Syllabification

LING 451/551

Winter 2011

Syllable structure

- Predictable
  - Languages generally lack minimal pairs
    - *[a.tra] vs. [at.ra] (within same language)
- Rules of syllabification
  - partly universal
    - σ Assignment (Hayes)
    - Onset Formation
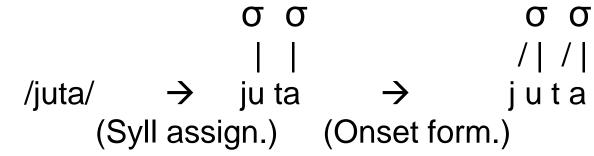 - partly language specific

σ Assignment

- < Hayes
- "Assign syllable nodes (σ) to be in one-to-one correspondence with [+syllabic] sounds."
- e.g. *Utah*

$$\begin{array}{cc} \sigma & \sigma \\ | & | \end{array}$$

/juta/ → ju ta

Onset Formation

- "we can often predict the syllabification of intervocalic clusters by observing *the set of consonant clusters that may begin a word*: VC_1C_2V will be syllabified $[V]_\sigma[C_1C_2V]_\sigma$ if a word can begin C_1C_2V…"
- "Join consonants to the following syllable, provided the resulting cluster can occur at the beginning of a word (Maximal Onset Principle)." (Hayes)

Onset Formation

-                     σ σ   σ σ

                          | | /| /|

    /juta/   →   ju ta   →   j u t a

            (Syll assign.)   (Onset form.)

- *atrocious* vs. *Atlantic* (<Kenstowicz)
  - [ə.tro.ʃəs]
    - cf. *Troy*
    - more narrowly, [ə.tʰro.ʃəs]
  - [æt.læn.tɪk]
    - *$_{Wd}$[tl
    - more narrowly, [ætˀ.læn.tɪk]

Spanish vs. Ilokano onsets

- Spanish [kwa.tɾo] '4' (obeys Maximal Onset Principle)
  - cf. [tɾes] '3'
- but Ilokano [kwat.ɾo] '4' (< Spanish)
  - contains "the preglottalized [ˀt] allophone that we generally find in syllable-final position" (Hayes)
  - "vowels are typically shorter when they are followed by a consonant in their syllable" (Maddieson 85, Closed Syllable Shortening) and "the Ilokano [a] vowel is noticeably shorter than the Spanish."
- also "native speakers of both languages intuit these syllabifications"
  - (probably, where pause possible)

Language-specific

- **Many languages have**
  - Coda formation
    - Hayes: "Join any consonants not yet syllabified to the preceding syllable."
- /ætlæntɪk/ → ætlæntɪk → æt læn tɪk → æt læntɪk

				|	|	|/	|/	|/
σ	σ	σ	σ	σ	σ	σ	σ	σ

Syll Assign.   Onset Form.   Coda Form.

Syllable typology

- "The only 'universal syllable,' present in every language, … is CV." Hayes (p. 257)
- "In many languages (e.g. Arabic, Ilokano), every syllable must begin with an onset"
    - "onsets are never forbidden"
- "In many languages (e.g. Samoan, Zulu), codas are forbidden."
    - "there are apparently no languages that require every syllable to have a coda."

Typology of syllables and languages

- < Clements and Keyser 1983

		Onset	
		required	not required
Codas	banned	CV (Senufo)	CV, V (Maori)
	allowed	CV, CVC (Klamath)	CV, V, CVC, VC (English)

Language outliers

- ## Gilbertese (Micronesian)
  - ### tautosyllabic VVVV
    - -kaaei (augmentative suffix)

- ## Georgian
  - ### tautosyllabic CCCCCC
    - [mc'vrtneli] 'trainer'
    - [gvprckvnis] 'he peels us'

Practice: English /ʌl/, data pp. 267-26

1 English /ʌl/ coalescence

In some English dialects the sequence /ʌl/ is optionally realized as syllabic [l̩] in certain environments. Here are relevant data.

dull	['dʌl] or ['dl̩]		*Culver*	['kʌlvɚ] or ['kl̩vɚ]
null	['nʌl] or ['nl̩]		*Mulholland*	[mʌl'halənd] or [ml̩'halənd]
hull	['hʌl] or ['hl̩]		*bulky*	['bʌlki] or ['bl̩ki]

color	['kʌlɚ] only
Cullen	['kʌlən] only
Tuller	['tʌlɚ] only

a. Apply the rules given in the readings to syllabify all the underlying forms above.

b. State a rule for /ʌl/ → [l̩]. To write a rule that is undergone by two segments, merging them into one, use the numerical subscripts shown in fn. 9, p. 101, and let one of the sounds become zero.

c. Give derivations, including the initial syllabification stage, of *dull*, *Culver*, and *color*.

[9] Here is how to do the concept "changes places with." Put a number underneath each segment in the rule. Then, on the right side of the arrow, list everything in the input, using the numbers to show what has changed places. So, for instance, this rule:

V	t	p	V		→		V	p	t	V
1	2	3	4				1	3	2	4

means "reverse the order of /tp/ when surrounded by vowels."

"Apply the rules given in the readings to syllabify all the underlying forms above."

- What are the underlying forms?
- Syllabic sonorants in complementary distribution with [ʌ] (and [ə])
    - Compare distribution, [ʌC] vs. [C̩], in monosylls
    - S. Hargus idiolect
    - [C̩] only in *burr, bull*
    - [ʌ] has wide distribution: *up, rub, but, bud, buck, bug, buff, love, doth, bus, buzz, lush, bun, bum, lung*
    - [C̩] as /ʌC/

"syllabify all the URs"

- [.dʌl.] [.nʌl.] [.hʌl.]
- [kʌ.lʌɹ] [kʌ.lʌn] [tʌ.lʌɹ]
- [kʌl.vʌɹ] [mʌl.hɑ.lʌnd] [bʌl.ki]

"state a rule for /ʌl/ → [l]"

- "To write a rule that is undergone by two segments, use the numerical subscripts shown in fn. 9, p. 101, and let one of the sounds become zero."

"state a rule for /ʌl/ → [l]"

- L Vocalization (optional)

```
        σ                    σ
       | \                   |
      ʌ  l          →        |
                          [+syllabic]
       1 2                  0 2
```

- UR $\qquad$ /dʌl/

- σ assignment $\qquad$ dʌl

$$|$$
$$σ$$

- Onset formation $\qquad$ dʌl

$$\backslash|$$
$$σ$$

- Coda formation $\qquad$ dʌ l

$$\backslash|/$$
$$σ$$

- L-Vocalization (optional) $\qquad$ d l

$$\backslash /$$
$$σ$$

- PR $\qquad$ dʌl $\qquad$ d l

$$\backslash|/ \qquad \backslash /$$
$$σ \qquad σ$$

- UR /kʌlvʌɹ/

- σ assignment kʌlvʌɹ
  | |
  σ   σ

- Onset formation kʌlvʌɹ
  \| \|
   σ   σ

- Coda formation kʌlvʌɹ
  \|/ \|/
   σ σ

- L-Vocalization (optional) k lvʌɹ
  \/ \|/
   σ   σ

- R-Vocalization kʌl v ɹ k l v ɹ
  \|/ \/ \ /\ /
   σ   σ σ   σ

- UR　　　　　　　　　　　　/kʌlʌɹ/

- σ assignment　　　　　　　　kʌlʌɹ
　　　　　　　　　　　　　　　|　　|
　　　　　　　　　　　　　　　σ　σ

- Onset formation　　　　　　kʌ lʌɹ
　　　　　　　　　　　　　　　\|　\|
　　　　　　　　　　　　　　　σ　σ

- Coda formation　　　　　　kʌ lʌɹ
　　　　　　　　　　　　　　　\|　\|/
　　　　　　　　　　　　　　　σ σ

- L-Vocalization (optional)　　-- (structural description not met)

- R-Vocalization　　　　　　k ʌ l ɹ
　　　　　　　　　　　　　　　\ |　\ /
　　　　　　　　　　　　　　　σ　σ

Summary

- Syllabification is predictable
- Partly universal
  - VCV → V.CV
- Partly language-specific
  - VCCV → VC.CV or V.CCV
  - Considerations
    - word-initial clusters
    - C allophones diagnostic of syllable position