Class 17: Metrical stress theory—quantity

To do
• Do Prince & Smolensky study questions (due Tuesday, Dec. 2)
• Get started on Kalinga II assignment (due Thursday, Dec. 4)

Overview: Iambs and trochees are not mirror images.

1. Abbreviations
Let L = a light syllable (1 mora, like CV)
Let H = a heavy syllable (2 moras, like CVV or CVC)
Let S = a superheavy syllable (3 moras, like CVVC or CVCC)
Let bold \( L, H \) = stressed syllables

2. Hayes (1995) argues that the inventory of feet is asymmetric

<table>
<thead>
<tr>
<th></th>
<th>trochees</th>
<th>iamb</th>
</tr>
</thead>
<tbody>
<tr>
<td>quantity-insensitive</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>quantity-sensitive</td>
<td>yes</td>
<td>yes</td>
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</tbody>
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3. Quantity-insensitive (“syllabic”) trochees
Any two syllables can form a trochee—moras don’t matter.

\((LL), (LH), (HL), (HH)\) vs. \(*(L), *(H)\)

Pintupi (data originally from Hansen & Hansen 1969)
Australian language from Australia with 800 or more speakers.

- (pá.ña) ‘earth’
- (tú.ña)ya ‘many’
- (má.[a]wà.na) ‘through from behind’
- (pú.[i]ñ)(kà.la.)tú ‘we (sat) on the hill’
- (tú.mu)(lím.pa)(tú.ñ.ku) ‘our relation’
- (kú.ra)(nú.lu)(lím.pa)(tú.ŋa) ‘the first one (who is) our relation’
- (yú.ma)(qìŋ.ka)(mà.ra)(tú.ŋa)ka ‘because of mother-in-law’

4. Quantity-sensitive (“moraic”) trochees
A foot is composed of two moras, whether they come from one syllable or two.
But, typically, a foot can’t begin or end in the middle of a syllable.

\((LL), (H)\) vs. \(*(LH), *(HH), *(HL), *(L)\)

This leads to a solution to the problematic Cairene form we saw in class 15.
Here’s the data again, with moraic trochees formed from left to right—follows Hayes’ analysis in making only final Cs (or second halves of long Vs) extrametrical:

\[
\begin{align*}
a &: (šá.ja)ra \quad \text{‘tree’ (pausal)} \quad p &: (wá.la)<d> \\
b &: (ká.ta)ba \quad q &: (rá.?a)<a> \\
c &: (šá.ja)ra<h> \quad r &: (hí.ya)
\end{align*}
\]
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| d  | (ša.ja)(rá.tu)hu | ‘his tree’       |
| e  | (ša.ja)(rá.tu)<n> | ‘tree’          |
|    |                  | (nonpausal)    |
| s  | (mu.‘ál)li<m>    |                |
| f  | (ka.ta)(bá.ta)<a> |                |
| g  | (?in)(ká.sara)   |                |
| h  | (qat)(tá.la)<t>  |                |
| i  | (mu.s)(táš)fa<a> |                |
| j  | (mak)(tá.ba)<h>  |                |
| k  | (kaa)(tá.ba)     |                |
| l  | (ša.ja)(ra.tu)(hú.ma)<a> | ‘their (dual) tree’ |
| m  | (?ad)(wi.ya)(tú.hu)ma<a> | ‘their (dual) drugs’ |
| n  | (?ad)(wi.ja)(tú.hu) | ‘his drugs’ |
| o  | (mur)(ta.bi)(Tá.tu)<n> |                |

- Any ideas about the form that was problematic when we didn’t have feet (x)?
- And how about (t,v)? They weren’t a problem before but they are now. Any ideas?

5. Uneven iambs

A heavy syllable can form a foot only on its own or with a preceding L. That is, H can’t be the weak member of a foot.

(\(L_L\)), (\(L_H\)), (\(H\)) \(\text{vs.}\) *(\(H_L\)), *(\(H_H\)), *(\(L\))

Muskogee (a.k.a. Seminole/Creek)—data originally from Haas (1977), Tynhurst (1987), and Martin.

Muskogean language from Alabama and Florida, with a community of speakers in Oklahoma, with about 6,000 speakers.

- (co.kó) ‘house’
- (ni.háa) ‘lard’
- (hok)(tii) ‘woman’
- (íc)ki ‘mother’
- (o.sá)na ‘otter’
- (ko.fóc)ka ‘mint’
- (ak)(cáwh)ka ‘stork’
- (hi.to)(tii) ‘snow’
- (ak)(ha.síi) ‘lake’
- (ha.liis)(síi) ‘moon’
- (tii)(niit)(kíi) ‘thunder’

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1 Lauren was right: there was a typo in this form as it appeared earlier (ended in [fass] instead of [faa]).
Hayes (1995) argues, through an extensive typological survey, that these are the only foot types. There are no languages with syllabic iambs, or “uneven trochees”—i.e., (H), (HL), (LL) but not *(HH), *(LH).

(No moraic iambs either, but these are harder to argue about, because they would be different from uneven iambs only in allowing (LH), which is hard to distinguish from L(H).)

6. Why?
Moras correspond roughly to duration: H syllables last longer than L syllables.
Hayes cites psychological research on how people group rhythmic sequences of sounds.

Hayes cites also:
• similar evidence from a study of musicians’ judgments.
• a study of Swedish poetry recitation in which...
  o speakers produced greater durational contrasts in iambic verse than in trochaic
  o musicians were more likely to transcribe iambic verse in musical notation with different durations for accented and unaccented syllables
  o poets use greater contrast in number of phonemes (for accented vs. unaccented syllables) in iambic verse than in trochaic

⇒ Iambic/Trochaic Law
  a. Elements contrasting in intensity naturally form groupings with initial prominence.
  b. Elements contrasting in duration naturally form groupings with final prominence. (p. 80)
7. Iambic lengthening

Further evidence for the asymmetry from Hayes’ typology: in many iambic languages, there are rules that lengthen the strong member of the foot. Not so in trochaic languages.

Hixkaryana

Carib language with 550 speakers in Brazil. Data originally from Derbyshire (1985).

Vowel length is not contrastive, so all these long vowels are derived by rule.

(kʷá:)<ja> ‘red and green macaw’
(ne.mò:(ko.tó:)<no> ‘it fell’
(a.tʃé:)wo<wo> ‘wind’
(to.rò:)<no> ‘small bird’
(àk)(ma.tār)<ri> ‘branch’
(òw)(to.hōr)<na> ‘to the village’
(tòh)(ku.ré:ho<na> ‘to Tohkurye’
(tòh)(ku.ré:)(ho.ná:)(ha.jā:)<ka> ‘finally to Tohkurye’
(nàk)(nòh)(jåtʃ)(ke.nār)<no> ‘they were burning it’
(mi.hâr)(na.níh)<no> ‘you taught him’
(kʰa.náh)(níh)<no> ‘I taught you’

Why do you think lengthening doesn’t happen in closed (/CVC/) syllables?

By the way, in moraic trochee languages there is sometimes shortening of the strong syllable! Hayes proposes that this is to allow more syllables to get included in feet: e.g., /LLLH/ → [(LL)(LL)] instead of [(LL)L(H)].