

Unexpected length: Prosodic vs. morphological structure

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Main Claim Prosodic structure is often determined with reference to the morphological structure. There are many arguments that this is best modeled by assuming constraints explicitly demanding an isomorphism between morphological and prosodic structure which in turn predict apparent exceptional asymmetries on the segmental level (e.g. Peperkamp, 1997; Itô and Mester, 2015; Lunden, 2018). In this talk, I argue for an extension of this constraint family to ‘morpheme-contiguous dominance’ constraints that correctly predicts 1) the existence of long epenthetic vowels and 2) the variation between languages with and those without exceptions to morphological vowel lengthening.

Morphological lengthening and unexpected length In morphological lengthening contexts, a certain morpheme triggers lengthening of a segment, either together with the realization of segmental content or without it: Morphological lengthening contexts show variation when it comes to epenthesis contexts. If an epenthetic vowel is inserted in the position where morphological lengthening is expected, this epenthetic vowel is short in some languages (e.g. in Arbizu Basque where epenthetic /e/ avoids a final cluster (1-b)) but long in others (e.g. in Southern Sierra Miwok where epenthetic /i/ avoids a superheavy syllable (2-b)). This latter pattern (also attested in, for example, Guajiro, Lardil, Czech, and Huallaga Quechua (Zimmermann, 2017)) is surprising given the fact that epenthetic vowels in most languages are rather weak phonetically and phonologically (Piggott, 1995; van Oostendorp, 1995; Hall, 2011).

- (1) *Arbizu Basque* (Hualde, 1990, 283)
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|----|-----------|-----------|----------------|
| a. | alaba:n | alaba:n | ‘daughter-Gen’ |
| | pa:te:n | pa:te:n | ‘wall-Gen’ |
| b. | txakur:-n | txakur:en | ‘dog-Gen’ |
| | gizon -:n | gizonen | ‘man-Gen’ |
- (2) *Southern Sierra Miwok* (Broadbent, 1964, 63)
- | | | | |
|----|---------------|-------------|--------------------------|
| a. | lit-h-a:-me? | litha:me? | ‘it’s risen on us’ |
| | kel:a-na:-me? | kel:ana:me? | ‘it snowed on us’ |
| b. | ?opa:-t:-me? | ?oparti:me? | ‘it’s clouding up on us’ |
| | ?umu:c:-me? | ?umu:ci:me? | ‘it’s raining on us’ |

I argue that the existence of long epenthesis in morphological lengthening contexts should be accounted for by a constraint that relates prosodic and morphological structure and demands morpheme-contiguous dominance relations. The theoretical background for such an account is the standard autosegmental analysis of morphological lengthening which is based on affixed floating moras (e.g. Lombardi and McCarthy, 1991; Samek-Lodovici, 1992).

Proposal: Morpheme-contiguous dominance One standard way to formalize the influence which morphological structure can have on the building of prosodic structure is the assumption of ALIGNMENT constraints (McCarthy and Prince, 1993) demanding that the edges of morphemes and, for example, syllables or prosodic words coincide. In this talk, I argue for a related constraint family that penalizes dominance relations within the prosodic hierarchy that result in a misalignment of morpheme content. More concretely, the constraint (3) will be relevant in the morphological lengthening cases discussed above. It demands that every vowel must be dominated by at least one mora that is not affiliated with another mor-

pheme (reminiscent of V-WT ('All vowels must project their own mora') in Goldrick (2000)). It is defined with reference to morphological 'colours', i.e. the assumption that all elements belonging to one morpheme can be identified by a morph-unique colour and epenthetic elements lack any colour (van Oostendorp, 2006; Revithiadou, 2007).

- (3) $V_i \rightarrow \mu_{i/\emptyset}$:
Assign a violation mark for every vowel V_i that is only dominated by moras affiliated with another morpheme k .

It's effect for the long epenthesis cases is straightforward: If an epenthetic vowel is inserted and only dominated by the floating mora that triggers lengthening in this context, a violation of $V_i \rightarrow \mu_{i/\emptyset}$ arises given that this vowel is now only be dominated by a 'foreign' mora (4-a) (where morphological affiliation is marked with subscripts). Insertion of an epenthetic mora avoids this violation since the vowel is now dominated by a colour-less mora as well (4-b). A long epenthetic vowel results. $V_i \rightarrow \mu_{i/\emptyset}$ hence predicts a seemingly opaque overapplication of mora insertion: An epenthetic mora is inserted though the floating affix mora should have been sufficient to provide the mora-less epenthetic vowel with a mora.

- (4) a. *Short epenthetic vowel: $*V_i \rightarrow \mu_{i/\emptyset}$* b. *Long epenthetic vowel: $\checkmark V_i \rightarrow \mu_{i/\emptyset}$*
- | | |
|---|---|
| $\begin{array}{ccccccc} \mu_1 & \mu_1 & \mu_1 & \mu_3 & \mu_3 & & \\ & \vee & & \vdots & & & \\ \uparrow_1 & o_1 & p_1 & a_1 & t_2 & \ddagger & m_3 & e_3 & \uparrow_3 \end{array}$ | $\begin{array}{ccccccc} \mu_1 & \mu_1 & \mu_1 & \mu & \mu_3 & \mu_3 & \\ & \vee & & \vdots & & & \\ \uparrow_1 & o_1 & p_1 & a_1 & t_2 & \ddagger & m_3 & e_3 & \uparrow_3 \end{array}$ |
|---|---|

Further predictions The constraint $V_i \rightarrow \mu_{i/\emptyset}$ also solves a notorious Richness of the Base problem for mora affixation accounts of morphological vowel lengthening: If a vowel happens to not be dominated by a mora underlyingly (given that a single mora on a vowel is non-contrastive), the addition of a floating mora is not expected to result in a long vowel but a short vowel (cf. e.g. Topintzi, 2010; Kiparsky, 2011). If $V_i \rightarrow \mu_{i/\emptyset}$ is high-ranked, this problem is resolved: An underlying mora-less vowel is expected to behave exactly as the epenthetic vowel (4-b) and project another epenthetic mora to circumvent a violation of $V_i \rightarrow \mu_{i/\emptyset}$. We hence predict a language where morphological lengthening results systematically results in long vowels, independent of whether the vowels in question are underlyingly mora-less or moraic.

Conversely, however, if $V_i \rightarrow \mu_{i/\emptyset}$ is low-ranked in a language, we expect that only certain vowel undergo morphological lengthening (=those with an underlying mora) and others not (=those without an underlying mora). This is a welcome prediction since there are indeed many languages where certain morphemes are lexical exceptions to a morphological lengthening process (e.g. Zuni (Newman, 1965), Tzutujil (Dayley, 1985), Hausa (Newman, 2000), Diegueño (Walker, 1970), or Algonquian (Costa, 1996)). This model based on morpheme-contiguous dominance constraints does not only predict this variation between exceptionless and exception-full morphological lengthening languages, it also predicts that long epenthetic vowels can only occur in the former type of language. This prediction is seemingly borne out in the typology of morphological lengthening languages: No language employs both long epenthetic vowels in morphological lengthening contexts and also lexical exceptions to this morphological lengthening.