

Representing syllables and syllable structure

Work through the following data sets, considering what they suggest about how syllables and syllable structure should be represented in our phonological model.

I. How should restrictions on segment ordering and segment position be expressed?

The first two problems are famous examples of cases where reference to the position of a segment in a syllable is claimed to be needed in order to state a full generalization. Do you agree? **Can reference to syllable structure be avoided in discussing data sets (1) and (2)?**

(1) English aspiration

(a) Consider the following English words, all of which contain voiceless stops.

pan	span	preen	spree	appear	approve	compare	astute
tar	star	tray	stray	attach	attract	content	askew
kin	skin	cream	scream	accord	across	conclude	ascribe

- Examine your own speech: Which of the stops are aspirated? (If you're feeling empirical, try recording yourself and checking with Praat.)
- Can you characterize the circumstances under which voiceless stops are aspirated in English? (You will probably want to transcribe the relevant parts of these words phonetically as you consider this question.)

(b) Now consider these words. Do these pattern as you would expect, based on the analysis you have developed in (a)?

applaud Atlantic acclimatize

(2) English “[l]” problem

(from Gussenhoven & Jacobs 1998: 165)
(aspiration is not transcribed in the source)

British English light vs. dark [l]

<i>Light</i>		<i>Dark</i>	
[laɪ]	‘lie’	[hɔːɫ]	‘hall’
[lʊk]	‘look’	[kɪɫ]	‘kilt’
['væli]	‘valley’	['mɪɫdjuː]	‘mildew’
[ɪ'tæljən]	‘Italian’	['mɔːɾɪ]	‘moral’

- Does your distribution of light vs. dark [l] in these same words differ? If so, how would you characterize the phonological difference between your dialect and that shown here?

(3) **Hanunoo** (Philippines) (adapted from Schane 1973)

ʔupat	‘four’	ʔupati	‘make it four’
ʔunum	‘six’	ʔunumi	‘make it six’
tulu	‘three’	tuluhi	‘make it three’
ʔusa	‘one’	ʔusahi	‘make it one’

Schane claims that the alternating [h] is not part of the root (although he doesn’t give his reasoning). If we accept this claim, how can we account for the behavior of the [h]? Note: There is actually more than one possible analysis, but they have something fundamental in common with respect to syllable structure.

II. Further exploring the relevance and structure of syllables

(4) **Cairene Arabic emphasis spread** (adapted from Broselow 1979)

All Arabic dialects contain what are traditionally called *emphatic* or pharyngealized sounds. Acoustically, they are characterized by a lowered second formant, and articulatorily by a constriction in the pharyngeal cavity caused by a retracted tongue root. We can assume that the phonological feature distinguishing emphatic sounds is [PHARYNGEAL] (sometimes called [RADICAL]). For convenience, emphatic sounds are represented below with capital-letter symbols.

The spreading of emphasis in the Cairene dialect of Arabic is illustrated by the following forms. The underlying source of emphasis is the following sounds, which are contrastively (unpredictably) pharyngealized: /T D S Z L R/.

- What factor determines the extent of emphasis spread in Cairene Arabic?
- Given that factor, why does /Ra:gil/ ‘man’ become [RA:gil] (*[RA:GIl], *[RA:GIL]), and why does /Ragle:n/ ‘two men’ become [RAGle:n] (*[RAGLE:N], *[RAGle:n])?
- Does your analysis lead you to see any phonological differences between Cairene Arabic and English as discussed in data set (1)?

/ba:t/	→	[ba:t]	‘he spent the night’
/ba:T/	→	[BA:T]	‘armpit’
/ti:n/	→	[ti:n]	‘figs’
/Ti:n/	→	[TI:N]	‘mud’
/Ra:gil/	→	[RA:gil]	‘man’
/Ragle:n/	→	[RAGle:n]	‘two men’
/faSlu/	→	[FASlu]	‘his term’
/La:Tif/	→	[LA:TIF]	‘pleasant’ (masc.)
/LaTi:fa/	→	[LATI:fa]	‘pleasant’ (fem.)
/faDDal/	→	[FADDAL]	‘he preferred’
/faDDal#ilwalad/	→	[FADDAlilwalad]	‘he preferred the boy’

III. Stress placement and syllable structure

In many languages, there are two types of syllables, traditionally known as “heavy” and “light.” Heavy syllables often take precedence over light syllables in stress placement. Note that a syllable of the shape (C)V, with a short vowel and no coda, is cross-linguistically light (although in some languages, CV with a full vowel may be “heavier” than Cə with a reduced vowel).

In data sets (5) and (6), consider these questions:

- How is stress placement determined in a word with no heavy syllables?
- Does the presence of a heavy syllable disrupt this basic pattern? If so, what can we conclude about the types of syllables that count as heavy?

(5) **Sierra Miwok** (Amerind, California)

Syllable boundaries are marked by means of a period (“.”). [V:] indicates a long vowel.

há:.naʔ	tʃím.tej.jaʔ	ka.lán.pa:
tʃá:.ma.jiʔ	húf.fe:.piʔ	ho.jé.no
já:.ja:.liʔ	pa.lát.ta.taʔ	ka.wá:.tʃi
hán.naʔ	pát.ka.jiʔ	wa.ták.saʔ
wít.ta.piʔ		

(6) **Selkup** (Ostyak-Samoyed, northern Eurasia)

- Note: Cross-linguistically, unless other factors like morphological structure intervene, a C between two V is syllabified as an onset (VCV → V.CV).

kə	‘winter’	qó:kitilʲ	‘deaf’
kípó:	‘tiny’	kanaŋmí:	‘our dog’
ámirna	‘eats’	ilisó:mít	‘we lived’
qólʲcimpatʲ	‘found’	sæ:qɪ	‘black’
pünakisó:	‘giant!’	kárman	‘pocket’
úŋŋinti	‘wolverine’	səri	‘white’
ú:cɪqo	‘to work’	ú:cak	‘I work’
u:có:mít	‘we work’	ú:cikkak	‘I am working’
ú:citilʲ	‘working’ (part.)	ú:cilæ	‘working’ (gerund)
u:cikkó:qɪ	‘they two are working’		
qúm̩m̩	‘my friend’	qummí:	‘our friend’
qumo:qlɪlʲ:	‘your two friends’		
qúm̩t	‘human beings’	qumó:qɪ	‘two human beings’
qúm̩m̩n	‘human being’ (gen.)	qúm̩m̩	‘human being’ (acc.)
qúm̩nɪk	‘human being’ (dat.)		