

Experiment 3: Intrusive Stops

1. Introduction

In this exercise, you are going to determine the circumstances in which a stop articulation is unintentionally produced. Because these stops are produced between two consonants, they are called “intrusive” stops. Examples of intrusive stops can be heard in many people’s pronunciations of *Chomsky* as [tʃam**p**ski], where the bold face [p] intrudes between the [m] and the [s]. In some cases, the intrusive stop has been so noticeable that it has become an intended part of the word, e.g. in the names *Thompson* and *Sampson*, which were originally *Thomson* and *Samson*. In this exercise, we want you to determine the circumstances in which stops intrude between consonants, and to explain why they intrude where they do and not elsewhere.

2. Method

You will each record two speakers, one male and one female, producing three repetitions of the words listed below, and then use PRAAT to determine whether a stop intrudes between the two underlined consonants. You will make your recordings in the sound booth in the lab, and then use PRAAT to determine whether an intrusive stop has occurred between the two consonants.

Words

tense
warmth
month
length
nymph
north
horse
harsh
gulf
health
pulse
Welsh
lens
wells
Brahms

Each of these words will be written a separate index card, and the stack of cards will be next to the laptop in Bartlett 8, to the left of Bartlett 6.

Detailed procedures.

- a. Recording is done in the sound booth in Bartlett 8.
- b. Turn on the Mackie amplifier. It is the box with lots of plugs on left end of the table.
- c. Unplug the laptop from its power supply and turn it on.
- d. Run the Audacity software from the desktop.
- e. Have your speaker put on the head-mounted microphone in the soundbooth. Turn on light but not the fan in the booth.
- f. Have them practice reading all the words at least once before you start recording.
- g. Instruct them to read the words in a casual way, without any especial care, in whatever way they would ordinarily say them. Make sure NOT to tell them ahead of time what the experiment is about.
- h. You can hear what they are saying over the headphones plugged into the amplifier.
- i. Click the record button (the large red dot) in the Audacity window and cue the speaker to start reading the words from the cards once recording starts.
- j. If the speaker stumbles over a word, have them repeat it.
- k. After they have read through the list once, have them shuffle the cards and read them all again. Repeat this step until you have at least four clear recordings of each word. We always record one more repetition than we plan to measure as a backup.
- l. Once the speaker has read all the words four times, stop the recording, and from the File menu, select export to .WAV, and choose a folder on a memory stick to save the files to.
- m. Shut down Audacity and the laptop and plug it back into its power supply.
- n. Turn off the Mackie.
- o. When you leave, make sure the door is locked.

3. Results

In reporting your results, you want to list for each speaker how many times an intrusive stop was produced for each word, and the duration in ms of each intrusive stop closure that occurred. You should report your results in the form of a table, listing one word in each row, following by four columns in which you list the number of tokens with intrusive stops produced by each speaker and the durations of each stop closure, as illustrated on the next page:

word	Male speaker		Female speaker	
	Number	Durations	Number	Durations
tense	2	43, 29	1	27
warmth	0		3	30, 21, 16
etc.				

Once you have done so, describe the contexts in which intrusive stops were and were not produced *in the most general terms possible*, by referring to classes of sounds rather than individual sounds. Once you have described the contexts where intrusive stops are and are not produced, try to explain why they appear in some contexts but not others. To do so, think about how the articulators must move from one sound to the next and how that might produce an intrusive stop along the way.