

## Homework 3

### LIN101 Fall, 2024, University of Toronto

Name:

Student number:

Collaborator(s):

#### Instructions

To submit your homework, you can either download this file to fill it out online, or you can create an online copy and work on it online.

To download it, go to File > Download > choose the .docx format. Once you have filled it out, export it to a pdf and upload it to Quercus.

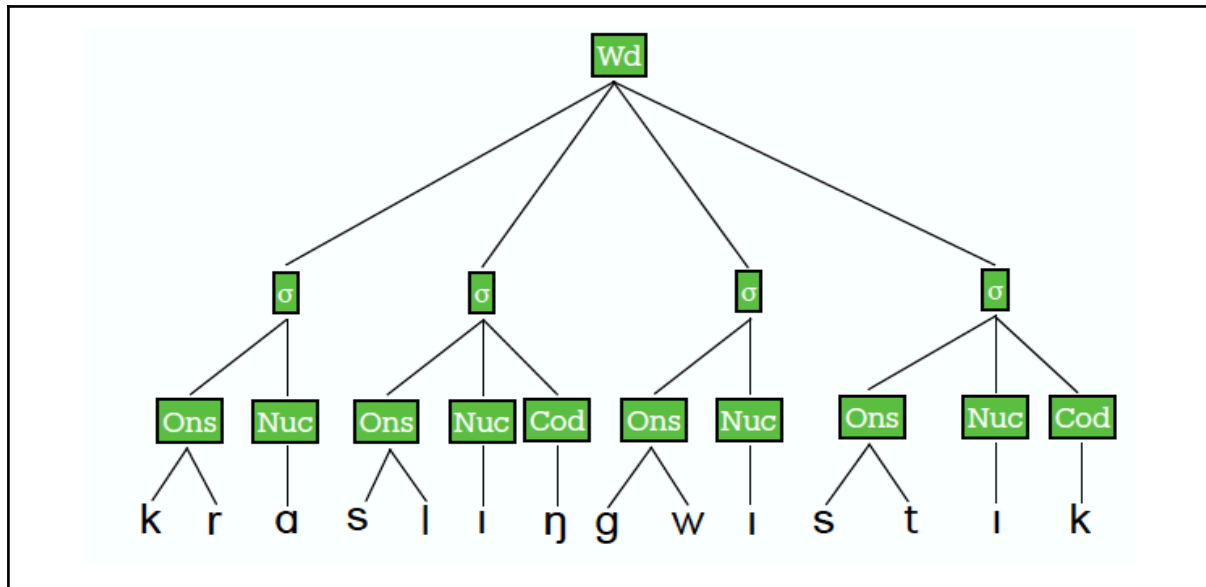
To fill it out online, go to File > Create copy. Once you have filled it out, download it as a pdf and upload it to Quercus.

Please type your answers, do not submit handwritten assignments.

Reminder: You can work together with others, but you must always write up your answers on your own. If you worked together with someone, indicate their name(s) and student numbers on the submitted document.

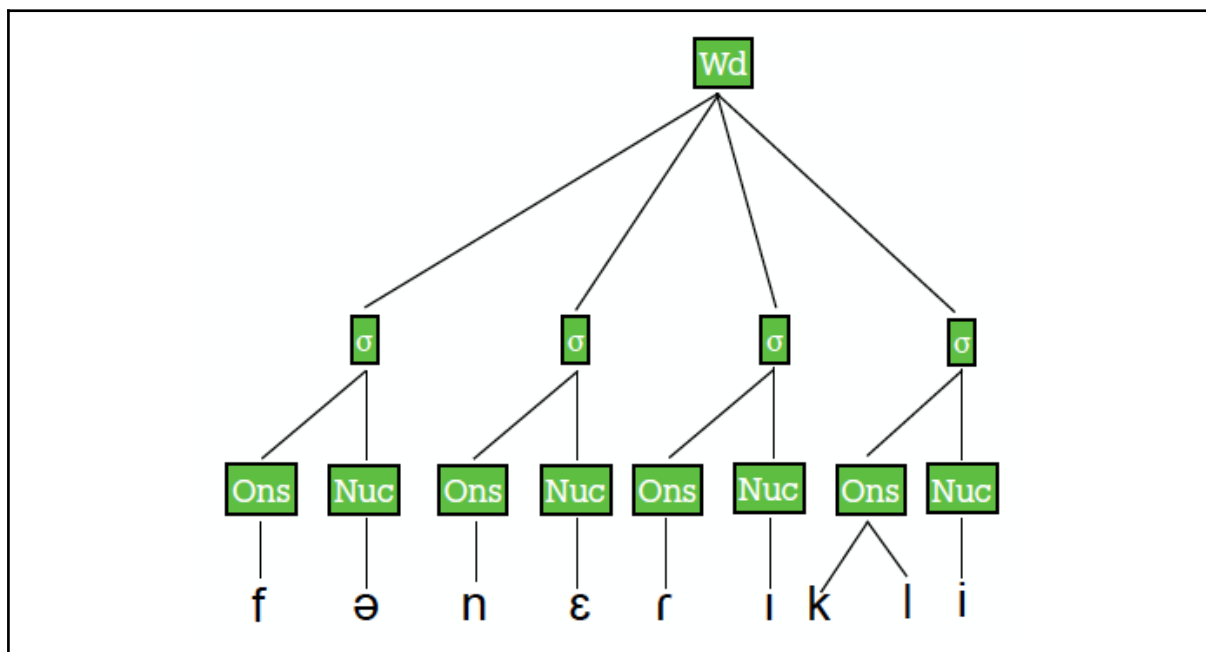
1. Draw the syllable structure of the following English words. Draw it by hand, take a picture of it, and then paste the picture in the box below. (8pts)

a. crosslinguistic ['krasɪŋwɪstɪk]



- The first syllable boundary should fall between ɑ and s
- The second syllable boundary should fall between ŋ and g
- Third boundary: between [ɪ] and [s] or between [s] and [t]  
If between [ɪ] and [s]: maximize onset + English words can start with [st]  
If between [s] and [t]: does not violate SSP

b. phonetically [fəˈnɛrɪkli]



2. Make up 4 nouns for an artificial language, based on the following criteria (6pts)

- Your language should only use sounds of English (not necessarily all sounds of English),

but it does not need to obey English phonotactics.

- Nouns in this language are at least 2 syllables long.
- Your language should have (C)(C)V syllables only.
- This language would observe the Sonority Sequencing Principle
- Your language should be a non-tonal language.
- Words in this language bear predictable stress which always falls on the penultimate syllable. Do not mark secondary stress.

Provide IPA transcriptions of your words in square brackets indicating where primary stress falls. Indicate syllable boundaries. Provide the translation of those words in single quotes, as if it was a real dictionary.

Example: [tla'li.pi] 'phonology'

Example words:

[pli'no.za] 'piglet'

[ka'na.ra] 'Canary Islands'

[hu.ba'dri.ka] 'cortisol'

[plə'ple.da] 'shopping cart'

Checklist, each feature worth 1pt if all four words are consistent with them:

- ☐ all sounds come from NA English
- ☐ 2-syllable-long words
- ☐ (C)(C)V syllable structure
- ☐ SSP observed
- ☐ syllable boundaries marked with the correct notation
- ☐ penultimate (primary) stress in words with at least 2 syllables

### 3. Phonemic analysis

Consider the following dataset from Eastern Duzorbian.

[k<sup>h</sup>] stands for an aspirated voiceless velar stop

[k<sup>ˀ</sup>] stands for an unreleased voiceless velar stop ([k] without a puff of air)

[k <sup>h</sup> ol]	'knife'	[k <sup>h</sup> ayap <sup>ˀ</sup> ]	'monophthong'
[kbil]	'eel'	[krayap <sup>ˀ</sup> ]	'diphthong'
[k <sup>h</sup> umig]	'computer'	[p <sup>h</sup> uk <sup>ˀ</sup> ]	'package'
[mik <sup>ˀ</sup> ]	'acorn'	[gilag]	'school'
[klu]	'mountain'	[mig]	'winter'
[ladak <sup>ˀ</sup> ]	'sea'	[p <sup>h</sup> ik <sup>ˀ</sup> ]	'raccoon'
[laguna]	'laguna'	[gitom]	'sofa'
[laku]	'fairness'	[graun]	'ocean'
[k <sup>h</sup> ilo]	'kilogram'	[trikon]	'march'
[igo]	'teaspoon'	[leken]	'yoke'
[yegen]	'city'	[k <sup>h</sup> urga]	'pumpkin'
[olko]	'octopus'		

- a. List the environments of the following sounds.

[k <sup>h</sup> ]	[k]	[k <sup>ʔ</sup> ]	[g]
#_o	#_b	i_#	i_#
#_u	#_l	a_#	a_u
#_i	a_u	u_#	i_o
#_a	l_o		e_e
	#_r		#_i
	i_o		a_#
	e_e		#_r
			r_a

b. State generalizations about the environments in which these sounds can occur.

[k<sup>h</sup>] occurs word initially and is followed by vowels. (1pt)

[k] can occur word-initially if followed by consonants, or word-medially (between vowels or preceded by l/sonorants) (1pt)

[k<sup>ʔ</sup>] occurs word-finally (1pt)

[g] occurs word-initially, word-medially and word-finally (and can be surrounded by vowels or consonants/sonorants) (1pt)

c. Are the sounds [k<sup>h</sup>], [k], [k<sup>ʔ</sup>] and [g] allophones of the same phoneme or allophones of different phonemes?

[k<sup>h</sup>], [k], and [k<sup>ʔ</sup>] are allophones of the same phoneme (1pt)

[g] is an allophone of a different phoneme. (1pt)

d. Justify your answer to c. by your observations on the distribution of these sounds. In your answer, make reference to the distribution of these sounds, as well as to natural classes.

[k<sup>h</sup>], [k], and [k<sup>ʔ</sup>] are in a complementary distribution. (1pt)

The phoneme should be /k/ (with [k<sup>h</sup>] and [k<sup>ʔ</sup>] as its allophones) (1pt)

because the distribution of [k<sup>h</sup>] and [k<sup>ʔ</sup>] is more specific while that of [k] is more general (1pt)

But [g] and [k]/[k<sup>h</sup>]/[k<sup>ʔ</sup>] are contrastive (1pt)

because each of [k], [k<sup>h</sup>], and [k<sup>ʔ</sup>] overlaps with [g] in their distributions (1pt)

#### 4. Tones (3)

Imagine that a young female speaker and an adult male speaker of Bemba, a tonal language, produce the pair of words, pélà and βúlá. The last syllable [la] in both words is the same string, they differ in their suprasegmental properties alone.

pélà (HL) ‘give’

βúlá (HH) ‘take’

Both speaker’s fundamental frequency (F0) was measured while producing these two words. Table 1 shows the mean F0 value of their production of the final syllable [la] in both words.

	là	lá
Young female speaker	200Hz	400Hz
Adult male speaker	90Hz	150Hz

Table 1. The production of the last syllable of the Bemba words pélà and βúlá by two native speakers

How can we explain the fact that the high tone word βúlá is produced at a lower fundamental frequency by the adult male speaker than the young female speaker’s production of the low tone?

Model answer:

Even though high tones are produced with high pitch and low tones, with low pitch, the exact fundamental frequency (F0) values they are produced with vary by speaker. The pitch range of the young female speaker is probably much higher than the pitch range of an adult male speaker, that is, the young girl naturally speaks in a much higher pitch compared to the adult male speaker. High tone produced by an adult male speaker would thus translate into Hz values found in the upper range of the given speaker, which is why we refer to it as “high pitch” even though in absolute terms, the value in Hz is not even as high as the young female speaker’s low pitch.