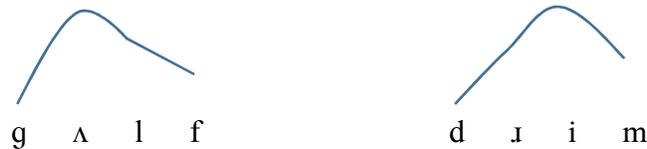


3.2 They can explain finer-grained phonotactics too

(see Steriade 1999 for classic references, including Steriade herself in the 1980s)

- Certain contrasts are licensed only in onsets (place, voicing [you saw a couple examples of this last quarter],...)
- Sonority tends to rise within an onset, fall within a coda



3.3 But...

- Steriade 1999 argues that these phenomena are better explained in a way that sticks closer to the phonetics:
 - Yokuts: all consonants must be V-adjacent
 - Contrast licensing: __V is a better place for certain contrasts (place, voicing)
 - place cues from release burst, outgoing formant transitions...
 - (I'll refer you to Steriade for the sonority-contour material.)
- And, Steriade argues, sometimes syllables make the wrong prediction.
 - Retroflex consonants' place is best cued in the transition from the preceding V, not the transition to the following V.
 - There are languages where a retroflex is allowed only in a coda!

4 Syllable boundaries: caution

- It's not always clear where the boundaries between syllables are (gi.ven? giv.en? giv.ven?)
 - Steriadean perspective: when you ask someone to separate a word into syllables, they're trying to utter a sequence of legal words
 - [gi] is no good because it ends in a lax vowel (illegal in English)
 - *giv.en* is strange because it leaves the second syllable onsetless
 - *giv.ven* is strange because it repeats the [v]
 - no option seems quite right
- Be skeptical of sources that claim a syllabification as though it were observable data—syllabification is always part of a phonological analysis.
 - E.g. Spanish [kó.pja] 'copy'
 - explains why the /j/ has its non-syllable-initial allophone ([j] rather than [ɟ])
 - consistent with claim that Spanish forbids [p] in coda (since we don't observe them word-finally or before non-glide/liquid Cs)
 - consistent with claim that Spanish allows [pj] onset, since words can begin [pj]
 - vs. Tagalog [kóp.ja] 'copy' (loan from Spanish)
 - explains why suffixed form is [kóp.ja-hin] ~ [kòp.ja-hín] (only roots with stressed, closed penult show this pattern)
 - consistent with observing lots of words that end in [p]

5 What is stress? (17)

- Not all languages have it.
- Among those that do, stress doesn't have a fixed phonetic realization. Stressed syllables tend to...
 - have longer duration
 - be louder
 - support a larger set of vowel contrasts (see Crosswhite 2001; Barnes 2006 for surveys)
 - have longer VOT, more fortition on their consonants (see Lavoie 2001; González 2002 for surveys)
 - attract glottalization and aspiration away from unstressed
 - be associated with pitch excursions (high or low, depending on utterance melody)¹
- This means stress isn't something you can hear, see in a spectrogram, or ask a speaker to intuit! It's the result of a phonological analysis to explain traits like those listed above.
 - That's why phonologists can disagree about a word's stress pattern, or even about whether a certain language has stress (French, Korean...)
- It's better to define stress as an abstract prominence relation:
 - Some syllables are more prominent (stressed) than others, and this has phonetic and phonological consequences, depending on the grammar, such as those listed above.

6 Reasons not to treat stress as a feature

- It seems to be a property of syllables, not segments
 - You can't have a syllable where the onset C is [+stress] and the nucleus V is [-stress], for example. æliɡèjɾə
- Other features (usually) don't shift from segment to segment based on distance from a word edge:

óriɡin oríɡinal oriɡinálity
phótogràph photógrapher phòtográphic
- Other features (usually) don't act at long distances across other instances of that feature:

Míssissíppi vs. Míssissìppi léɡislàtors
- Languages don't require every content word to have at least one + value of other features (except maybe [syllabic], which, in the CV-skeleton theory, is not a feature anyway).
- For just about every other feature, there is some language where it assimilates—but I know of no rules of stress assimilation, only stress dissimulation.

Notation review

- IPA stress symbols
 - primary: '
 - secondary: ,
 - goes before stressed syllable: 'æli,ɡejɾə
 - requires you to commit to where syllable boundary is
- Also commonly used
 - primary: ˈ
 - secondary: ˌ
 - goes on top of stressed vowel: æliɡèjɾə

¹ This is what makes stress different from pitch accent. A pitch-accented syllable always gets the same tone or tone contour. So what makes pitch accent different from tone? Maybe nothing really: see Hyman 2009.

7 Reasons to handle stress with a metrical grid

- The prominence relation of stress is often represented as a *grid* (Lieberman 1975).
 - rows (a.k.a. ‘layers’) represent degrees of stress
 - columns are associated with stress-bearing units (syllables, typically).

				x						
				x						
x				x						
x		x		x						
x	x	x	x	x	x					
<i>re</i>	<i>con</i>	<i>ci</i>	<i>li</i>	<i>a</i>	<i>tion</i>					

Example from Hayes

- Grids are assumed to be subject to the (inviolable) Continuous Column Constraint
 - For every grid mark (except on the bottom layer) there must be a grid mark in the same column on the layer below.

8 Payoffs of using the grid

8.1 Locality

- English phrasal stress rule (a.k.a. nuclear stress rule): place main stress on last word of phrase²
 - But sometimes main stress ends up several syllables from the end of the phrase—makes for an awkward rule
 - Example from Hayes: *hypothetical imitators*, which could also perhaps be *hypothetical imitators*.
- Grid version of the rule is local:

$$\begin{bmatrix} \\ \end{bmatrix} \rightarrow \begin{bmatrix} x \\ x \end{bmatrix}$$

= “if the top layer of the grid has exactly two marks, add another mark to the second one”

- Any amount of white space is allowed between and on either side of xs on the same layer when matching representations up to the structural description
- The structural description could match any (adjacent) rows of the grid

? Draw grids for *hypothetical* and *imitators* in isolation; put them together and apply this rule.

² This can be overridden by focus. Also, watch out for compounds.

- The optional English rhythm rule (Prince 1983): really an interaction between a constraint NOCLASH and a rule Move-X.

NOCLASH: * x x (if two grid marks are adjacent on their layer, the grid marks under
 x x them can't also be adjacent on their layer)

Move-X: Move one grid mark along its layer (triggered by NO-CLASH)

- English-specific detail: only leftward movement is allowed here.

? Draw the grids for *Mìssissìppi* and *législàtors*. If you put them together, is NO-CLASH violated?

? Apply Move-*x* if necessary—where can *x* move to without violating the Continuous Column Constraint?

? In what way might this operation appear non-local? In what way is it local?

8.2 The rich get richer

- In the rhythm rule, Prince notes that the stress retracts onto the strongest preceding syllable. Here are some of Hayes's examples...
- ? Draw grids for *Súnsèt Párk* and *Zóo*, and then put them together and apply Move-*x* to resolve/alleviate the clash. Where can the moved *x* land?

- ? Let's use the rhythm rule to figure out grids for *tòtālítárian téndencies* (more than one possible outcome?) and *Cònstàntinóple tráins*

8.3 The poor get poorer (Hayes):

- Consider the derivation of *paréntal* from *párent*. When *-al* is added, assume that stress rules add stress to the new penult (*páréntal*). Then main stress is assigned (*pàréntal*).

- ? Draw the grid for *pàréntal*. What constraint is now violated? Can Move-X help?

- ? Assume a rule 'Delete (one) *x*' that can be triggered by constraint violation (though maybe only within a single word, not a compound or phrase?). What options do we have for applying that rule?

To sum up

- We've seen reasons to group segments into syllables, along with some cautions and skepticisms
- We've seen some advantages of representing stress as relative prominence relations

Next time

- If time: using the **perfect grid** to describe stress systems
- Adding **feet** to the structure

References (something seems to have gone wrong here—bunch of extra references I can't get rid of)

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