Class 17: Metrical stress theory—quantity

To do
• Do Prince & Smolensky study questions (due Tuesday, Dec. 7)
• Get started on Kalinga II assignment (due Thursday, Dec. 9)

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 boldface (L, H) indicate stress

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

|                | trochees | iamb
|----------------|----------|------
| quantity-insensitive | attested | unattested |
| quantity-sensitive   | attested: moraic | attested: uneven |

3. Quantity-insensitive (“syllabic”) trochees
Any two syllables can form a trochee—moras don’t matter.
(LL), (LH), (HL), (HH) vs. *(L), *(H), except maybe at word edges

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

( própôa) ‘earth’
(tú.ía)ya ‘many’
(má.[a](wá.na) ‘through from behind’
(pú.[n]i)(ká.la.)tú ‘we (sat) on the hill’
(tá.mu)(lim.pá)(túŋ.ku) ‘our relation’
(kú.ra)(nú.łu)(lim.pá)(túŋ.ča) ‘the first one (who is) our relation’
(yú.ma)(qiŋ.ka)(má-ra)(túŋ.ča)ka ‘because of mother-in-law’

But what if coda consonants just aren’t moraic in this language, so that all the syllables are light?
More convincing is an example from a language with contrastive vowel length:

Votic, aka Vod (Uralic language with 25 speakers in 1979, from Russia; Ariste 1968)
IPA stress marks used below; otherwise, Ariste’s transcription. Macron (i) indicates vowel length.

(‘ka.na) ‘hen’
(‘tú.tó) ‘girl’
(‘sá.má) ‘to get, obtain’
(‘ã.pa) ‘aspen tree’

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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) [(L) might be OK at the word edge]

We saw these in Cairene. Here’s another example (if we have time):

Italian

- Treat the following words as representing the basic primary-stress pattern of Italian. Draw in trochaic feet.

  a  mé.se  ‘month’
      ká.sa  ‘house’
      fjá.to  ‘breath’
      tér.ra  ‘earth’
      džór.no  ‘day’
      di.ví.sa  ‘uniform’
      tri.bú.na  ‘rostrum’
      kom.prá.re  ‘buy’
      kor.ní.tsê  ‘corniche’
      me.ta.fó.ní.a  ‘metaphony’

- Here are some words with a different stress pattern. There is no other systematic difference between these words and the “basic” words in (a), so something has to be different about their underlying representations. Ideas for what it could be?

  b  ká.li.tse  ‘chalice’
      mú.si.ka  ‘music’
      ál.be.ro  ‘poplar’
      fis.si.le  ‘fissionable’

- Some word shapes, however, never show antepenultimate stress. This should follow from the analysis so far:

  c  spa.gét.ti  ‘spaghetti’
      a.rán.tjó  ‘orange (color)’
      am.búr.go  ‘hamburger’
In addition, there are no words with preantepenultimate stress: *dó.bi.ta.pi. Does that follow from the analysis so far?

There are some words with final stress. Ideas for what we could say about their underlying representations? (Note: final vowels in Italian are never long on the surface: *par.ló, pár.lo; certain other vowels are predictably long, though I haven’t marked them.)

ko.li.brí               ‘hummingbird’
dʒo.ve.di               ‘Thursday’
u.ni.ver.si.tá          ‘university’
li.ber.tá               ‘liberty’
dʒo.ven.tú              ‘youth’
ko.si                   ‘thus’
tʃit.tá                 ‘city’
per.ké                  ‘why’

There is a famous exception to the stress pattern laid out above, [mán.dor.la] ‘almond’ (and a small number of other words like it: [pó.lit.ʈsa] ‘policy’, [á.ris.ta] ‘pork loin’). Ideas for how to account for these few words without opening the door to completely free stress placement?

5. Quantity-sensitive (“uneven”) iambs

Here, 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.

(LL), (LH), (H)   vs.    *(HL), *(HH), *(L) [(L) might be OK at the word edge]

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.

Use iambic feet to explain why stress is sometimes final, sometimes penultimate:
6. **An asymmetric inventory**

Hayes (1995) argues, through an extensive typological survey, that these 3 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 empirically from L(H).)

7. **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...
  - speakers produced greater durations in iambic verse than in trochaic
  - musicians were more likely to transcribe iambic verse in musical notation with different durations for accented and unaccented syllables
  - 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)
8. Iambic lengthening

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. What is it?

  \[
  \begin{align*}
  \text{k"â:<ja>} & \quad \text{‘red and green macaw’} \\
  \text{ne.mò:.ko.tó:<no>} & \quad \text{‘it fell’} \\
  \text{a.tjó:.wo.<wo>} & \quad \text{‘wind’} \\
  \text{to.ró:<no>} & \quad \text{‘small bird’} \\
  \text{àk.ma.tá:<ri>} & \quad \text{‘branch’} \\
  \text{òw.to.hó:<na>} & \quad \text{‘to the village’} \\
  \text{tòh.ku.ré:.ho.<na>} & \quad \text{‘to Tohkurye’} \\
  \text{tòh.ku.ré:.ho.ná:.ha.jâ:<ka>} & \quad \text{‘finally to Tohkurye’} \\
  \text{nàk.jòh.jàt.j.ke.ná:<no>} & \quad \text{‘they were burning it’} \\
  \text{mi.hà:.na.níh.<no>} & \quad \text{‘you taught him’} \\
  \text{k à.nà:.níh.<no>} & \quad \text{‘I taught you’}
  \end{align*}
  \]

Asymmetry: Trochaic lengthening is much rarer.

But, 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)].

9. Trochaic shortening example (if time permits)

In Fijian, vowel length is contrastive, but its distribution is limited. (Based on data from Schütz and analysis by Hayes.) Mostly loan words are shown below because, as in English, they’re the best source of long, monomorphemic words.

- What are the footing rules of Fijian?

  \[
  \begin{align*}
  \text{làkó} & \quad \text{‘go’} \\
  \text{tálo} & \quad \text{‘pour’} \\
  \text{ßináka} & \quad \text{‘good’} \\
  \text{atómi} & \quad \text{‘atom’} \\
  \text{%dikonési} & \quad \text{‘deaconess’} \\
  \text{prèsitê%di} & \quad \text{‘president’} \\
  \text{%basikêtépolo} & \quad \text{‘basketball’} \\
  \text{señáj} & \quad \text{‘no’} \\
  \text{%basá:} & \quad \text{‘bazaar’} \\
  \text{%dákétá:} & \quad \text{‘doctor’} \\
  \text{palásitá:} & \quad \text{‘plaster’} \\
  \text{minisitiri:} & \quad \text{‘ministry’} \\
  \text{terènisitá:} & \quad \text{‘transistor’} \\
  \text{%dákérikáti:} & \quad \text{‘director’}
  \end{align*}
  \]
Account for shortening in Standard Fijian:

- nère: ‘difficult’
- bèlèti ‘belt’
- taràwsése ‘trousers’
- bèle bótmû ‘bellbottoms’
- mìsini gâni ‘machine gun’

- mbú ‘grandmother’
- mbú-gu ‘my grandmother’
- tá ‘chop’
- tá-ja ‘chop-transitive-3 sg. obj.’
- nré ‘pull’
- nré-ta ‘pull-trans.’
- dàdà ‘lots of bad things’
- dàdà-gu ‘my bad things’
- sìbī-ta ‘exceed-trans.’
- sìbī ‘exceed’
- ráj ‘see’
- râj-ða ‘see it’
- láw ‘wug’
- ló-ða ‘wug it’

The curved diacritic over the vowel in ‘see it’ indicates that the vowel is short (it is also stressed). Assume that the resulting rime [âj] has only one mora.

- Here’s another dialect to account for (data partially fabricated):
  - sìbī-ta ‘exceed-trans.’
  - sìbī ‘exceed’
  - ráj ‘see’
  - ré-ða ‘see it’
  - láw ‘wug’
  - ló-ða ‘wug it’

- And another dialect:
  - sìbī-ta ‘exceed-trans.’
  - sìbī ‘exceed’
  - ráj ‘see’
  - râj-ða ‘see it’
  - láw ‘wug’
  - laú-ða ‘wug it’

- One last dialect:
  - ráj ‘see’
  - râj-ða ‘see it’
  - láw ‘wug’
  - lá-ða ‘wug it’

\[2\text{ Made-up form.}\]