

Generalized Mora Affixation

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Types of Quantity Manipulating Morphology

- 1 Lengthening (Vowel Lengthening, Gemination)
- 2 Insertion of Epenthetic Segments
- 3 Vowel Shortening
- 4 Subtractive Morphology
- 5 Length Polarity

Generalized Mora Affixation

Standard Assumption:

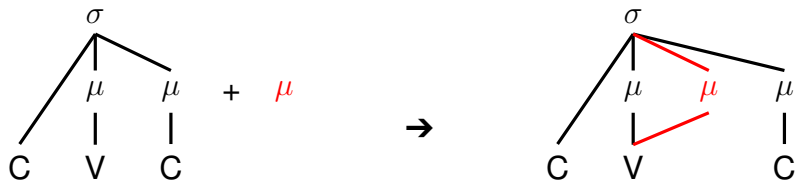
Augmentative quantitative morphology \approx mora affixation

(e.g. Samek-Lodovici 1992, Grimes 2002, Davis 2006)

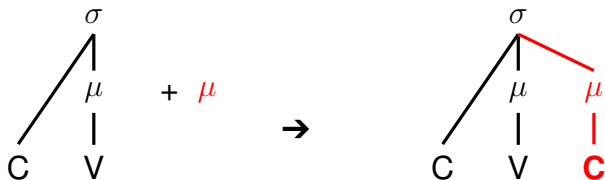
Our Claim:

Subtractive quantitative morphology \approx mora affixation

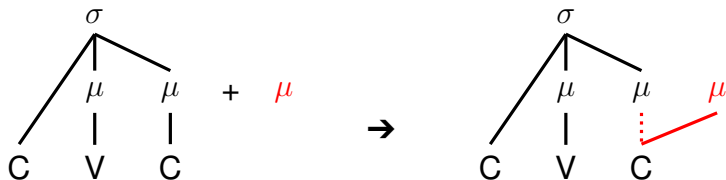
Lengthening



Insertion



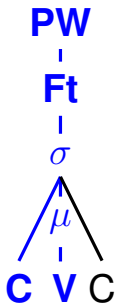
Subtraction



Simplicistic Coloured Containment Theory (Trommer 2008)

- Deletion \approx Marking of morphological material as phonetically invisible
- Phonological material of every morpheme has an unambiguous color
(van Oostendorp 2006)
- Insertion \approx Addition of colorless material

Epenthesis



⇒ phonetically [CVC]

Axiom of Phonetic Visibility

All and only the phonological nodes which are dominated by the designated root node through an uninterrupted path of phonetically visible nodes and association lines are pronounced.

Deletion of Association Lines

Underlying association line	
phonetically visible:	phonetically invisible:
μ S	μ ⋮ S

Faithfulness Constraints on mora association

(1) $\text{Dep}_{\mu}^{\mu} | \text{S}$ | Assign a violation mark to every colourless association line linking a mora and a segment

(2) $\text{Max}_{\mu}^{\mu} | \text{S}$ | Assign a violation mark to every phonetically invisible association line linking a mora and a segment

Deletion of Segments



⇒ phonetically [CV]

Constraints on μ -Integration

- (3) μ | Assign a violation mark for every μ that
 \downarrow | does not dominate (phonetically or morphologically)
S | a segment.
- (4) σ | Assign a violation mark for every mora that
 \uparrow | is not dominated (phonetically or morphologically)
 μ | by a syllable node.

Augmentation in Shizuoka-Japanese

(5)	Adjective	Emphatic form	
	hade	hande	“showy”
	ozoi	onzoi	“terrible”
	nagai	nangai	“long”
	katai	kattai	“har”
	osoi	ossoi	“slow”
	takai	takkai	“high”
	zonzai	zo:nzai	“impolite”
	suppai	su:ppai	“sour”
	okkanai	o:kkandai	“scary” (Davis & Ueda 2002)

Gemination in Shizuoka-Japanese

(6)

	σ \uparrow μ	μ \downarrow S	Dep μ S	Dep σ μ
<p>Diagram showing two syllable structures (σ) for the sequence k a t a i. The first syllable has a nucleus μ (a) and a coda μ (t). The second syllable has a nucleus μ (a) and a coda μ (i). A red μ symbol is placed to the right of the second 'a'.</p>	*!	*		
<p>Diagram showing two syllable structures (σ) for the sequence k a t a i. The first syllable has a nucleus μ (a) and a coda μ (t). The second syllable has a nucleus μ (a) and a coda μ (i). A red μ symbol is placed to the left of the second 'a'.</p>	*!		*	
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<p>Diagram showing two syllable structures (σ) for the sequence k a t a i. The first syllable has a nucleus μ (a) and a coda μ (t). The second syllable has a nucleus μ (a) and a coda μ (i). A red μ symbol is placed to the left of the second 'a'. A black arrow points to the first 'a'.</p>			*	*

Vowel Shortening in Anywa

(7)	Root	Antipassive	
V: ⇒ V	ri:w-	riw-	“to lay sth. crosswise”
	ma:θ-	ma ₊ θ-	“drink sth.”
	cu:l-	cu ₊ D-	“pay sth.”
V ⇒ V	cam-	ca ₊ m-	“eat sth.”
	ɲɔl-	ɲɔ ₊ l-	“cut sth. off”

(Reh 1993)

Vowel Shortening in Anywa: Analysis

- The affix- μ attaches to the σ -node to integrate into prosody but fails to dominate a segment due to faithfulness
- Long vowels are shortened to satisfy a maximal limit of 3 moras per syllable

Avoidance of too many Moras

(8)

$*\sigma$
|
 ρ
 μ_4

Assign a violation mark for every syllable that phonetically dominates more than three moras.

Vowel Shortening in Anywa: Long Stem Vowel

(9)

	σ ↑ μ	$*\sigma$ _p μ_4	MAX-S	μ ↓ S
	*!			*
		*!		*
				*

Vowel Shortening in Anywa: Long Stem Vowel

(10)

	σ ↑ μ	$^*\sigma$ _p μ_4	MAX-S	μ ↓ S
			*!	*
				*

Vowel Shortening in Anywa: Short Stem Vowel

(11)

	σ \uparrow μ	$*\sigma$ \downarrow μ_4	MAX-S	μ \downarrow S
	*!			*
			*!	*
				*

Subtractive Morphology in Tohono O'odham

(12)	Imperfective	Perfective	
	bisck	bisc	“sneezed”
	ñeok	ñeo	“spoke”
	ma:k	ma:	“gave”

(Fitzgerald 1997, Horwood 2001)

Subtractive Morphology in Tohono O'Odham: Analysis

- The affix mora comes to dominate a coda segment to integrate into prosodic structure, but fails to be dominated by a syllable node due to faithfulness
- To avoid domination of a segment by two root nodes, mora & segment dissociate from the overall prosodic structure
- Non-integration of mora & segment is phonetically interpreted as non-pronunciation

Implementing Avoidance of Multiple Root Nodes

(13) 1-ROOT:

Assign a violation mark for every segment
that has more than one phonetic root node
(= nodes that are not dominated by another node)

Subtractive Morphology in Tohono O'odham: Analysis

(14)

	μ \downarrow S	Dep $^{\sigma}$ μ	1-ROOT	σ \uparrow μ	Dep $^{\mu}$ S
	*!				
		*!			*
			*!		*
				*	*

Conclusion

- Quantity-manipulating morphology is triggered by affixation of a μ
- Non-augmentative effects follow from partial prosodic non-integration of a μ
- Subtractive/Shortening/Polarity effects in morphology follow from the same mechanisms as mora augmentation

Advantages of the Prosodic Analysis

- accounts for the restriction of subtractive morphology to coda consonants (and vowels)
- accounts for the local adjacency of subtraction to morpheme edges
- extends naturally to cases of length polarity
(Wolff 2001, Andersen 1988)

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Plural in Eastern Franconian (Seiler 2008)

- in this Upper German dialect of the Taubergrund, length of the stem vowel distinguishes singular and plural forms

(15) *Eastern Franconian Nouns*

Sg		Pl
ri:s	“crack”	ris
fi:f	“fish”	fij
fni:ds	“cut”	fuids
fle:k	“blot”	flek

- Seiler (2008) argues, that it this is not an instance of morphological lengthening to form the singular, but rather **the absence of expected lengthening** in the plural