1. **Positional Prominence effects.**
   
   A. positional resistance to processes which apply elsewhere
   B. positional maintenance of contrasts which are neutralized elsewhere
   C. positional triggering of phonological processes
      (J. Beckman 1999:44)
   
   • Phonetically, prominence “may be instantiated by many different physical
     clues including increased duration or amplitude, pitch extrema, release bursts,
     etc.” (J. Beckman 1999:2).
   
   • Prominence, and phonological effects, have been observed to be characteristic
     of stem (versus affix), initial syllables, stressed syllables, and onsets.
   
   • Two types of prominence have been proposed (Smith 2000):
      phonetic: as in stressed syllables, perceptual cues are robust
      psycholinguistic: as in initial syllables, aid in processing and lexical
      retrieval.

2. **Final position.**

   • Numerous studies have documented phonetic lengthening effects of final
     positions (M. Beckman & Edwards 1990 for references; for signed languages,
     van der Hulst/Corina & Sandler 199?).
   
   • Thus phonetically one might expect final prominence effects, and
     psycholinguistically as well, given its edge position.

3. **Acquisition evidence.**

   Numerous acquisitionists have observed that when at a developmental stage with a
   restriction to foot-binary words, children preserve final as well as stressed syllables

   a. hippopotamus --> pomus
cinnamon --> cimon
   Allison --> Ason
elephant --> ephant
   sesame --> seme
   (Pater 1997:209, 220)
   
   Pater attributes this effect to the following two constraints:
   
   **STRESS-FAITH:** An input stressed element must have as its Output correspondent
   a stressed element.
   
   **ANCHOR-RIGHT**: Elements at the right edge of the Input word and the Output
   word stand in correspondence.
   (Pater 1997:223)

4. **Tone-mapping evidence.**

   • Indeed, Beckman (1999:1-3) mentions final position as a possible one to
display prominence effects. Yet this conjecture has not been picked up on,
and final prominence effects have not been observed in the phonological
literature that now exists on positional effects (Crosswhite 1999, Steriade 1997
   
   • In fact, evidence to the contrary seems widespread, for example in final
deletion and neutralization phenomena such as final devoicing.

   However!
   
   • I will argue that final position does exhibit prominence effects, and provide
   several instances of it.
   
   • Moreover, some of the above sort of evidence for non-prominence may have
   been misanalyzed.
   
   • Finally, the prominence effects to be discussed cannot be accounted for solely
   in terms of duration inducing phonetic prominence.
Recent studies on contour tone distribution (Zhang 2001, Zoll 2002) have observed that in many languages, contour tones are restricted to final syllables. While this was previously accounted for in terms of directional mapping of tone association, Zoll (2002) shows that this analysis is not consistent with the data. Instead, she proposes the following constraint (Zoll 2002:177):

COINCIDE (Contour, Right): Branching tones coincide with the rightmost TBU in a word.

(Shorthand for the local conjunction of the markedness constraint *CONTOUR with ALIGN-Right).

The opposite effect that one might also predict – that is, high-ranking COINCIDE (Contour, Left) – has not been observed.

--- In both acquisition and tone-mapping, the effect of positional anchoring constraints is notably asymmetrical in favor of final position.

5. Exceptions to pharyngealization in Arabic dialects.
   Criterion A: Positional resistance to processes applying elsewhere.

A. Lebanese Arabic (Haddad 1984:256-279)
   - The presence of an “emphatic” (secondarily pharyngealized) consonant has a backing effect throughout the word.¹
   - The short high vowels /u/ and /i/ are allophonically distributed according to whether they are in an emphatic or non-emphatic environment, respectively.
     - dimin 'be addicted'
     - Dumun-ha 'he guaranteed it f.'
     - Except in final position, where /i/ always surfaces.
     - Dumin 'guarantee'
     - rusiS 'be cheaper'
   - But is it just neutralization?

B. Moroccan Arabic (Heath 1987:326)
   “[+PH] is spread...up to the last non-stem-final V.”

C. Omani Arabic (Shaaban 1977:116)
   - The vowels /a/ and /e/ are distributed allophonically, with /a/ in words that include an emphatic consonant, and /e/ elsewhere.
   - The word-final vowel of the feminine singular suffix surfaces as /a/ only when immediately adjacent to an emphatic.
   - Otherwise it is /i/, even when an emphatic appears elsewhere in the word.

6. Maltese vowel contrast.
   Criterion B: Maintenance of contrasts neutralized elsewhere.
   - A rural dialect of Maltese (Borg 1977) exemplifies both positional triggering of a phonological process and a positional contrast not attested elsewhere.
   - Long vowels are diphthongized only in word-final syllables.
   - According to whether these syllables were in the domain of a pharyngealization process, a backness contrast occurs.

<table>
<thead>
<tr>
<th>Maltese Final VV</th>
<th>Non-final VV</th>
<th>Gloss</th>
<th>Arabic source</th>
</tr>
</thead>
<tbody>
<tr>
<td>haΣeyΣ</td>
<td>haΣiiΣe</td>
<td>'grass/herb coll, unit'</td>
<td>HaΣiiΣ(a)</td>
</tr>
<tr>
<td>smeyn</td>
<td>siniene</td>
<td>'fat m,f'</td>
<td>saniem(a)</td>
</tr>
<tr>
<td>asuyr</td>
<td>asiira</td>
<td>'short m,f'</td>
<td>qaSiir(a)</td>
</tr>
<tr>
<td>sabuyh</td>
<td>sabiiha</td>
<td>'beautiful m,f'</td>
<td>SabiiH(a)</td>
</tr>
</tbody>
</table>

7. The “gahawa” phenomenon: gutturals and positions.

¹ Such a consonant is indicated with capitalization.
• In many Semitic languages (McCarthy 1994, Rose 1999 for discussion and references), epenthesis occurs after coda lower vocal tract consonants so that they surface in onset position.

• In some, as in the examples below from Jordanian Arabic (Sakarna 1999), this is followed by deletion of the previous vowel.

  gah.wa --> gha.wa  ‘coffee’
  lah.ja --> lha.ja  ‘accent’
  nax.la --> nxa.la  ‘palm tree’
  na’ja --> n’ja  ‘goat’
  baS.la --> bSa.la  ‘onion’
  zaT.ma --> zTa.ma  ‘cover’

• However, McCarthy (1994:214) shows that when the relevant consonant is in stem- or word-final position, epenthesis fails to apply.

• The consonants’ extrasyllabicity, independently needed to account for stress, can account for this (*CodaGuttural).

  raw.waH  ‘he went home’
  raw.waH-na  ‘we went home’
  ba.lah  ‘dates’
  ma.na‘  ‘he prohibits’
  di.fa‘-na  ‘we pushed’

--> Result: Gutturals are licensed only in prominent positions – in onsets and word- or stem-finally.

8. **Positional maximization and the Classical Arabic phrase-final syllable.** Criterion C: Positional triggering of phonological processes.

• Positional maximization refers to syllabifications such as /ar.an/ in Scots Gaelic, and ambisyllabicity of intervocalic consonants in Danish (Beckman 1998:218, 236).

• The syllable weight of the first (and prominent) syllable of the word is thereby enhanced.

• Arabic employs a variety of such strategies to enhance the final syllable of a phrase (Wright 1996:368-373).

  i) Final short vowel dropped (prose).
  ii) The resulting final consonant is then optionally geminated.
  iii) Final short vowel lengthened (poetry).
  iv) Feminine singular suffix /a/ pronounced /ah/ or /at/ (historically /at/).
  v) Metathesis between last consonant and final case vowel (Borg 1977:220).

• However, McCarthy (1994:214) shows that when the relevant consonant is in stem- or word-final position, epenthesis fails to apply.

  bak.r-u ‘young camel nom.’ --> ba.kur

--> Result: creation of heavy or super-heavy syllables phrase-finally.

FinalHeavy

9. **Conclusion.** Final prominence effects definitely seen. What’s more, the deletion observed as part of the maximization “conspiracy” suggests that final deletion has been possibly misinterpreted as indicating final weakness. It can just as well indicate that the opposite is true.

Extending Zoll’s notion of licensing branching to nodes, not just tones, and along with an onset licensure this reflects the distribution of secondarily-articulated emphatics in Arabic dialects (but doesn’t cover pharyngeals). Other examples? mine or contrasts listed by Barnes aren’t branching in this way.

**References**


Rose, Sharon. 1999.


