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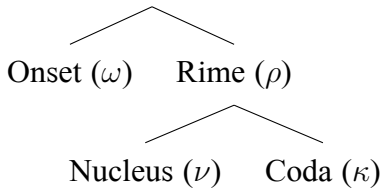
Discussion Handout 3

September 23, 2021

(1) Today:
- a. Syllables and Stress
- b. Allophony in English
- c. Cross-linguistic Variation of Vowels

Syllables and Stress

(2)



(3)
- a. Nucleus is mandatory (cross-linguistically)
- b. Onset and Coda are optional in English
- c. There are languages in which the onset is mandatory
- d. There are languages in which the coda is banned

(4) Syllabic = forms the nucleus of a syllable.
- a. Consonants (other than glides) can be syllabic:
  - (i) [l̩] - [ˈæpl̩] ‘apple’
  - (ii) [m̩] - [ˈb̥lɔsm̩] ‘blossom’
  - (iii) [n̩] - [ˈb̥ʌɾn̩] ‘button’
  - (iv) [ɹ̩] - [ˈb̥ɛɾɹ̩] ‘better’: also written [ɚ] or [ɝ]
- b. In English, syllabic consonants are always unstressed
- c. Glides cannot, by definition, be syllabic: [j̩] = [i]; [w̩] = [u]

(5) Stress is assigned to syllables (not individual segments)
- a. Primary stress: vertical line near top [ˈa]
- b. Secondary stress: vertical line near bottom [ˌa]
- c. Stress marks appear before the stressed syllable.
- d. Syllabic markers appear under!!

Allophony in English

(6) English Allophony (all of these should be denoted in narrow transcriptions):

a. Vowels nasalize before nasal codas: 'win' /ˈwɪn/ → [ˈwĩn]

b. /t/ and /d/ become flaps [ɾ] between approximants (including vowels) when the following syllable is unstressed.

(i) 'flatter' /ˈflætɚ/ → [ˈflæɾɚ]

(ii) but not 'ideal' [aɪˈdiɬ]

(iii) /n/ can also flap in the same environment to become a nasalized flap [ɾ̃]: /ˈwɪnɚ/ → [ˈwĩɾ̃ɚ]

c. /t/ can become a glottal stop [ʔ], especially before nasals: 'button' /ˈbʌtn̩/ → [ˈb̥ʌʔn̩]

d. a voiceless stop is aspirated when initial in a word or stressed syllable:

(i) 'pick' /ˈpɪk/ → [ˈpʰɪk] and 'camper' /ˈkæmpɚ/ → [ˈkʰæ̃mpɚ]

(ii) but not 'spin' [spĩn]

e. a voiced plosive is optionally devoiced utterance initially: 'boat' /ˈboʊt/ → [ˈb̥oʊt]

f. approximant consonants {ɹ j w l ɾ} devoice after a voiceless consonant. In these instances, the voiceless consonant does not aspirate: 'play' /ˈpleɪ/ → [ˈp̥leɪ]

g. /t/ is usually affricated (becomes affricate [tʃ] before /ɹ/: 'tree' /ˈtɹi/ → [ˈtʃ̟ɹ̥i]

h. /l/ becomes velarized 'dark' [ɬ] in coda position: 'bell' /ˈbɛl/ → [ˈb̥ɛɬ]

i. Word finally, voiceless stops are optionally unreleased [tˀ] and/or glottalized [t͡ʔ]: /ˈkæt/ → [ˈkʰætˀ] or [ˈkʰæt͡ʔ]

(7) Just because these are allophonic in English does not mean they are for other languages:

a. French: lot 'prize' [ˈlo] vs. long 'long' [ˈlõ]

b. Spanish: peto 'overalls' [ˈpeto] vs. pero 'but' [ˈpeɾo]

c. Tahitian: ata 'cloud' [ˈata] vs. a'a 'root' [ˈaʔa]

d. Mandarin: 皮 'skin' [ˈpʰi35] vs. 鼻 'nose' [ˈpi35]

e. Icelandic: rak 'wick' [ˈraːk] vs. hrak 'worthless thing' [ˈr̥aːk]

(8) Vowel length allophony (not typically marked in narrow transcription)

a. Vowels are allophonically slightly longer before voiced plosives

b. Voiceless plosives are longer than voiced plosives; so vowels compensate by being longer in front of voiced plosives (compensatory lengthening)

c. Unstressed vowels are shorter and more centralized than their stressed counterparts

d. Vowels are shorter in longer words (want to say a word quickly; many syllables means shorter time for each syllable)

e. Vowels are longer in open syllables (also compensatory lengthening; no coda mean the vowel has to lengthen to 'fill' the rime

f. Final syllables of words tend to be longer

Cross-linguistic Variation of Vowels

(9) Other phonemic differences for vowels other languages:

a. Rounding: English has rounded and unrounded vowels, but all of them are distinguished in multiple dimensions ([u] vs. [i] differs in frontness as well as roundness.
   (i) Rounding distinction in front vowels: French distinguishes /y/ and /i/:
   lu ‘read’ [ˈly] vs. loup ‘wolf’ [ˈlu]
   (ii) Rounding distinction in back vowels: Vietnamese distinguishes /u/ and /ɯ/:
   tu ‘to drink’ [ˈtu3] vs. tư ‘fourth’ [ˈtɯ3]

b. Phonemic length: Latin: malum ‘evil’ [ˈmalum] “evil” vs. malum ‘apple’ [ˈmaːlum]
   (i) Also phonemic length (gemination) for consonants:
   Latin: anus ‘old woman’ [ˈanus] vs. annus ‘year’ [ˈanːus]

c. Rhoticity: Badaga: ‘to go’ [ˈoːgu] vs. ‘inside’ [ˈoˑge]

(10) Cardinal Vowels and Rounding Asymmetry:

a. ‘reference points’ in vowel space; not representative of any language
b. Primary: { i e ɛ a ɑ ɔ o u } (only rounded in non-low back vowels)
c. Secondary: { y ø œ ɶ ɒ ʌ ɤ ɯ }
d. Many languages: all back vowels = rounded, all front vowels = unrounded

	Front	Back
Rounded	less common	common
Unrounded	common	less common

Some Vowel Inventories

(11) Bengali, Italian, Yoruba:

i u
e o
ɛ ɔ
a

(12) Hungarian:

i • y u
e • ø o
a

(13) Lao:

i ɯ • u
e ɤ • o
ɛ ɔ
a

(14) Occitan: (What might cause it to look like this?)

i • y u
e o
ɛ
a

Practice

(15) For the following broad IPA transcriptions;

a. Write down the English words they represent
b. Transcribe them into narrow IPA (using the generalizations in (6))

(16)
a. /ˈdɹim/
b. /əˈtɛnʃn̩/
c. /ˈpik/
d. /ˈmænɚ/
e. /ˈlætəɹl̩/
f. /ˈstim/
g. /ˈtwɪtɚ/
h. /ˈtɹʌbl̩/
i. /ˈbleɪm/
j. /ɪmˈpɑsəbl̩/

(17) For the following group of sounds, what class of sounds do they belong to? (be as specific as you can)

a. { i u ʊ ʏ y }
b. { k x c qʰ ɴ χ ʁ }
c. { ɱ m ɲ ŋ }
d. { ɲ ç j ʎ }
e. { ɮ ɬ ɭ ʟ }
f. { s z tʃ ɖʐ̩ } (but not θ and not t)
g. { ʔ ʕ ʜ }
h. { ɪ ʊ ɛ ɔ æ }
i. { y ø œ o ɔ }
j. { tʰ s q c θ ʔ }
k. { n l ŋ ɰ }
l. { ø l ɹ ʉ ɪ j }

Practice Answers

(18) For the following broad IPA transcriptions;

a. Write down the English words they represent
b. Transcribe them into narrow IPA (using the generalizations in (6))

(19)
a. /ˈdɹim/ = ‘dream’ [ˈd̥ɹĩm]
b. /əˈtɛnʃn̩/ = ‘attention’ [əˈtʰɛ̃nʃn̩]
c. /ˈpik/ = ‘peek’ or ‘peak’ [ˈpʰikˀ]
d. /ˈmænɚ/ = ‘manner’ [ˈmæ̃nɚ̃]
e. /ˈlætəɹl̩/ = ‘lateral’ [ˈlærəɹl̩]
f. /ˈstim/ = ‘steam’ [ˈstĩm]
g. /ˈtwɪtɚ/ = ‘twitter’ [ˈtwɪɾɚ]
h. /ˈtɹʌbl̩/ = ‘trouble’ [ˈtʃɹʌbɬ]
i. /ˈbleɪm/ = ‘blame’ [ˈb̥lẽĩm]
j. /ɪmˈpɑsəbl̩/ = ‘impossible’ [ĩmˈpʰɑsəbɬ]

(20) For the following group of sounds, what class of sounds do they belong to? (be as specific as you can)

a. { i u ʊ ʏ y } = high vowels
b. { k x c qʰ ɴ χ ʁ } = dorsal consonants
c. { ɱ m ɲ ŋ } = nasal stops
d. { ɲ ç j ʎ } = palatal consonants
e. { ɮ ɬ ɭ ʟ } = lateral consonants
f. { s z tʃ ɖʐ̩ } (but not θ and not t) = sibilants
g. { ʡ ʢ ʜ } = epiglottal consonants
h. { ɪ ʊ ɛ ɔ æ } = lax vowels
i. { y ø œ o ɔ } = rounded vowels
j. { tʰ s q c θ ʔ } = voiceless consonants
k. { n l ŋ ɯ̹ } = sonorants
l. { ø l ɹ ʉ̞ ɪ j } = approximants