Floating-Mora and Defective-Segment Affixation in Anywa

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Main Claim: Morphological gemination and vowel-length manipulating morphology have both been argued to derive from mora affixation (Samek-Lodovici 1992, Grimes 2002, Haugen 2008). However, this leads to a paradox for languages which have both processes in identical phonological environments (Davis and Ueda 2006). In this talk, I give an analysis of quantity-manipulating morphology in Anywa (Western Nilotic, Reh 1993) and argue that vowel shortening and polarity derive from mora affixation, whereas gemination is a consequence of affixing an empty consonantal root consonant. **Data:** Suffixes in Anywa may trigger shortening of root vowels (1-a), gemination of final consonants (1-b), gemination + vowel shortening (1-c), or gemination + vowel length polarity. **Framework:** I assume autosegmental representations and the Colored Containment version of Optimality Theory (van Oostendorp 2006), where underlying elements are distinguished from epenthetic material by morphological color, and adopt the following crucial assumptions on GEN: *Containment:* Underlying phonological material is never literally deleted, but may be marked as phonetically invisible. *Visibility of Epenthesis:* Epenthetic (colorless) material is phonetically visible. *Phonetic Connectedness:* All and only phonological nodes which are phonetically dominated by a designated root node are pronounced. *Doubling:* All markedness constraints exist in two versions, one referring only to phonetically visible material, and one to all material in a given structure. **Analysis:** Following Bye and Svenonius (2010), I assume that nonconcatenative morphology is the effect of affixing defective phonological material. The form this takes here is *Maraudage:* Phonological material which lacks crucial association (e.g. floating features) is guaranteed association at the cost of underlyingly associated structure, based on the fact that constraints requiring association such as $\sigma \leftarrow \mu$ treat phonetically visible/invisible material on a pair whereas *Visibility of Epenthesis* allows only visible epenthetic association. Thus I take Anywa affixes inducing V-shortening to carry a floating μ (3-a). Under the pressure of $\sigma \leftarrow \mu$ (2-a) , the affix-μ is associated to the roots, but remains unassociated to segmental material due to high-ranked faithfulness constraints. For short-V roots this doesn't have any phonological effect, but long root Vs are shortened (one of their μ's is deassociated) to satisfy $*\underline{\sigma}_{4\mu}$ (2-b) , which militates against syllables associated phonetically to more than 3 μ's. Crucially the first vowel-μ mora must sacrifice phonetic association to the syllable node to guarantee association of the floating μ since the underlying root mora remains associated to σ even if this association is not pronounced (satisfying $\sigma \leftarrow \mu$) whereas the only possibility to avoid a $\sigma \leftarrow \mu$ violation for the floating μ is to insert a phonetically visible association. Maraudage is also crucial for deriving gemination from underlyingly Place-less root nodes in affixes (3-b). Undominated HAVE-PLC (2-d) requires association of the affix C to a consonantal Place node. Since Anywa doesn't allow sharing of consonantal Place among consonants, the floating C has to maraud the Place feature from the root consonant which deletes, to avoid producing a Place-less consonant (a violation of $\underline{\text{HAVE-PLC}}$, i.e. HAVE-PLC restricted to phonetic material). To satisfy ONSET, the affix C must function as the onset of the following nucleus, but simple association to the affixal σ node would violate DER(IVED) ENV(IRONMENT) (2-e, cf. the constraint ALTERNATION in van Oostendorp 2007) penalizing epenthetic association of tautomorphemic material. The only escape hatch is to associate C to the following σ *and* the orphaned μ of the root consonant, which results in a geminate. (3-c) straightforwardly combines the representations of (3-a,b), whereas for suffixes of type (3-d) floating μ and defective C are underlyingly associated to each other. In this configuration, the association of the affix C to the root σ is gratuitously guaranteed via its link to the affix-μ. This leaves the consonantal root-μ free for compensatory lengthening in short root vowels, which is blocked in other cases under the assumption that μ's are not allowed to dominate more than one phonetic segment. With long root Vs, association of the floating μ to the root σ-node and the ban on vowels associated to 3 μ's (2-c) leads again to shortening. Taken together, this results in vowel length polarity. Summing up, vowel shortening results from μ-affixation, gemination from affixation of a Place-less consonantal root node, and polarity from additional compensatory lengthening rendered possible by preassociation of both nodes. Thus under the proposed account, the

typology of possible inputs triggering quantity changes coincides exactly with the observed data.

(1) **Types of Quantity-Manipulating Morphology in Anywa** (Reh 1993)

	Short Root V	**Long Root V**
a. **V-Shortening (Antipassive)**	ŋʌr → ŋʌr-o, 'growl at sth.' (p. 225)	pu:r → pur-o, 'cultivate,hoe sth.' (p. 223)
b. **Gemination (Plural)**	gwɛg → gwɛg:-i, 'kudu' (p.105)	aga:r → aga:r:-ɪ, 'hunting spear' (p.105)
c. **Gemination + V-Shortening (Process Derivation)**	mar → mʌr:-o, 'be green,young' (p.248)	dɪ:ɲ → dɪ:ɲ-ɔ, 'be narrow' (p.247)
d. **Gemination + V-Polarity (Frequentative Derivation)**	ban → ba:n:-ɔ, 'fold up' (p.244)	ca:n → can:-ɔ, 'tell' (p.245)

(2) **Crucial Constraints**

a. σ ← μ — Assign ∗ to every μ which is not dominated by at least 1 σ

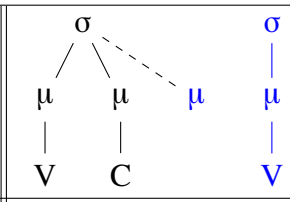
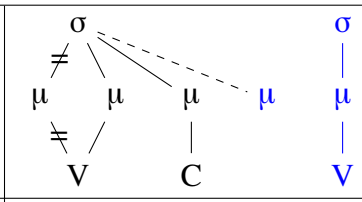
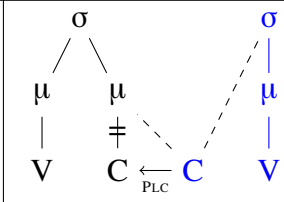
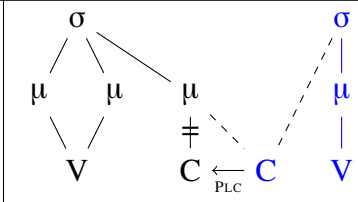
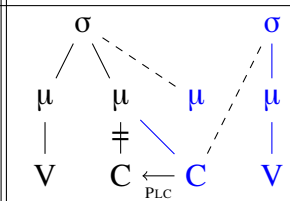
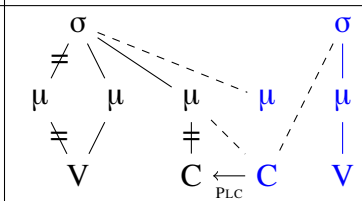
b. $*\underline{\sigma}_{4\mu}$ — Assign ∗ to every σ which phonetically dominates more than 3 μ's

c. $*V^{3\mu}$ — Assign ∗ to every V which is dominated by more than 2 μ's

d. HAVE-PLC — Assign ∗ to every segment which is not associated to at least 1 Place feature

e. DER-ENV: — Assign ∗ to every morphological consonant which is associated by an epenthetic association line to a prosodic category of the same color and is not associated to a prosodic category of a different color

(3) **Output Representations**
(affixal material is depicted in blue, epenthetic association by dotted lines, and phonetically invisible association lines by ǂ), Place maraudage is indicated by $\overleftarrow{\text{PLC}}$)

	Short Root V	**Long Root V**
a. **V-Shortening**		
b. **Gemination**		
c. **Gemination + V-Shortening**		
d. **Gemination + V-Polarity**