

## How much for that vowel?

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This talk argues for the gradient underlying segmental strength, a notion proposed in e.g. Smolensky, Goldrick & Mathis (2014). The empirical phenomenon examined is the quality of epenthetic vowels.

It is well known that different languages have different epenthetic vowels, even if they have identical vocalic systems (Hall 2011). For instance, both Modern Hebrew and Suleymanniya Neo-Aramaic contrast five vowel qualities [a e i o u], yet the epenthetic vowel is [e] in the former and [ə] in the latter. Some theorists simply admit the arbitrariness of this choice (Nasukawa 2014), others attempt to derive it from the structure of the system, and yet others propose universal hierarchies (Lombardi 2003, De Lacy 2006). In this talk I would like to show that defective activity can come to constitute an alternative to these proposals. As I will show, the analysis requires that candidates as well as inputs be allowed to have gradient activity.

The talk will begin with a test case from Levantine Arabic, in which a short [i] can be either epenthetic or corresponds to a lexical vowel. Despite their different origins, they behave identically with respect to syncope: neither surfaces when syllabically unnecessary. 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 a 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/.

After reviewing other cases of correlations between a weak lexical vowel and the quality of epenthesis, I move to some consequences of this idea. First, the 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. I then extend the idea to address two more issues: i. languages in which the epenthetic vowel is not identical in quality to any lexical vowel; and ii. interactions between stress and the weak vowel/epenthesis.