



**COLANG 2022**

**Praat for Indigenous Language Learning**

Sonya Bird and Rae Anne Claxton

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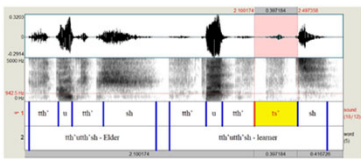
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### Introduction

- Praat
  - Tool for seeing, transcribing, and analyzing speech
- Why we use it
  - Slowing down our speaking and listening work
  - Adding a modality: seeing speech to help us hear it
  - Being mindful of Elders' time
  - Working on pronunciation in low-pressure environment
  - Because it's fun!



Praat display of tth'tth' (dragonfly) pronounced by St'tum'at, Dr. Ruby Peter and Rae Anne Claxton

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
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### Downloading and opening Praat

- Link to Praat download options: <https://www.fon.hum.uva.nl/praat/>
  - Select platform
  - Follow download instructions

**Download Praat:**

- [Macintosh, Windows](#)
- [Linux, Raspberry Pi, Chromebook](#)
- [\( FreshBSD, SGX, Solaris, HP/UX \)](#)
- [license and source code](#)



- Double click on the Praat icon to open Praat
- Close the Praat Picture window
  - We won't use it in our workshop

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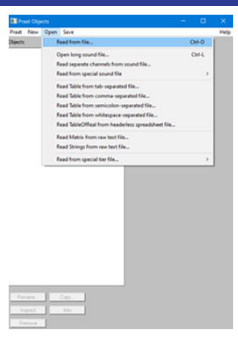
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### Opening sound files

- Open > Read from file...



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### Recording new sound files

- New > Record mono Sound...
- Unless you are using two microphones (e.g. for a conversation), in which case you can select Record stereo Sound...



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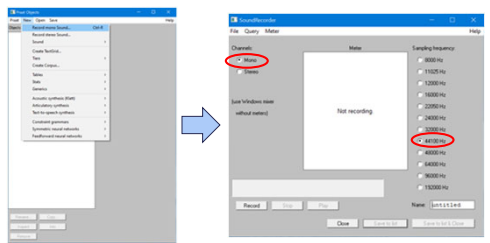
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### Recording new sound files



**Recording parameters**

- Mono (unless you have two mics)
- 44,100 Hz

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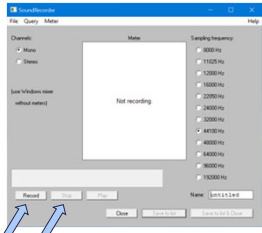
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### Recording new sound files



**Recording**

1. Click **Record** to start recording
2. Click **Stop** to stop recording

**Recording levels**

- Keep the recording level on the **high end of green** on the meter

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### Saving new sound files

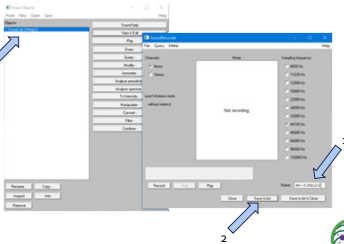
In the **SoundRecorder** window

1. Give your sound file a **Name**

1. Click **Save to list**

Your audio recording will show up in the main Praat window

3. Note: if you want to keep your recording after you close Praat, you need to **save it onto your computer** (see next slide)



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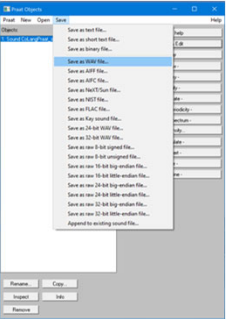
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### Saving new sound files

- **Save > Save as WAV file...**
- Choose a transparent file name!
  - e.g. 20220620\_CoLangPraatDemo\_RAC



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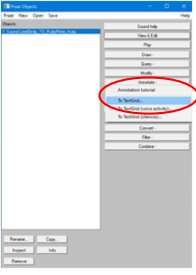
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### Creating a textgrid for annotation



- In the **Praat Objects** box, select a recording you want to create a Textgrid for.
- Click **Annotate > To TextGrid...**
- This will bring up the **Sound: To TextGrid** box

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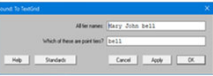
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### Creating a textgrid for annotation



- In the **Sound: To Textgrid** box, you can choose names/titles for the Tiers you will use in your Textgrid (to code information you want to track)
  - Separate each Tier name with a space
- Textgrids can include **interval** tiers and **point** tiers
  - **Interval tiers:** let you segment and label sections of speech
  - **Point tiers:** let you label specific points in the recording

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### Creating a textgrid for annotation: interval tiers



- When you open the **Sound: To Textgrid** box, the defaults are:
  - **All tier names:** Mary John bell
  - **Which of these are point tiers?** bell
- You can delete the defaults and use your own names (see next two slides). If you aren't using point tiers, you can leave that box blank.
- For our purposes, we will use four tiers (see slide 21):
  - **Sounds:** to code individual sounds
  - **Words:** to locate words
  - **Sentences:** to locate sentences/lines
  - **Notes:** to make note of observations

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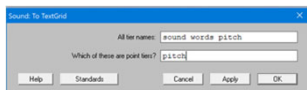
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### Creating a textgrid for annotation: point tier



- If you want to mark specific points in a recording, for example pitch highs and lows, you can create a point tier as well (see Slide 22)
- To create a point tier:
  - Include the point tier name in the **All tier names** list
  - Also include it in the **Which of these are point tiers?** list

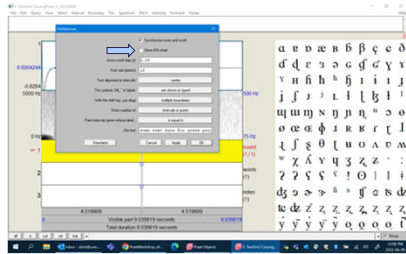


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### Opening a sound file + textgrid

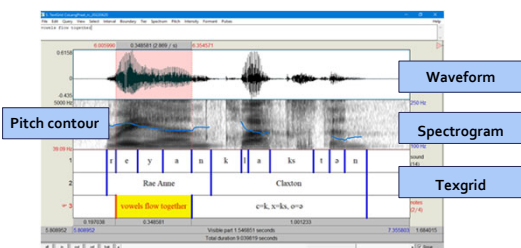
- For a cleaner display
- Unclick "Show IPA chart"



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### Pitch displays



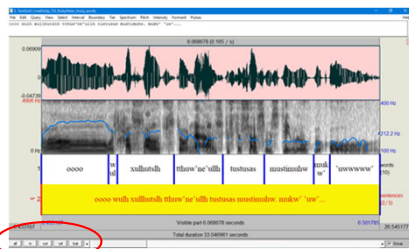
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## Zooming around Praat

You can:

- Highlight a section and click **sel**
- Click **in** or **out** to zoom
- Click **all** to view the whole audio files
- Click **bak** to get back to previous view



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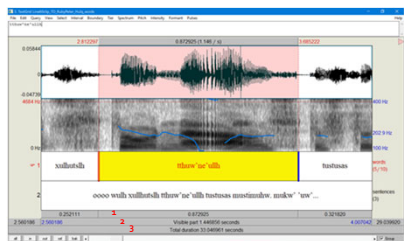
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## Listening in Praat

Clicking different bars will play different sound selections:

1. **Top bar:** just the selected interval
2. **Middle bar:** section of audio file displayed in the current window
3. **Bottom bar:** entire audio file



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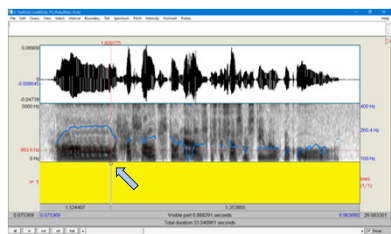
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## Creating markers on Textgrids

- Place cursor where you want the marker, on the spectrogram or the waveform (above the Textgrid)
- Click in the circle that appears on the Textgrid
- You can move markers by clicking on them and dragging them
- To erase a marker, use **alt backspace** on a PC or **option delete** on a Mac



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### Step 1: sentence-level annotation

- Using an interval tier to segment into sentences (lines)

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### Step 2: word-level annotation

- Using an interval tier to segment into words

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### Step 3: sound-level annotation with notes

- Using an interval tier segment into sounds, focusing on the details of pronunciation
- Here, Tier 4 is used to make notes about interesting pronunciation features

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### Step 4: pitch/intonation annotation with notes

- Using a point tier to mark important pitch landmarks (highs, lows, turning points, etc.)
- Here, Tier 4 is used to make notes on other things related to rhythm and intonation

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### Ideas of things to do with Praat

*In general*

- Paying attention to the details of natural speech

*More specifically*

- Looking at pronunciation of specific (challenging) sounds and sequences of sounds by Elder, teachers, and learners
- Comparing different ways of speaking in different settings
  - For example, carefully articulated speech (e.g. in a classroom or documentation setting) and more natural speech (e.g. in a conversation with fluent speakers)
- Transcribing stories, when you need to be listening carefully to hear each part
- Understanding the specific ways that emphasis is created in stories, e.g. where does the pitch go up and down, where are the sounds stretched out

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