Class 14: Rules and constraints—blocking; maybe start on stress?

To do
• Finish Lama (due Thurs.)

Overview: We have seen constraints blocking rules before—today we’ll focus on the OCP as discussed by McCarthy and some responses to that work.

Reminder: OCP = “obligatory contour principle”: adjacent identical elements on the melodic tier are forbidden

1. McCarthy (1986)
McCarthy presents various cases in which syncope is blocked by the OCP violation that would result.

Example from our old friend Tonkawa

reminder: the basic pattern (stress is also involved, but we’ll ignore that)

<table>
<thead>
<tr>
<th>picen</th>
<th>‘castrated one; steer’</th>
<th>picen+o?</th>
<th>‘he cuts it’</th>
<th>picna+no?</th>
<th>‘he is cutting it’</th>
</tr>
</thead>
<tbody>
<tr>
<td>we+pcen+o?</td>
<td>‘he cuts them’</td>
<td>we+pcena+no?</td>
<td>‘he is cutting them’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ke+pcen+o?</td>
<td>‘he cuts me’</td>
<td>ke+pcena+no?</td>
<td>‘he is cutting me’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>notox</td>
<td>‘hoe’</td>
<td>notxo+no?</td>
<td>‘he is hoeing it’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>we+ntox+o?</td>
<td>‘he hoes them’</td>
<td>we+ntoxo+no?</td>
<td>‘he is hoeing them’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ke+ntox+o?</td>
<td>‘he hoes me’ (??)</td>
<td>ke+ntoxo+no?</td>
<td>‘he is hoeing me’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>netl+o?</td>
<td>‘he licks it’</td>
<td>netle+no?</td>
<td>‘he is licking it’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>we+ntal+o?</td>
<td>‘he licks them’</td>
<td>we+ntale+no?</td>
<td>‘he is licking them’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ke+ntal+o?</td>
<td>‘he licks me’</td>
<td>ke+ntale+no?</td>
<td>‘he is licking me’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>naxc+o?</td>
<td>‘he makes it a fire’</td>
<td>we+nxace+no?</td>
<td>‘he is making it a fire’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>we+nxac+o?</td>
<td>‘he makes them a fire’</td>
<td>we+nxace+no?</td>
<td>‘he is making them a fire’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ke+nxac+o?</td>
<td>‘he makes me a fire’</td>
<td>ke+nxace+no?</td>
<td>‘he is making me a fire’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

○ Summarize what’s going on in the data above.

○ What’s different about these forms?

  - hewawo?  ‘he is dead’
  - ham’am’o?  ‘he is burning’
Further illustration: compare plain stem /jakapa/ to reduplicated /jakakapa/

<p>| | | |</p>
<table>
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<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>jakpo?</td>
<td>‘he hits him’</td>
<td></td>
</tr>
<tr>
<td>ke+jkapo?</td>
<td>‘he hits me’</td>
<td></td>
</tr>
<tr>
<td>jakakpo?</td>
<td>‘he hits him repeatedly’</td>
<td></td>
</tr>
<tr>
<td>ke+jjakpo?</td>
<td>‘he hits me repeatedly’</td>
<td></td>
</tr>
</tbody>
</table>

Crucially, the OCP violation that would be created if syncope applied in the usual way to yield *[jakkap?] can’t, for some reason, be repaired by immediate fusion of the adjacent identical Cs—instead, the OCP simply blocks deletion.

- In Myers’ terms, can we analyze failure of syncope with a persistent rule instead of a constraint that blocks it?

McCarthy proposes that the OCP is universal. Exceptions to its blocking effect on syncope can be explained by ordering syncope before tier conflation.

- So, in what environments does this predict that syncope can create a geminate?

2. Yip (1988)¹
The OCP can be a rule trigger, too.

Seri: Hokan language from the Sonora coast of Mexico with 700 speakers (data originally from Marlett & Stemberger 1983²)

<p>| | | |</p>
<table>
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<tr>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>/?a+a:?+sanx/</td>
<td>?a:__.sanx</td>
<td>‘who was carried’</td>
</tr>
<tr>
<td>/?i+?+a:+kaʃni/</td>
<td>?i:.a:_.kaʃni</td>
<td>‘my being bitten’</td>
</tr>
<tr>
<td>/ko?+panʃx/</td>
<td>ko?:.panʃx</td>
<td>‘run like him’</td>
</tr>
</tbody>
</table>

The second of two glottal stops in the same syllable deletes.

- “But wait,” you’re thinking, “the OCP prohibits adjacent identical elements. These glottal stops aren’t adjacent.” Why do you think Yip invokes the OCP here?

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Aside: Why not fuse the two [ʔ]s, or their offending subparts? Yip proposes that in Seri [ʔ] is forbidden from associating to more than one skeletal node. Evidence:

vowel-initial roots cause gemination of prefix Cs

\[ \begin{align*}
i: & \quad \text{‘feel’} \\
i+tt+i: & \quad \text{‘feel-neutral’} \\
i+ss+i: & \quad \text{‘feel-passive'} \\
\text{unless that C is [ʔ]} & \quad \\
i+_ʔ+i: & \quad \text{‘feel-active?’}
\end{align*} \]

Yip proposes that a rule includes statements of:

- **domain** (e.g., ‘syllable’)
- **tier** (e.g., ‘laryngeal’, a tier that includes features like [voice], [c.g.], [s.g.])
- **trigger** (i.e., the constraint)
- **environment** (can be left blank)
- **change** (e.g., ‘delete 2nd’)

In the Seri case, the environment is left blank. The trigger is also left blank. Yip proposes that the OCP is universally available as a trigger for rules whose trigger is unspecified. (This makes using the OCP as a trigger “free”, because it doesn’t add to the length (cost) of a rule.)

**English**

\[ \begin{align*}
\text{dʒadʒɔz} \\
\text{ʔʃtʃɔz} \\
\text{bəsɔz} \\
\text{kʰwizɔz}
\end{align*} \]

This is like McCarthy’s Damascene Arabic case, where two consonants don’t have to be exactly alike (they can differ in voice and pharyngealization) to count as ‘identical’.

- Propose an analysis of English like McCarthy’s of Damascene.
3. More on English

Eric Baković’s has looked at this case, and proposes:

- The OCP prohibits only adjacent identical elements
- Other constraints may prohibit adjacent, dissimilar elements (i.e., require assimilation)
- But if satisfying those other constraints makes the elements identical, the OCP is violated. So, something else should happen instead that can satisfy both constraints.

In constraint-and-rule terms, /bʌs分工/ violates the constraint *[–voice][–son], which should trigger the assimilation rule X → [ɑvoice]/[ɑvoice] (cf. /kʰæt+z/ → [kʰæts]).

- What would happen if the assimilation rule applied?

- How would this work for /dɔ3ʌdʒ+z/? What does this predict about /bʌdʒ+d/ (see relevant pictures of Colin Wilson’s palate on Phonoloblog)

- Can you think of how this idea could work to trigger fusion between ks that differ in palatalization in Japanese (/ɡak+k_jo/ → [ɡakj_o:], /sek_j+k0/ → [sek_jo:])*?

4. Odden (1988)*

*Koya: Dravidian language from India with 330,000 speakers (data originally from Taylor 1969†)

V → Ø / __# applies only if the V is flanked by identical (modulo retroflexion) Cs:

/na:ki karva:li/ na:kkara:veli ‘to me it is necessary’
/ar:ru ru:pa;jku/ ar:rurupajku ‘6 rupees’
/verka:ɖi digte/ verka:ɖditte ‘the cat got down’

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Yapese: Austronesian language from Yap state of the Federated States of Micronesia with 6,592 speakers
(data originally from Jensen 1977)

V → Ø applies only if the V is flanked by homorganic Cs:

- /ba puw/ bpuw ‘it’s a bamboo’
- /ba ma:b/ bma:b ‘it’s a door’
- /ni te:l/ nte:l ‘take it’
- /rada:+n/ rda:n ‘its width’
- /qalaŋeːŋe+ɡu/ qalaŋeːɡ ‘my headache’

These seem to be the opposite of McCarthy’s cases—but are they really?

- What might block syncope in Koya when the flanking Cs are non-identical? In Yapese when the flanking Cs are heterorganic?

If we get this far... **stress!** In a lot of ways, stress doesn’t look like a feature. Accordingly, a type of representation called a *grid* has been proposed, to which stress rules apply.

5. **What is stress?**

It’s hard to say: stress doesn’t have a consistent phonetic realization, although stressed syllables tend to...

- have longer duration than unstressed
- be louder than unstressed
- support a larger set of vowel contrasts (as you saw in Haiman 1972; see Crosswhite 2001 for survey)
- have longer VOT, more fortition on their consonants than unstressed (see Lavoie 1996, González 2002 for surveys)
- attract glottalization and aspiration away from unstressed
- be associated with pitch excursions (high or low, depending on utterance melody)\(^6\)

It’s easier to define stress as an abstract prominence relation—some syllables are more prominent (stressed) than others, and this has phonetic and phonological consequences like those listed above.

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\(^5\) I’m guessing about this morpheme boundary.

\(^6\) This is what makes stress different from pitch accent. A pitch-accented syllable always gets the *same* tone.