Evidence for the syllable

LING 451/551
Winter 2011
What is a syllable?

• Phonological construct
  – a grouping of consonants and vowels
  – *turnip* [tə.nəp] (. = syllable boundary)
  – abstract: inferred from phonetic transcription

• Must contain syllable nucleus
  – typically V: [spɔɹt]

• May contain Cs
  – onset: [spɔɹt]
  – coda: [spɔɹt]
  – rhyme (rime): [spɔɹt]
Abbreviations and caveat

• Syllable = $\sigma$
  - $\$$ in older generative literature

• Syllable \neq morpheme
  - syllable boundaries \neq morphological boundaries
  - *earl*
    - 1 morpheme
    - 2 syllables [ɪə] (American English)
    - 1 syllable [ə:ɹ] (British English)
Evidence for syllables

• Psycholinguistic
• Descriptive
  – simplifies lg-particular phonological description
Psycholinguistic evidence for syllables

• Tip of the tongue phenomenon
  – Subjects often correctly recall initial segment and/or number of syllables in word otherwise forgotten.

• Aphasics
  – Often remember number of syllables in words whose segments they have forgotten.
Speech errors

• Deletion of entire syllable
  – intended actually produced
  – Morton and Broadbent point Morton and Broadpoint
  – revealed the generalization reeled the generalization
  – tremendously tremenly
  – which I analyze as the following which I analyze as the follow
  – opacity and specificity opacity and specifity
  – we want to reveal all the facts we want to feel all the facts
Speech errors

• Switch onsets
  – intended
  – harpsichord
  – magazine
  – philosophy
  – elephant
  – animal
  – specify
  – neural modeling
  – pancakes

• Don’t switch onset and coda: *puck for cup
Stress rules

• Cross-linguistically, stress rules often refer to
  – open vs. closed syllable
    • open = ends in V; e.g. *Pamela* [pæ.mə.lə]
    • closed = ends in C; e.g. *rotunda* [ʁo.tən.də]
    ➢ closed syllables often attract stress
  – position from edge of word
    • N. Salentino: penultimate
    • Slovak: ultimate
English stress

• Rule for nouns and (some) adjectives
• When penult followed by 1 C
  – stress antepenultimate
    • Páme-la, América, míli-tant
• When penult followed by 2 Cs
  – sometimes stress antepenultimate
    • dí-cipline, álgebra, élo-quent, recá-lcitrant
  – sometimes stress penult
    • fraté-rnal, amál-gam, relú-c-tant
Penult vs. antepenult stress

• Observation in *Sound Pattern of English*
  – two different kinds of post-penult CC
    • [pl], [bɹ], [kw], [tɹ] …
    • vs. [rn], [lg], [kt] …
  – 1st group can occur word-initially
    • play, break, quiet, train
  – 2nd group never word-initial
SPE Main Stress Rule

V -> [+stress]/___C₀(VC¹₀([αvoc, αcons])VC₀) {#, [+stress]}

• How to translate into “plain English”?

• V -> [+stress]/___C₀{#, [+stress]}
  – ‘stress a vowel followed by zero or more consonants when word-final or followed by another stress’ |freight, |Sep|tember

• V -> [+stress]/___C₀VC¹₀VC₀ {#, [+stress]}
  – ‘or if separated from word edge or following stress by zero or more consonants followed by exactly one vowel, up to one consonant, and exactly one more vowel (which can be followed by any number of consonants)’ |Pamela, |Luxipa|lilla

• V -> [+stress]/___C₀VC¹₀[αvoc, αcons]VC₀ {#, [+stress]}
  – [αvoc], [αcons] = [l r j w]
  – ‘or if one liquid or approximant intervenes between the single consonant and the following single vowel’ |discipline, |abraca|dabra

• Longest expansion of rule applies first
Stress rule in terms of syllables

• Stress the antepenultimate syllable if the penultimate is open
  – ____CV Pamela [ˈpæ.mə.lə], militant, America
  – ____CC algebra [ˈæl.ʤə.bə], discipline, eloquent, recalcitrant

• otherwise stress the penultimate
  – ____CC amalgam [ə.ˈmæl.ɡəm], fraternal, reluctant
  – (closed syllable in penult attracts stress)
Reduplication

• Partial reduplication
  – affix w/ varying segmental content

• Yidiny
  – noun plurals
    • [gindalba] ‘lizard (particular species)’
    • [gindal-gindalba] ‘lizards (particular species)’
  – intensive/repetitive forms of verbs
    • [dqama-n] ‘jump’
    • [dqqa-dqama-n] ‘jump a lot’
  – base of reduplication: [gindalba], [dqama-n]
The problem of [r]

• Sometimes [r] in base reduplicates
  – [ɖʊгаr-ɖʊгаrба-n] ‘have an unsettled mind for a long period’
  – cf. [ɖʊгаrба-n] ‘have an unsettled mind’

• Sometimes [r] does not reduplicate
  – [ɖɪму-ɖɪмуру] ‘houses’
  – cf. [ɖɪмуру] ‘house’

• When followed by C in base, [r] reduplicates; when followed by V in base, [r] does not reduplicate

• If syllabifications are: [ɖʊ.gar.ban] vs. [ɖi.mu.ru], rule is
  ➢ Reduplicate the first 2 syllables of base
Language games

• Lidikya (name of language game)

• *Luganda*  
  • limukü  
  • nokomu  
  • lokinibimu  

• *Kimuli*  
  • limukü  
  • nokomu  
  • lokinibimu  

• How to play Lidikya:
  – move word-initial CV to end of word, move word-final CV to beginning of word; move 2nd CV from left edge of word to precede word-final CV, move 2nd CV from right edge of word after first CV from left edge of word; etc.
  – vs.
  – reverse order of Luganda syllables

• [ki.mu.li]  
  • [li.mu.ki]
The syllable as a domain

- Cairene Arabic “emphasis” (Ç)
  = secondary articulation of uvularization/pharyngealization

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Emphasis spread from /Ç/  

- ‘Consonants are the locus of the emphatic vs. nonemphatic contrast. Emphasis is then spread to all segments which are tautosyllabic with an underlying emphatic consonant.’
- Tautosyllabic = belonging to the same syllable
- Heterosyllabic = belonging to different syllables

/tiin/ [tiin] ‘mud’
/tiins/ [tiin] ‘mud’
/rab/ [rab] ‘Lord’
/ɾab/ [ɾab] ‘it sprouted’
Alternations

/ḍaṛab/       [ḍa.ṛab]       ‘he hit’
/ḍaṛab-it/     [ḍa.ṛa.bit]     ‘she hit’
/laṭīif/       [la.ṭīif]     ‘pleasant’ masc.
/laṭīif-a/     [la.ṭīi.fa]     ‘pleasant’ fem.

Without syllable, rule is:

Spread emphasis to following vowel, and to consonant following that vowel if word-final or followed by another consonant.

Note: {#,C}
Distribution of laryngeal features

- In Witsuwit’en, 3-way contrast: [C Cʰ C’]

- /___V only
Witsuwit’en [C Cʰ C’]

• /___ {C,♯}: [C] only
  – alveolars
    • ___♯: [ʔet] ‘there’
    • ___C: [pi c’etetet] ‘saw’
  – palatals
    • ___♯: [sac] ‘oulachon’
    • ___C: [jec’toc] ‘I’m talking’

• Neutralization of laryngeal contrasts
  / ___{C,♯} vs. / ___]syll
Closed syllable shortening

• Yawelmani
  – long, short vowels contrast
    • [xatal] ‘eat’ dubitative
    • [sa:pal] ‘burn’ dubitative
  – only short vowels / __ C{C,#}
  – /wo:n/ ‘hide’
    • ___V: future [wo:n-en]
    • ___C: non-future [won-hin]
  – /bo:k’/ ‘find’
    • ___V: future [bo:k’-en]
    • ___#: verbal noun [bok’]
Yawelmani closed syllable shortening

- \( V \rightarrow V / \_\_ C\{C,\#\} \)

or

- \( V \rightarrow V / \_\_ C\]_{syll} \)
Nasal vowels in McLeod L. Tsek’ene

• Nasal vowels, \([Vn]\) in complementary distribution
  – nasal vowels / ___ \{C,\#\}
    • ___ C
      – /t-in-pèt/ [tǐpèt] ‘you (sg.) are hungry’
    • ___\#
      – /ʧʰon/ [ʧʰο] ‘rain’
      – /tɬʰin/ [tɬʰĩ] ‘dog’
  – \([Vn]\) / ___V
    • -/tʃʰon-è/-[tʃʰonè?] ‘excrement’ (psd.)
    • -/kòn-è/-[kònè?] ‘arm’
Predicting nasal vowels in McLeod L.

- $V_n \rightarrow V / ____ \{#, C\}$

or

- $V_n \rightarrow V / ____ [syl]_syl$
Evidence for syllables---summary

- Psycholinguistic
- Simplifies description of various phonological phenomena
  - disyllabic reduplication
  - language games
  - domain of P rules
  - stress
    - position of syllable within word
    - open vs. closed syllable
    - \{C,\#\} = right edge of syllable (____)_{syll}