

BBN-ANG-243 Phonological Analysis #5

SYLLABLES

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splitting words

by meaning

heart-less-ness (= morphemes)

by sound

ha-rus-pex (= syllables)

the sonority hierarchy

- ↑ low vowels
- ↑ mid vowels
- ↑ high vowels/glides
- ↑ **r**
- ↑ **l**
- ↑ nasals
- ↑ obstruents

sonority sequencing

- in a syllable, sonority must fall away from the sonority peak
- since **p** < **l** (ie the sonority of **p** is smaller than that of **l**)
 - **p****l****a****n** is possible, **l****p****a****n** is not possible as a syllable
 - **a****l****p** is possible, **a****p****l** is not a possible syllable
 - **a****p****l** is possible as **two** syllables where both **a** and **l** are a sonority peak
 - note both **a****p****l** and **a****p****ə****l** (= *apple*) contain two sonority peaks, ie two syllables
l is a sonority peak (= syllabic) in **a****p****l**, but it is not in **a****p****ə****l** (where **ə** is a peak)
- so **a****p****ə****l** is two syllables, but are those syllables **a**.**p****ə****l** or **a****p**.**ə****l**?

onset maximization

onset = the consonant(s) at the beginning of a syllable (coda = the consonant(s) at the end)

1. **VCV** → **V.CV** (*apple* a.pəl, *matter* ma.tə, *savanna* sə.va.nə, *kilometre* ki.lo.mi.tə)

2. **VCCV** →

i. **V.CCV**, if sonority rises (*Petra* pe.trə, *sigla* si.glə, *zebra* ze.brə)

ii. **VC.CV**, if sonority falls (*panda* pan.də, *finger* fiŋ.gə, *shelter* ʃel.tə)

iii. **VC.CV**, if sonority is level (*chimney* tʃim.nij, *phosphor* fos.fə, *Baghdad* bag.dad, *Oscar* os.kə, *mixer* mik.sə)

nb onset maximization = coda minimization

but

at.ləs, aθ.lijt, at.məsfiː, əd.majə, eθ.nik, hip.notik, ab.nə, ək.nolidʒmənt, ak.mij,
ig.noː, stig.mə, əwn.lij, ham.lət, hen.rij, wol.rəs, al.win

- sonority rises in the highlighted clusters, yet they are not (commonly analysed as) onsets
- the common property of these clusters is that they cannot occur at the beginning of a word!

uniform boundaries

- hypothesis: syllable boundaries coincide with word boundaries, therefore
 - **a.tləs** is impossible because $*\#t\mathbf{l}$ and hence **tl** cannot be an onset
- facts that weaken this hypothesis (commonly assumed to be self-evident):
 - *Oscar* is **os.kə** although **sk** is possible word initially
 - **nb** it cannot be **o.skə** if **o** is not possible word finally
 - *apple* is **a.pəl** although **a** is not possible word finally
 - in fact, some argue it is **ap.əl** exactly for this reason
 - but then how to syllabify *mirror* **mirə**?
 - **mi.rə** is no good, since $*e\#$
 - **mir.ə** is no good, since $*r\#$
- that is, the "uniform boundaries principle" is **not tenable**

another problem with connecting syllable boundaries to word boundaries

we do not have a definitive list of what is and what is not possible word initially and word finally

- **sf** is rare word initially (*sphere, sphincter, sphinx*), do we expect **sf** to occur syllable initially?
is *phosphor* **fo.sfə**?
- **lf** is very rare word finally (only *Welsh, Walsh*), do we expect **lf** to occur syllable finally?

why have syllables in the first place?

- morphemes do, but syllables do not have phonology-external foundations:
 - we know that *rowboat* is *row* + *boat* because we know that *row* and *boat* occur elsewhere with the same meaning
 - but how do we know that *robot* is *ro.bot*? or whether it is *ro.bot* or *rob.ot*?
 - more importantly why do we want to know this? what is it useful for?

conditioning allophony 1: aspiration

	aspirated	not aspirated
t	ten, atom, ratan	stem, after, rat
p	Apollo, ampulla, harper	aspire, wasp, whisper
k	car, Ken, quit	scar, sketch, squid

- hypothesis: "syllable-initial" fortis plosives are aspirated
 - so *ab.stain*, *a.spire*, *whi.sper*, etc
 - but *a.fter*, *Ka.ffka*?

conditioning allophony 2: prefortis clipping (PFC)

V shorter	V longer
bat	bad
latter	ladder
pence	pens
pencil	frenzy

hypothesis: PFC occurs before fortis obstruent in the same syllable

- but there is also PFC in *absolute*, *Agfa*, *Hudson* vs *ob[z]ervation*, *advert*, *Pud[z]ey*:
does this presuppose *abs.olute*, *Agf.a*, *Huds.on*?

conditioning allophony 3: flapping

flapped	not flapped	hypothesis
á t om	a t ómic	at.om vs a.tomic
wín t er	con t áin	wint.er vs con.tain

hypothesis: flapping occurs in coda

- but then why aren't word-final **t**'s flapped?
- what is the syllabification of **átòl** (where the **t** is not flapped)?

conditioning allophony 4: clear & dark ɫ

clear ɫ	dark ɫ
ɫap, cɫap	paɫ, heɫp
feɫlow	fiɫter
kiɫ it, kiɫ you	kiɫ me

hypothesis: ɫ is clear in the onset, dark elsewhere

- this requires onset maximization to always apply: *fellow* must be **fe.ɫəw**, not **fel.əw**
- problem: clear ɫ in *kiɫ you*, this ɫ can hardly be in an onset

r dropping

a strong argument for assuming syllables was the distribution of **r** in nonrhotic accents

r present	r absent
red, bread	her, herb
very	verse
hear it	hear you

hypothesis 1: **r** is deleted in coda

hypothesis 2: word-final coda "resyllabifies" if next morpheme is vowel initial

- syllables are only necessary here if we presuppose that **r** is deleted
- alternatively, we can say **r** is only possible before a vowel

syllabicity and sonority

set	members	syllabic
nonhigh vowels	e a o ə	✓
high Vs, sonorant consonants	i/j u/w l r m n ŋ	%
obstruents	v ð z ʒ f θ s ʃ b d dʒ g p t tʃ k	✗

moraicity, syllabicity, stress and sonority

set	members	moraic	syllabic	stressed
nonhigh vowels	e a o	✓	✓	✓
schwa	ə	✓	✓	%
high Vs/glides	i/j u/w	%	%	%
liquids, nasals	r l m n ŋ	%	%	✗
obstruents	v ð z ʒ f θ s ʃ b d dʒ g p t tʃ k	%	✗	✗
	h	✗	✗	✗