data) 	L1_speech.txt
<ul style="list-style-type: none"> Your folder must have the two audio files, the text file and the <i>BeatMaker</i> script as shown on the right: 	<i>BeatMaker.PSC</i> L1_speech.txt L1_speech.wav L2_speech.wav

Table 1

2. Running the *BeatMaker*

Now that your audio and text files, and *BeatMaker* are in the same folder, you will need to “call the script” into Praat object’s window. On Praat’s drop-down menu, click **Praat >> Open Praat script...** as shown in Figure 1. Now choose the directory where your files are.

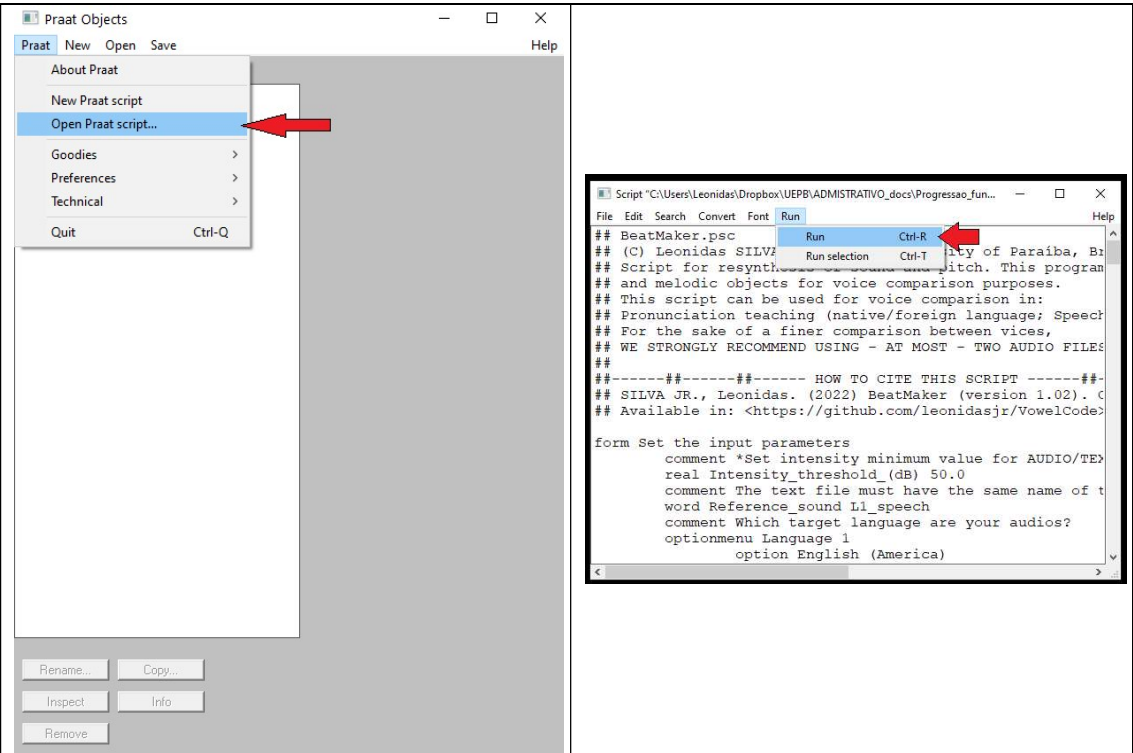


Figure 1

Figure 2

Once the script is open, you will need to run it. For running the script, click **Run >> Run** as shown in Figure 2.

When you click **Run**, the script will pop-up a window (a form containing the settings for the input parameters) as shown in Figure 3. Click the **Ok** button to run the script.

Figure 3

3. Script results

The script arguments are shown in the dialogue boxes on Figure 3:

Speaker ID: the user can choose from '*male*'/'*female*' voices or customize the pitch according to one's needs (in the case of infant's voice, for instance)

The user can choose one out of nine different languages to run one's experiment:

- English (U.S. and U.K.);
- Portuguese (BR and PT);
- Spanish (EU and L.A.);
- French (FR);
- Japanese;
- Interlingua.

The script automatically returns to the user:

- Sound objects such as: a *Voice*, a *Pitch*, a *Beat* and a mixed *Voice&Beat* audio object;
- A forced-aligned TextGrid generated from the reference audio and the speech transcription text file;
- A line plot for both Pitch (F0) curves (the F0 of the *reference* audio and of the *experimental* audio).

Figure 4 details the script's actions:

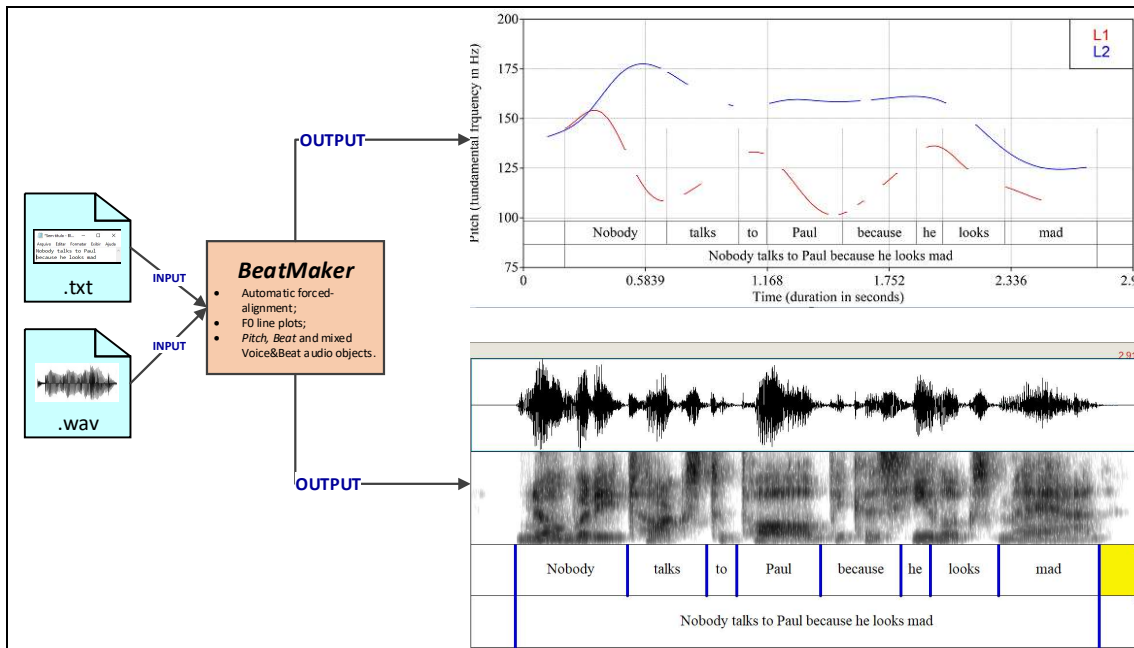


Figure 4