

### Ling 317: Assignment: How to define a syllable?

There is a somewhat lame joke that goes like this: “A semanticist, a syntactician, a morphologist, and a phonologist get into a car and drive to a wild party held at the LSA Summer Institute. Once there, they imbibe great quantities of spirits. All of them, that is, except one who has no alcoholic drinks. Which one? Answer (prepare yourself!): the morphologist. Why? She was the designated deriver (i.e., ‘driver’).” The punch line hinges on a pun which exploits the very similar pronunciation between ‘deriver’ and ‘driver’, differing supposedly only in the first being three syllables and the second, two. What is the phonetic property that gives rise to the extra syllable? Phonetic studies suggest that it is just the duration of the segment (I’m not going to bias the issue by saying what kind of segment it is, whether vowel or glide or ‘sonorant’) following the /d/. Similar cases involve the syllabically minimal pairs ‘blow’ vs ‘below’ and ‘lightning’ (a meteorological phenomenon) vs. ‘lightening’ (making something light).

In this assignment, you are asked to manipulate the duration of naturally produced tokens of the above 6 words and assessing whether simple change in duration can turn one of the syllabically contrasting pairs into the other.

To do:

1. Download the .wav file “blow” from the Course Materials. You can use either Praat or WaveSurfer to listen to the samples and to manipulate their relevant parts.
2. Make a copy of the original so that you can compare the altered version with the original.
3. Display one of the copies acoustically.
4. Measure the durations of the relevant segments: the /l/ in ‘blow’ and ‘below’, the “r” in ‘driver’ and ‘deriver’ (this might be tricky; use your best judgment & rely on spectral and amplitude (intensity) parameters), the /n/ in ‘lightning’ and ‘lightening’. Also to the extent that they can be measured, measure the duration of the reduced vowels between the initial stop and the /l/ or “r”, respectively, in ‘below’ and ‘deriver’.
5. Then lengthen (or shorten) the relevant segments to see if you can turn one member of these minimal pairs into the other & vice-versa. What does ‘relevant segments’ mean? Play around and try to reach some decision on this yourself.
6. How to lengthen or shorten segments: you need to identify and demarcate one complete glottal cycle. You either delete such to shorten; you copy and reinsert one or more copies to lengthen. NOTE (and this is very important): cuts of glottal periods must be made at zero-crossings in the waveform, i.e., where the signal crosses the zero line. See the figures of a correct and incorrect demarcation of a glottal period.
7. So: report your findings (they may differ depending on which minimal pair is involved) and offer comments on the validity or usefulness of the concept of the ‘syllable’ to account for your results.
8. Additional note: if you are unsure of your own judgments on the lexical identity of these words after manipulating them (due to your having awareness of what they were originally and what

you were trying to achieve), try them out on other listeners (native speakers of English) who don't have the same biases.

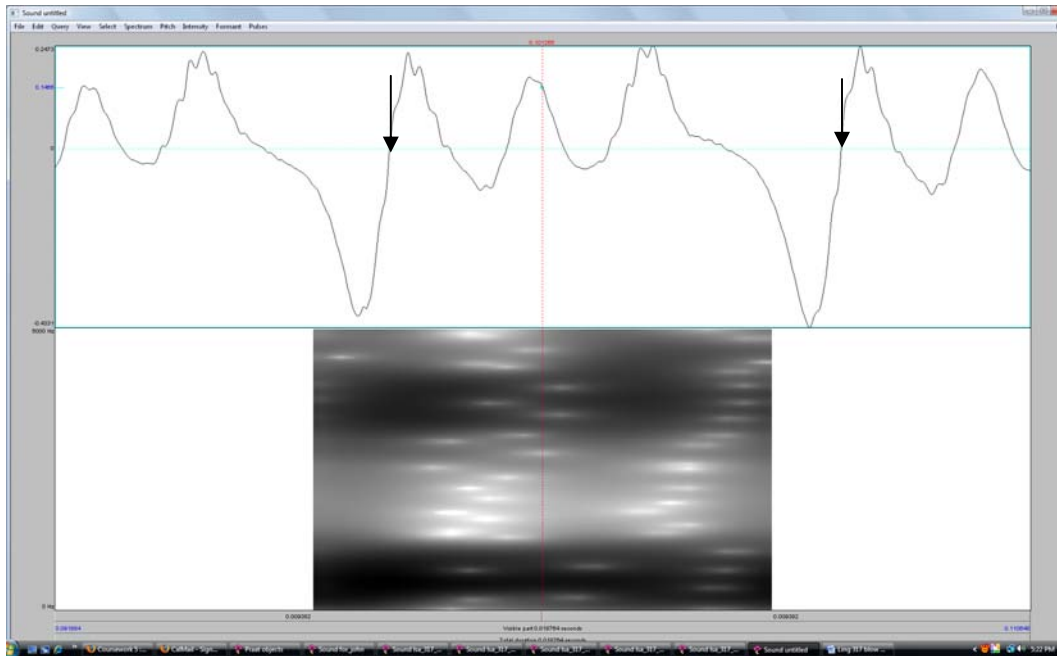


Fig. 1: The right places to demarcate a glottal period: at zero-crossings.

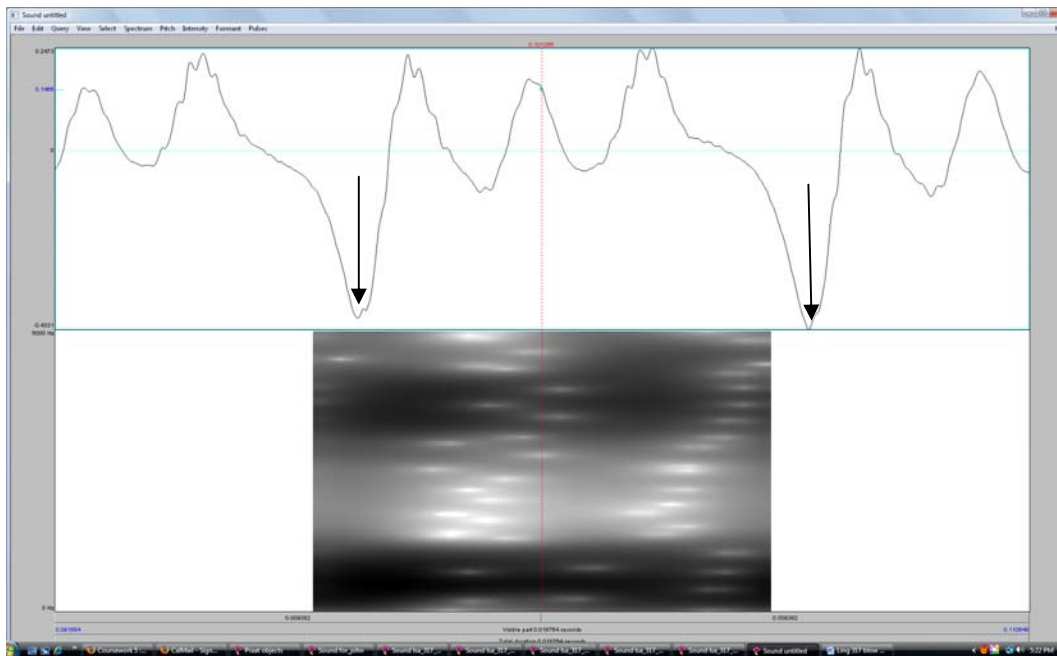


Fig. 2: The wrong places to demarcate a glottal period: at other than zero-crossings.