Assignment 3

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ling 20: Introduction to Linguistic Analysis
Due: 8:00am, 24 April 2022

1 *5 points*

As we discovered in class, not all sequences of English sounds are possible English onsets. Out of the following onsets, only the ones in the column on the left are allowed in English. The ones in the column on the right do not conform to the phonotactic constraints of English.

possible onsets	*impossible onsets*
[st]	*[nb]
[sf]	*[tm]
[dʒ]	*[mp]
[z]	*[mŋ]
[sk]	*[nm]
[sn]	*[pk]
[g]	*[tg]
[fl]	*[kn]
[θɹ]	*[pp]
[vj]	*[mk]
[bl]	*[tp]

State a single phonotactic constraint on English onsets that prohibits all of the impossible onsets but still allows the possible ones. This constraint should not involve disjunction ("X *or* Y"). You will need to use articulatory features to write the constraint.

2 *5 points*

For each of the following pairs of sounds, please provide a minimal pair showing that they are allophones of different phonemes in English. Write this minimal pair both in English orthography and in the IPA.

a) [p] and [k]

b) [l] and [s]

c) [æ] and [ɛ]

d) [e͡ɪ] and [ɛ]

e) [ɹ] and [t]

3 *12 points*

In Cochabamba Quechua, the sounds [i, u] and [e, o] are in complementary distribution. What are the phonemes and allophones? State a phonotactic constraint that restricts the vowels' distribution and a rule that turns one set into the other.

[kiru]	'tooth'	[saqej]	'leave'
[misi]	'cat'	[kusa]	'good'
[ʎawqej]	'rummage'	[ajqej]	'escape'
[q'osɲi]	'garbage'	[qosa]	'husband'
[q^{h}arqoj]	'banish'	[qeru]	'vase'
[rikuj]	'see'	[ʎip^{h}ij]	'shine'

a) State a generalization about when [i,u] and [e,o] appear, respectively.

b) What phonemes are [i,u] and [e,o] allophones of?

c) State a phonotactic constraint that prohibits the underlying form in the right environments. Write this constraint using IPA symbols.

d) Now state this constraint using articulatory features instead of IPA symbols. The constraint must be a single statement ("It is not possible to have ...") and must not involve disjunction ("X *or* Y").

e) Based on this constraint, provide two rules that change the underlying form in the right environments. Use IPA symbols in these rules.

f) Now formulate one single rule using features instead of IPA symbols.

4 *12 points*

Compare the alveolar fricatives and the postalveolar fricatives in the following data from Southern Congo. The voiced fricatives are in complementary distribution with each other, and so are the voiceless fricatives.

[kesoka]	'to be cut'	[ŋkoʃi]	'lion'
[kasu]	'emaciation'	[ʒima]	'stretch'
[kunezulu]	'heaven'	[aʒimola]	'alms'
[nzwetu]	'our'	[lolonʒi]	'to wash houses'
[zevo]	'then'	[zeŋga]	'to cut'

a) State a generalization about when the alveolar fricatives and the postalveolar fricatives appear, respectively.

b) What phonemes are the alveolar and postalveolar fricatives allophones of, respectively?

c) State a phonotactic constraint that prohibits the underlying forms in the right environments. Write this constraint using IPA symbols.

d) Now state this constraint using articulatory features instead of IPA symbols. The constraint must be a single statement ("It is not possible to have ...") and must not involve disjunction ("X *or* Y").

e) Based on this constraint, provide a rule that changes the underlying forms in the right environments. Use IPA symbols in this rule.

f) Now formulate this rule using features instead of IPA symbols.