How much for that vowel?
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This talk argues for the modeling of both underlying and surface segmental strength in terms of gradient activity, the notion proposed in e.g. Smolensky, Goldrick & Mathis (2014). The empirical phenomenon examined is the quality of epenthetic vowels.

In many languages, the epenthetic vowel is homophonous to one of the lexical vowels. However, it is well known that different languages have different epenthetic vowels, even if they have identical vocalic systems (Hall 2011). For instance, while both Levantine Arabic and Modern Hebrew contrast five vowel qualities, the epenthetic vowel is [i] in the former and [e] in the latter. Theorists have attempted to account for the variation mainly by structuring the phonemic systems such that the epenthetic vowel is a structural default: the two languages are identical superficially, but somehow their systems are structured in a way that identifies the default as [i] in one and [e] in the other. In this talk would like to show that defective activity can come to constitute an alternative to structural defaultivity. As I will show, the analysis requires that output candidates be allowed to have gradient activity, too.

Consider the data from the Levantine Arabic dialect of Jaffa in (1). Two generalizations about the morphology and phonology of this language are discernible in (1a). First, the feminine suffix -e alternates with -t- when another suffix is added. Second, the last heavy syllable of the word is stressed, so that stress must be shifted one syllable to the right in the possessed form. In (1b), the lexical substitution of -e by -t- creates a triconsonantal cluster that is resolved by the insertion of epenthetic [i] (in bold). Crucially, this vowel will not be stressed even though it creates a closed syllable. Note that stress can be shifted to a vowel [i] in such a position (1c). This contrast is explained by assuming that in Arabic, epenthetic vowels — vowels not appearing in the input — cannot be stressed (see e.g. Watson 2011).

According to this view, the unstressed [i] in (1b) cannot be lexical, while the second [i] of (33c) must be lexical, because it is stressed. Nevertheless, as (1d) shows, such lexical [i]’s also alternate with zero: their lexical status does not protect them against syncope when they are not stressed and not final.

There are therefore two surface [i]’s in Levantine Arabic: one is epenthetic, the other lexical. The lexical vowel, like the epenthetic one, alternates with ø. Crucially for the present purpose, this scenario seems to instantiate a cross-linguistic tendency: when the epenthetic vowel of a language has the quality of the lexical vowel, the latter also exhibits weakness.

I propose that this is not an accident. Vowels, I submit, have “prices” that are stated in terms of levels of underlying activity. In Palestinian, /a/ has an activity level of 1, but lexical /i/ has weaker activity, say 0.8. For this reason, the lexical vowel /i/ can be syncopated in open syllables, but /a/ cannot be: more activity is lost, or a higher price is paid, if /a/ is syncopated than if /i/ is.

The same activity-based conceptualization of strength can explain the quality of epenthesis: assuming that /i/ and /a/ have different “prices”, inserting an /i/ “costs” less, or is less of a violation of DEP, than inserting /a/. This proposal is formalized in Gradient Harmonic Grammar in (2), in which constraints (here *CCC and DEP) are weighted and a Harmony score is calculated for each candidate. The formalization requires that candidates, and not only inputs, have gradient activity.

The assumptions above can motivate the choice of different quality epentheses in apparently identical vocalic systems: Modern Hebrew would have a vowel /e/ with underlying deficient activity, whereas in Jaffa Arabic /i/ would have that characteristic.

Time Permitting, I will address the issue of languages in which the epenthetic vowel is not identical in quality to any lexical vowel. I will examine a case from Tigre and show that
adopting Element Theory (Kaye et al. 1985), if one assumes that headedness is costly Accordingly, a non-head expression [i] is preferred to the headed expression [i].

(1) Levantine Arabic dialect of Jaffa: epenthetic and lexical [i]’s
   a. mádras-e ‘school’ madrás-t-i ‘my school’
   b. kúrf-e ‘room’ kúrf-t-i ‘my room’ *kúrf-t-i
   c. libis ‘he wore’ libis-na ‘we wore’
   d. lib-u ‘they wore’

(2) Quality of epenthesis with gradient activity in candidates

<table>
<thead>
<tr>
<th>Weight</th>
<th>Harmony</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. kúrf-ti</td>
<td>1</td>
</tr>
<tr>
<td>b. kúra’tf-ti</td>
<td>1</td>
</tr>
<tr>
<td>c. kúri⁰.⁸tf-ti</td>
<td>0.8</td>
</tr>
</tbody>
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References