

## **ELAN (EUDICO Linguistic Annotator) Segmentation Guide**

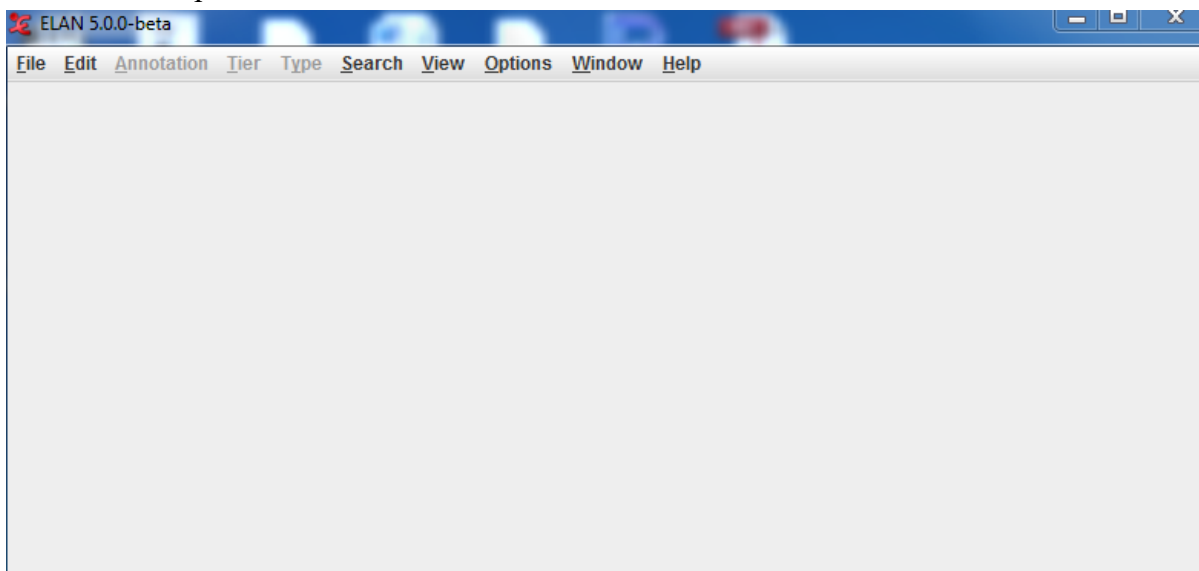
- I. About ELAN (EUDICO Linguistic Annotator):** Developed by the Max Planck Institute for Psycholinguistics, ELAN (EUDICO Linguistic Annotator) allows users to create and modify annotations for audio and video data. ELAN is a tool that makes it possible to annotate, document, and analyze communication including language, sign language, and gesture. **To Download ELAN** you can follow this link:  
<https://tla.mpi.nl/tools/tla-tools/elan/download/>
  
- II. About The ELAN (EUDICO Linguistic Annotator) Segmentation Guide:** This guide aims to provide step-by-step instruction for using ELAN to segment an audio/video file for speech utterances. Material discussed in this guide includes creating an ELAN file, creating tiers, creating segments, modifying segments, and saving the file. Additionally, what is and is not considered speech as it pertains to C-Units and the speech coding scheme can be found at the end of the guide to assist in accurate segmentation and documentation of communication. Please note that the guide was created using ELAN 5.0. You may need to update your version as needed.

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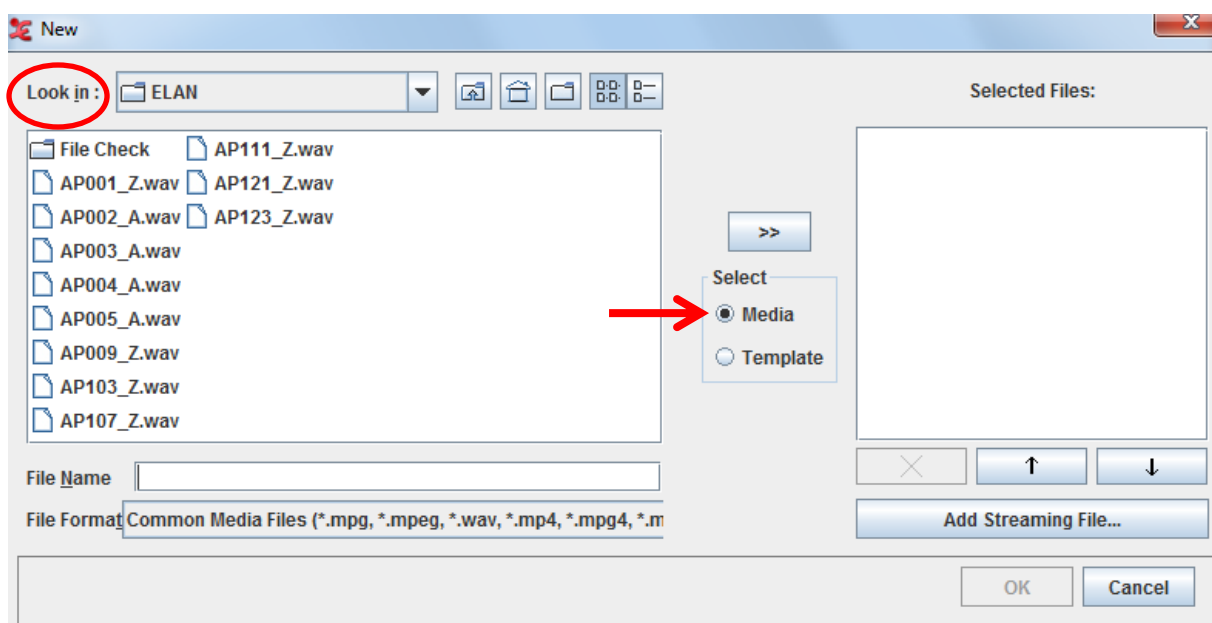
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## 1. Creating an ELAN File

- a. Open ELAN 5.0. This is what ELAN should look like when launched.

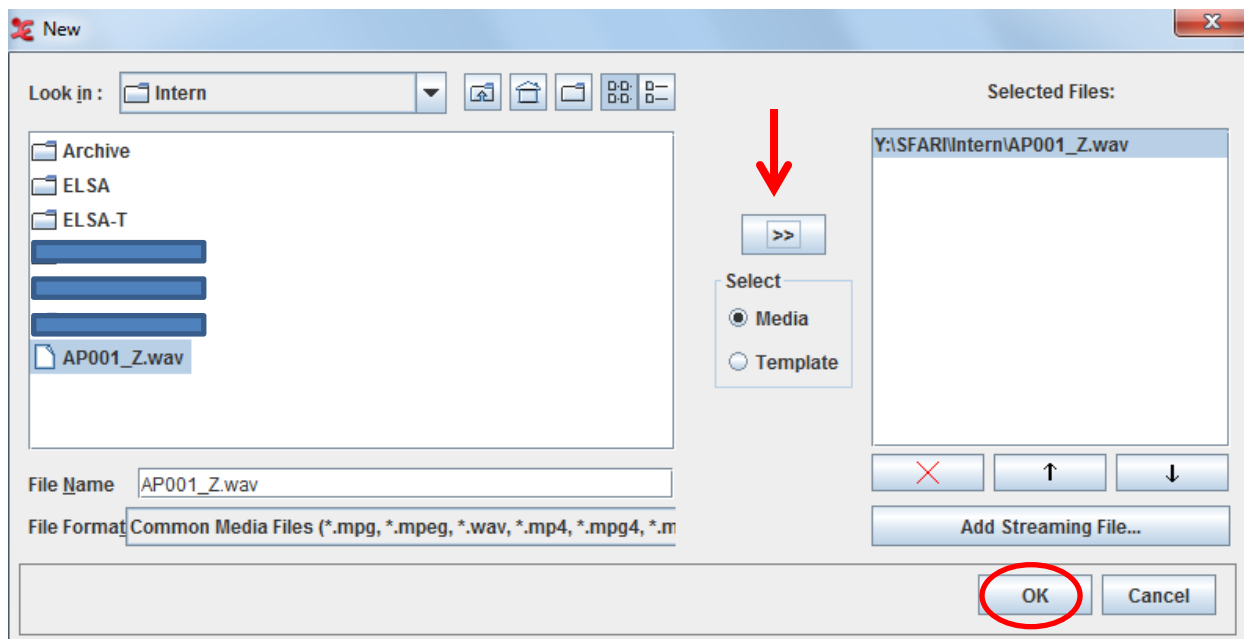


- b. Click File → New (A pop-up window should appear).



- c. Select Media → Then, using the drop down menu labeled “Look in,” select the audio/video file you wish to work on.
- i. **Note:** ELAN only supports .wav audio files. If you have a different file handle, you must use a conversion software program to convert your file into a .wav audio file.

- d. Click the “>>” button in the center of the pop-up window to select the desired file, and then press the OK button.



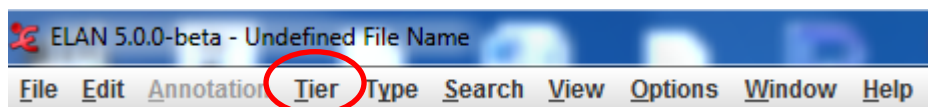
- e. Before making any changes to the file, **save it**. File → Save → Appropriately label your file.

## 2. Creating Tiers

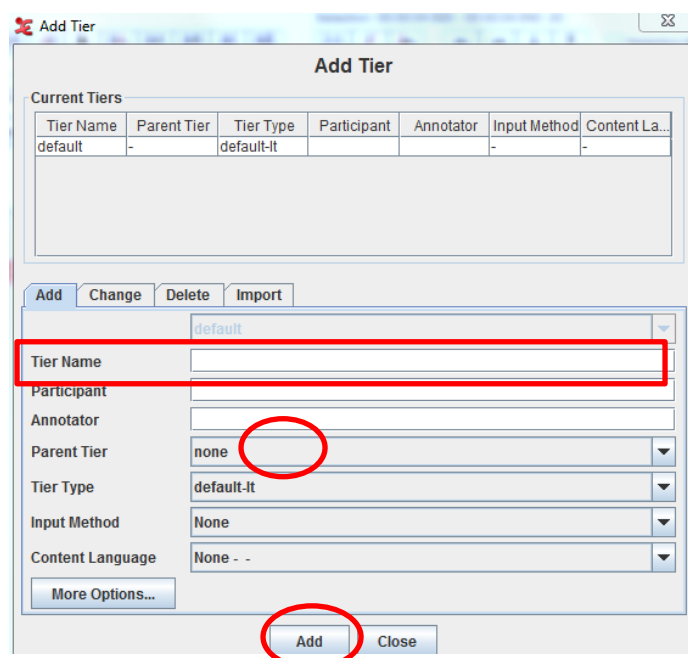
- a. ELAN allows users to create *tiers*. Essentially, tiers allow communication from multiple conversational partners to be categorized into independent lines. Think of tiers as cubby spaces in a classroom – each individual has their own space to store their belonging for easy access. Similarly, tiers help ELAN users organize segmentations of speech by conversational partner. You can have multiple tiers, each for a member of the conversation your wish to segment. Having separate tiers for each individual in the conversation is important so that you can easily keep track of utterances coming from a participant, examiner, aid, etc. Additionally, creating tiers helps to easily find segments according to the partner of interest.
- b. There will be two conversational partners in our coding scheme: the participant and the examiner. When segmenting in ELAN, we need to make sure speech is

being segmented to the appropriate person. Creating and labeling tiers allows us to do this.

- c. To create tiers:
  - i. Select the tab labeled “Tier” → “Add New Tier...”



- ii. Once the pop-up window labeled “Add Tier” appears click on the field box labeled “Tier Name” and type **Participant**. Click “Add.”

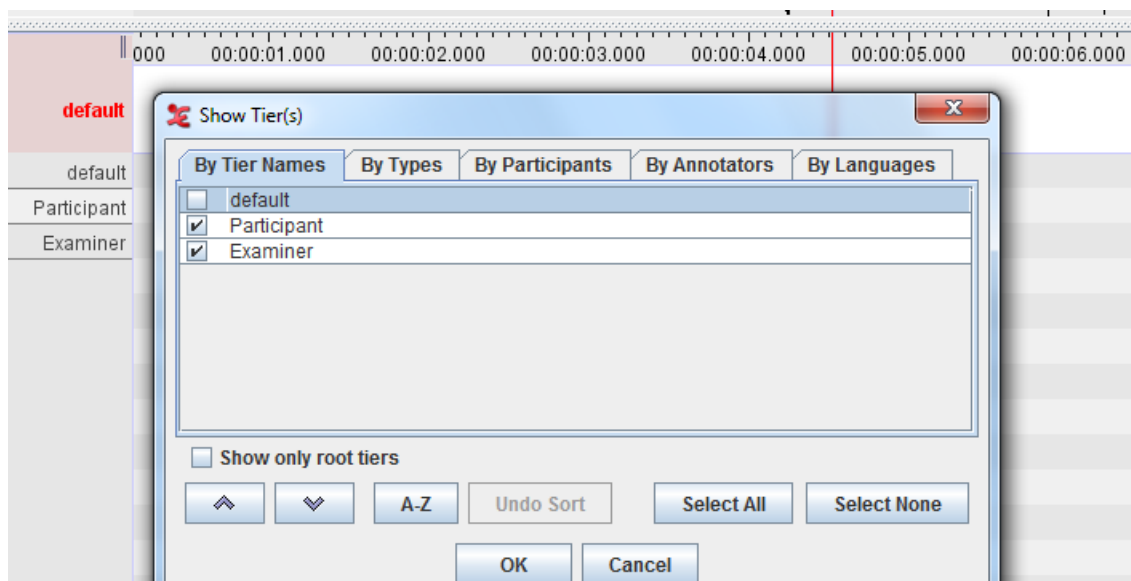


- iii. In the same field box, type **Examiner**. Click “Add” and then “Close.”

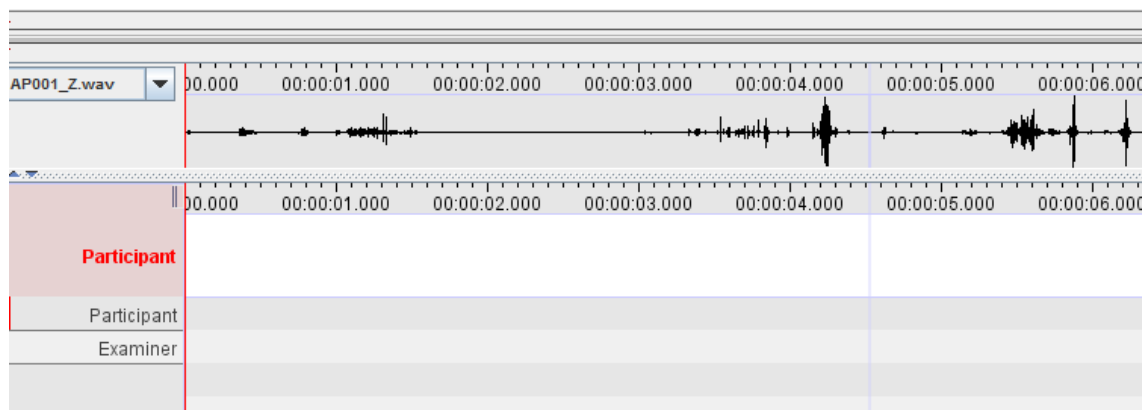
### 3. Creating Segments

- a. When you create a segment in ELAN, you are essentially marking the onset and offset of a speech utterance. In our coding scheme, we segment speech utterances using Communication units (C-units).
- b. A **C-unit** consists of one main clause with all its subordinate clauses. A **clause** contains a subject (noun phrase) and a predicate (verb phrase). Below are some examples (The **main clause** is bolded and the subordinate clause is underlined).
  - i. **The dog began to wag its tail** as the man approached him.

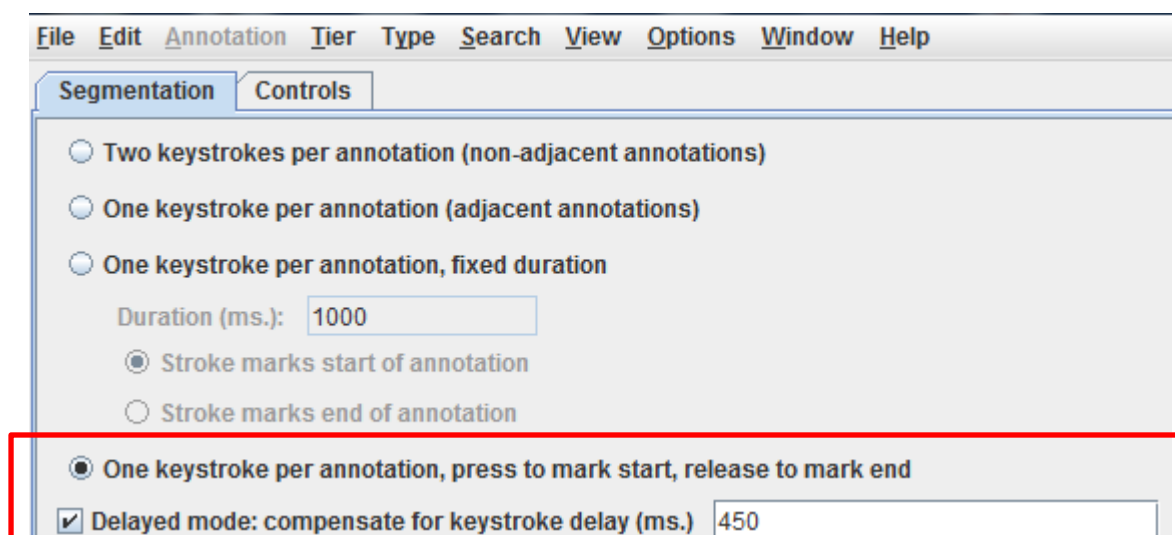
- ii. When the girl reached into the bag of lollipops **she realized** that it was the last one.
- c. The above examples are phrases that would be considered one C-unit and each would make up one segment in ELAN. Because the main clause links the subordinate clause with a **subordinating conjunction** (e.g. because, that, when, as, who, so that, etc.) the phrase remains as one C-unit.
- d. Below are examples of phrases that would be segmented into two C-units:
  - i. The duck was swimming in the pond / but it flew away.
  - ii. Joey scraped his knee when he fell / so he got a bandage.
- e. The sentences above are composed of two main clauses, and are linked with a **coordinating conjunction** (and, but, so, etc.); because of this, each sentence can be segmented into two C-units.
  - i. **Please reference Appendix A for additional guidance on segmenting by the rules of C-units and the speech coding scheme.**
- f. **Enter Segmentation Mode**
  - i. Click the tab labeled “Options” → “Segmentation Mode”
  - ii. Notice the tier labeled “default,” on the left side. We do not need this tier. Right click on “default” and click “Show/Hide More...” Uncheck “default” and click OK.



- iii. Your screen should now look like the image below. *The tier that is being segmented will appear in red.* **To change tiers**, use the **up and down keys** on your keyboard.




- iv. In the window labeled “Segmentation,” click “One keystroke per annotation, press to mark start, release to mark end.”
1. This will allow the coder to press the “Enter” button to mark the onset of a speech utterance. When “Enter” is released, the offset of the speech utterance will be marked.




- v. In the “Segmentation” window, make sure to check “Delayed mode: compensate for keystroke delay (ms.) 450.”
1. By selecting this feature the delay that occurs between the coder hearing the speech and pressing “enter” to segment will be corrected. Although this feature is precise, it is still a good idea to

check what you have segmented to ensure onset and offset of the speech utterance is accurate!

### g. Playing the Audio/Video File

- i. To initially play the audio/video file, press the **Play**  button in the toolbar that is just below the “Segmentation” window. From then on you can use the **space bar** to *play* and *pause* the audio/video file.



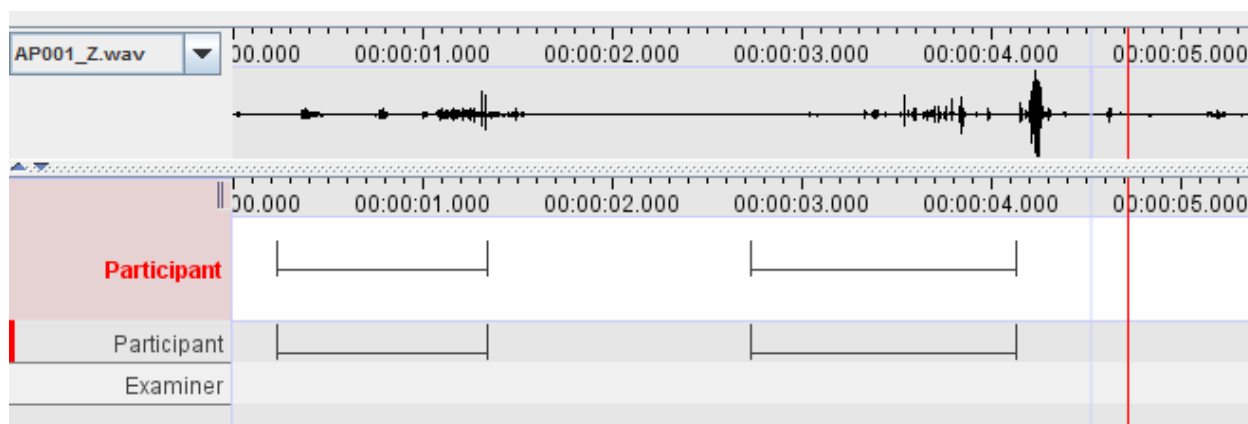
- ii. To expand or condense waveforms, use the zoom slider  located at the bottom right of the screen.

### h. Segmenting

- i. To segment a speech utterance, **press and hold** the “**Enter**” key at the onset of speech. **Release** the “**Enter**” key at the offset of speech. Remember, you can **switch** between Participant and Examiner tiers by using the **up/down keys**.
  1. You can listen to the audio/video file twice: once for segmenting the examiner’s speech, and another time for the participant.
  2. Or you can listen to the media file once, switching back and forth between the two tiers. Though this method may be slightly quicker, use the technique you are most confident with!

*ii. Remember to segment based off your understanding of C-Units and the speech coding scheme!*




- iii. Below is an example of what it will look like once you segment speech utterances.

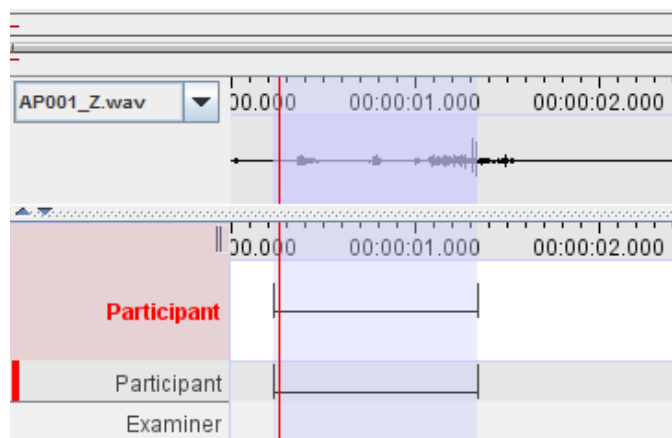





#### 4. Modifying Segments

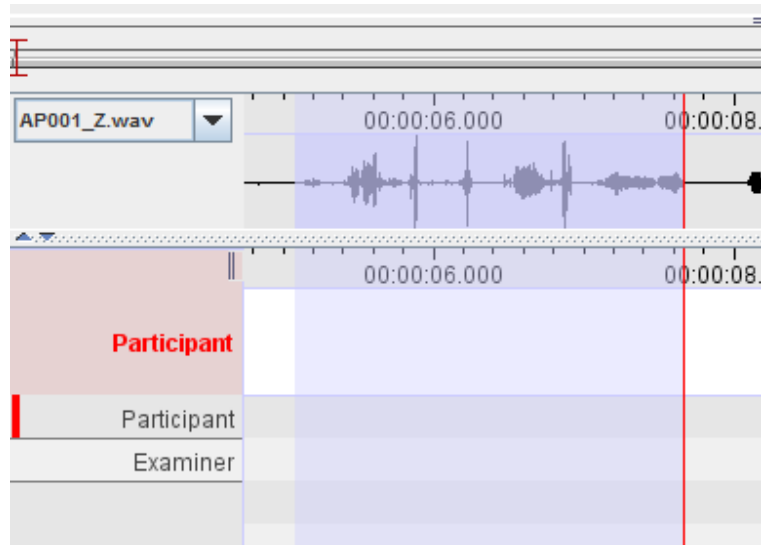
- a. Sometimes it can be difficult to accurately segment a speech utterance, especially if the conversational partners are talking simultaneously, or if utterances occur back-to-back. However, there are ways to easily modify a segment to accurately capture the onset and offset of speech so that they follow the rules of C-units.

1. **To move the segment in its entirety**, hover over the horizontal line of the segment until it appears green. Your cursor will change to . Now left click and drag the segment to its appropriate spot.
2. **To make the length of the segment larger or smaller** hover your cursor over the vertical line of the segment. Your cursor will change to . Left click and drag the segment to the appropriate spot of onset/offset of speech.
3. **To delete a segment**, hover your cursor over the segment until it appears green and press “Delete” on your keyboard.
4. **To split an utterance that you created as one utterance but should be two (or more)**, drag the red time ruler to the point in the waveform that needs to be segmented as onset/offset of a new speech utterance. Next, hover over the segment until it appears green. Right click and select “Split Annotation.”
5. **To isolate the segment** so that it is the only portion being played back, left click the segment you wish to isolate. It should appear with a purple box around it. Then, click  from the toolbox. Selecting this will only playback the isolated segment.



- a. Similarly, you can isolate wavelengths that have not been segmented by left clicking on the portion of waves desired and dragging your cursor to the left or right. Then you can

click  to playback the isolated section.



6. **To save** click File → Save (I recommend saving the file multiple times through the segmenting process.

## Appendix A

### I. What to Segment

- a. Babbling
- b. Full sentences
- c. Phrases
- d. Single syllables (not longer than 3 seconds)
  - i. “mmm” v. “mmmmmmmm” (humming – do not code).
- e. Single words
- f. Alternating vowel and/or consonant vocalizations
  - i. e.g. “oioioioi” or “hmm”

### II. What not to Segment

- a. Speech that is directed towards an observer, aid, parent, etc. by either the examiner or participant.
- b. Speech that is produced by an observer, parent, aid, etc.

**Examiner:** Play-doh or markers?

**Parent:** Do you want to play with play-doh or marker?

**Child:** Markers! (Directed towards parent)

\*In the above example, the examiner’s utterance should be segmented. The parent’s utterance should not be segmented because the coding scheme only accounts for speech produced by an examiner or participant. Finally, since the child responded to his/her parent and not the examiner, his/her speech should not get segmented.

- c. Speech that is produced by Alternative and Augmentative Communication (AAC) (e.g. PECS board, American Sign Language, speech generating device (SGD) etc.)
- d. Vegetative sounds (sounds that have biological function)
  - i. Includes: burps, gasps, sighs, hiccups, sneezes, coughs, etc.
  - ii. Crying/laughing
  - iii. Moaning, squealing, grunting, growling
  - iv. Humming
  - v. Yelling – if it is a single vowel