Class 19: Stress III

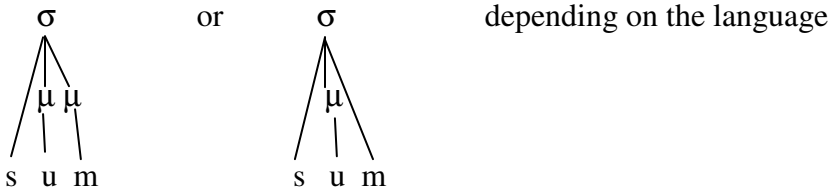
To do
- Manam stress (last assignment) due Friday
- Be working on project. If you've gotten stuck in your analysis, come see me tomorrow.

Overview: More about weight; arguments for feet that we didn't get to.

1. What are moras?

- A *mora* is an abstract unit of duration[1] that has been proposed for dealing with footing and stress assignment in so-called "quantity-sensitive" languages.
  - It's the difference between a light syllable and a heavy syllable.

- What gets a mora?
  - Onsets usually don't get any (but see (Topintzi 2006), (Topintzi 2010))
  - A nucleus vowel almost always gets one (though in some languages, schwa gets no mora).
  - A long vowel or diphthong (2 vowels in the same nucleus) usually gets two.
  - A coda consonant may get one, depending on the language—and it some languages, only certain coda consonants get one



- Syllable weight
  - 1 mora: light syllable
  - 2 moras: heavy syllable
  - 3 moras: superheavy syllable
    - How could a syllable have 3 moras?

[1] or total acoustic energy, or total acoustic energy weighted with some frequencies counting more than others. See (Gordon 2002), (Gordon 2005).

2. Reasons to add moras

- Syllables with more moras often attract stress, leading to this constraint ((Prince 1990)):
  WSP ("weight-to-stress principle"): a heavy syllable must be stressed

Before moras you had rules like V → [+stress] / __ C{C,#}
Doesn't capture the typology (why not V → [+stress] / __ CV instead?)

- Compensatory lengthening ((Hayes 1989))

Latin historical change	*kas.nus > ka:.nus	'gray'
	*kos.mis > ko:.mis	'courteous'
	*fi.des.li.a > fi.de:.li.a	'pot'
Turkish free variation	sav.mak →$_{optionally}$ sa:.mak	'to get rid of'
but	da.vul →$_{optionally}$ da.ul	'drum'

- Draw the moras and syllable structure for [sav.mak] and [da.vul]. Let's ponder why deletion leads to lengthening in one case but not the other.

Greek (East Ionic)	*woi.kos > oi.kos	'house'
	*ne.wos > ne.os	'new'
	*od.wos > o:.dos	'threshold'

- Draw the moras and syllable structure for [woi.kos], [ne.wos], [od.wos], and ponder.

Middle English (originally from (Minkova 1982)*)* ta.lə > ta:l 'tale'

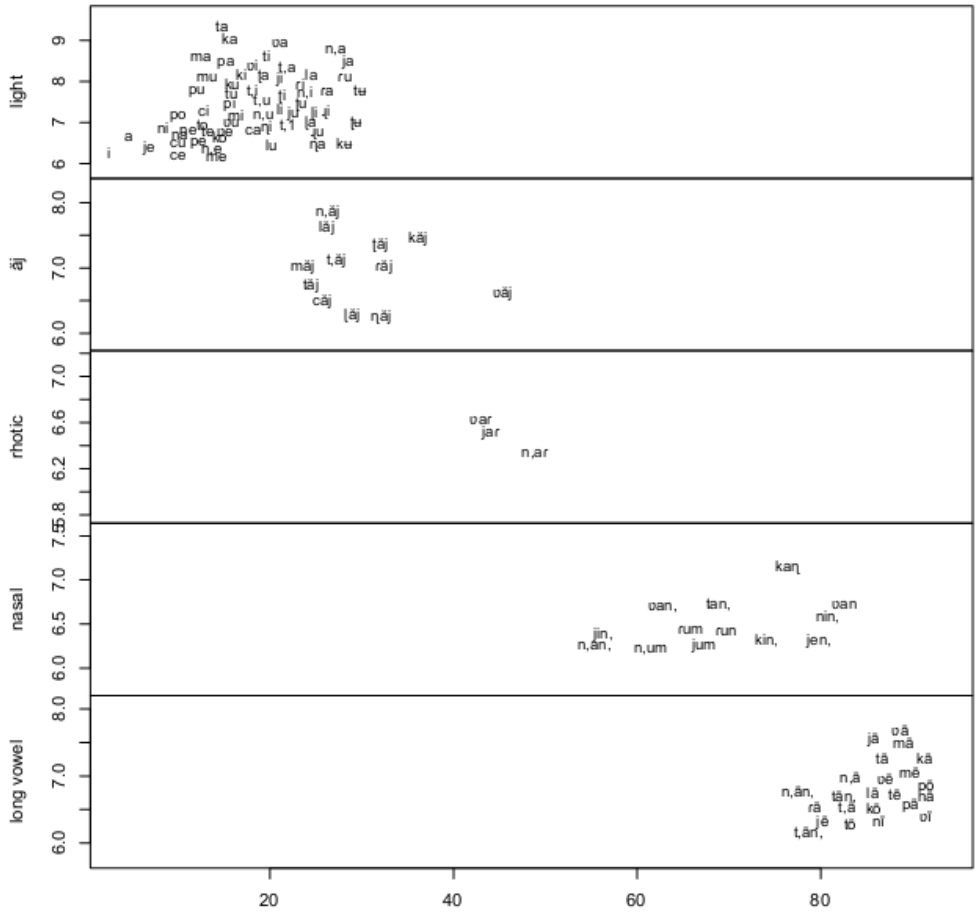
- We have to ignore several complications, but we can get the basic idea by drawing [ta.lə]

Unattested cases	sa → a:
	sla → sa:

- Why don't these occur?

But: (Ryan 2011a; Ryan 2011b) shows that language can make many more than 2 or 3 weight distinctions

- Tamil: using sophisticated statistical measures over a huge verse corpus, Ryan finds 5 partly-overlapping weight classes



horizontal axis: percentage of the time each syllable type acts as though heavy in verse.

each vertical slice: a different syllable type

vertical axis within slice: log frequency of each type (doesn't seem to play much role, but helps spread out the points so they're more visible).

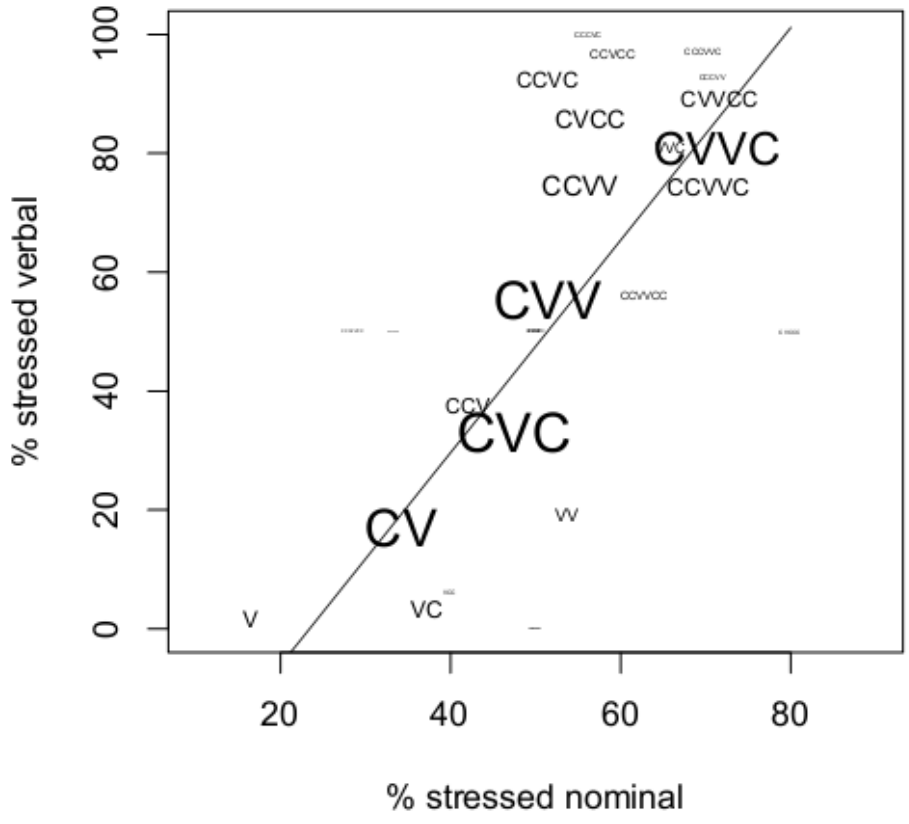
Figure 14: Figure 13 filtered into five phonological classes.

(Ryan 2011a p. 21)

- Then, he finds more and more categories (in Tamil and for other languages)
- The categories often don't behave as though evenly spaced
  - Weight is not just a hierarchy, but maybe a numerical scale

→ In versification and lexically-variable stress (English real and fake words), it seems more like you can attach a real number to each syllable, like "0.81".

Here's Ryan's English real-word data:



Size of font indicates frequency.

Notice that more-complex onset leads to more stress.

(Ryan 2011a, p. 179)

3. An argument for feet: Minimality

- McCarthy & Prince 1986 (see there for references and details): It's common for languages to impose a minimum size on content words.

  - Estonian (recall from discussion of duplication problem; Prince 1980): **≥ two moras, word-final C doesn't count** (see (Lunden 2006))

/tänava/	tänav		'street (nom.sg.)'
/konna/	kon:n		'pig (nom. sg.)'
/kana/	kana (*kan)	*V-deletion blocked*	'chicken (nom. sg.)'

  - Mohawk, Kahnawake dial. (Iroquoian, Canada & US, 3,760 speakers; Michelson 1981): **≥ 2 sylls**

/k+tats+s/	**í**ktats	'I offer'
/hs+yaʔks+s/	**í**hsyaʔks	'you are cutting'

  - How can we describe all these minimums?

- Hayes 1995: Can we just say that "every word must be able to undergo the stress rule"? If so, must that rule refer to feet? Try it for Mohawk, which has penultimate stress.

  - from Hayes 1995: Pitta-Pitta [Australian, prob. no speakers]—words also must be ≥ 2 sylls.[2]

káku	'older sister'
kákila	'coolamon, car, buggy'
kálakùra	'type of corroboree'

  - What would be the main stress rule for Pitta-Pitta?

  - Does your rule exclude subminimal words (*ka)? What about other formulations of the rule?

4. Other arguments for feet, the first 2 of which you read about in Hayes

- There are languages with a single foot type but different alignment in different contexts
  - With feet this is describable in terms of a single parameter setting that changes according to context
  - With the peak-first/trough-first, left-to-right/right-to-left system, both parameter settings would usually have to change (I can draw an example)
- Trochaic languages are far more common than iambic
  - With feet, we can characterize one parameter setting as more common
  - But with just the grid, we have to describe certain *combinations* of parameter settings as common

- Various consonantal rules apply to the "strong" or "weak" syllable of a foot, even if the foot is not supposed to have any stress (i.e., in languages reported to have no secondary stress).
  - See González 2002 for a case of this and a case of something even more complicated.

- Expletive infixation in English (McCarthy 1982):
  Mo(nònga)-(fucking)-(héla)
  (Òs)-(fucking)-(wégo)
  (Àpa)-(fucking)-(làchi)(cóla), (Àpa)(làchi)-(fucking)-(cóla)
  (Tàta)ma-(fucking)-(góuchi) ~ (Tàta)-(fucking)-ma(góuchi) ← this one is crucial

[2] Data warning: To get these examples I took words from Blake's "Pitta Pitta wordlist" (coombs.anu.edu.au/SpecialProj/ASEDA/docs/0275-Pitta-Pitta-vocab.html), which doesn't mark stress, and then added in the stresses according to Hayes' reporting of Blake's (1979) description.

- Latin enclitic stress ((Steriade 1988; Jacobs 1997)):
  - Latin stresses the penult if it's heavy, otherwise the antepenult (data from Jacobs/Hayes).
  - Basic analysis:
    - final syllable doesn't want to be in a foot
    - heavy syllable must be stressed (unless final: NONFINALITY>>WEIGHTTOSTRESS)
    - trochaic feet

(cá.me)ram	(ár.bo)rem	pe(dés)trem	vo(lup)(tá:)tem
(sí.mu)la:	do(més.ti)cus	a(mí:)cus	(li:.be)(ra:.ti)(ó:)nem

  - But, it's different when you add an enclitic ("=" boundary):

(í)ta	'so'	(i)(tá)=que	'and so'	*(í.ta)=que
(mú)sa	'Muse'	(mu)(sá)=que	'and the Muse'	*(mú.sa)=que
(lí:.mi)na	'thresholds'	(li:.mi)(ná)=que	'and the thresholds'	*(li:)(mí.na)=que
(no)bis	'us'	(no)(bís)=cum	'with us'	
		(no)(bis)=(cúm)=que	'and with us'	

  - Steriade's cyclic solution: when a clitic is attached, only still-unfooted material can be footed: old feet can't be readjusted (let's step through a couple of these)

  - To deal with the following data, Jacobs proposes that not only final syllables, but also final <u>enclitics</u> resist footing (are "extrametrical"):

(íd)	'this'	(íd)=circo:	'therefore'	*(id)=(cír)co
		(id)=(cir)(có:)=que	'and therefore'	
(quá:)	'which'	(quá:)=propter	'wherefore'	*(qua:)=(próp)ter
e(á:)	'there'	e(á:)=propter	'therefore'	*e(a:)=(próp)ter
		e(a:)=(prop)(tér)=que	'and therefore'	
(ú)<bi>	'where'	(u)(bí)=li.bet	'wherever'	

- Bring on the dissent and counter-analysis for all of these...

Next time: Course wrap-up and prospect; tips on next week's presentations, incl. handouts

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