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Reduplication as fission: The argument from multiple reduplication

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Main Claim

- The many **different reduplication patterns** in Nuuchahnulth follow from an account solely based on **affixation of prosodic affix-nodes and segmental fission**.
- **Avoidance of multiple reduplicants** is a straightforward consequence of standard faithfulness-constraints.

→ An OT-account based on RED and BR-faithfulness is less economic than this **purely phonological account** and fails to predict the typology of multiple reduplication.

Data I: Different reduplicants

- Nuuchahnulth employs **different monosyllabic reduplication** patterns (Kim, 2003, 2008; Stonham, 2004, 2007; Pulleyblank, 2016)

1. MaxT (e.g. /-ʃ/ 'continually')
   tuːh tuːh-tuːh-ʃʔiʃʔaɬ
   watq watq-watq-ʃʔiʃ
2. MinT (e.g. /-ʔaɬuk/ 'to look after')
   tʃapχ tʃa-tʃapχ-ʔaɬuk
   nuːkʷ nuː-nuːkʷ-ʔaɬuk
3. MinL (e.g. /-ʔiːk/ 'so. always doing sth.')
   ʔuːwa ʔuː-ʔuːwa-ʔiːk
   jaqtɬ jaː-jaqtɬ-st'aɬʔiːk
4. MinS (e.g. /-jukʷ/ 'to cry'
   wik wi-wik-jukʔiʃ
   ʔuːʃ ʔu-ʔuːʃ-juk'ʷap'atɬ'i
5. MaxL+L (e.g. /-(j)a/ 'continuously')
   w'asaq w'aː-w'aːsaq-aʔiʃ
   tsuts tsuːts-tsuːts-aʔiʃ
6. MinS+S (e.g. /-k'ukʷ/ 'to resemble')
   tɬ'iːxʷ tɬ'i-tɬixʷ-ak'uk
   qʷiː qʷi-qʷi-qk'ukʷiː
7. MinL+S (e.g. /-itʃ'ak/ 'afraid/fear')
   wik wiː-wik-itʃ'ak
   siːts siː-sits-itʃ'aksiʃ
8. MaxS+L (e.g. /-n'uk/ 'on the hand')
   tupk tupk-tuːpk-n'uk
   tɬ'aːq tɬ'aq-tɬ'aːq-n'uk
9. MinS+L (e.g. /-sapi/ 'to depend on')
   wik wi-wiːk-sapiʔiʃ
   ʔuːʃ ʔu-ʔuːʃ-sapiʔiʃ

Distinguishing the different reduplicants

Min	=	only CV copied
Max	=	coda copied as well
L	=	Red-V is long
S	=	Red-V is short
T	=	Red-V copies length of base-V
+L	=	base-V long
+S	=	base-V short

Data II: Adjacent reduplicants?

- multiple reduplication-triggers in one word=only **one reduplicant** surfaces (if affixes on same (stem/word) level (Stonham, 2004, 2007))

Underlying		*Reduplicated*	
Red_{Min+L} + Red_{MinL+L}	+ tɬ'uk	tɬ'uː-tɬ'uːk	(=MinL+L)
Red_{Min} + Red_{MinL+L}	+ m'aɬ	m'aː-m'aːɬ	(=MinL+L)
Red_{MinL} + Red_{Min} + Red_{Min+L}	+ hin	hiː-hin	(=MinL+L)

'The result is always a single copy that reflects the features required by all of the suffixes that appear.' (Stonham, 2007, 121)

Analysis I: Different reduplicants=different prosodic affixes

(1)

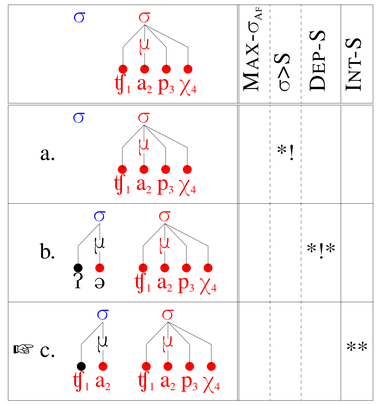
- **purely phonological account** where copying is a general phonological repair process to avoid, for example, empty prosodic nodes (=Minimal Reduplication Theory, Saba Kirchner, 2007, 2010)

→ only IO-faithfulness constraints and **affixation of prosodic material** that must be filled with material, due to e.g.

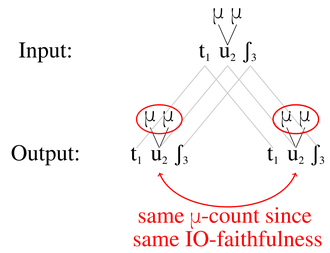
❦ σ>S: Assign * to every σ not dominating a segment.

- 'copying' is **fission**: one input element corresponds to two output elements violating Integrity (Struijke, 2000; Gafos, 2003; Nelson, 2003)

(2) *Basic copying mechanism*



(3) *Collateral IO-faithfulness after fission*



- additional **elements provided via fission are subject to IO-Faith**: the smaller/less specified the prosodic affix is, the more similar it gets to the 'copied' base syllable

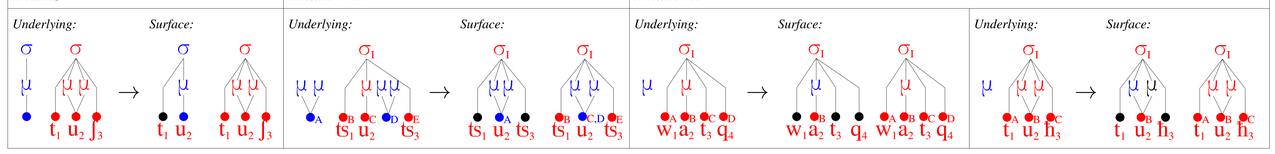
(4) *Affixed prosodic nodes and their consequence for the base in Nuuchahnulth*

Prefixed μ	=	Segment **fission** to fill the prosodic node
Infixed μ	=	**Lengthening of base V** to avoid base-internal fission (=Contiguity)
σ-node	=	**Minimal** copying of CV: Integrity-violations kept to a minimum
No σ-node	=	**Maximal** copying: underlying σ-node undergoes fission & FaithS(σ)
Root node	=	Reduplicant-V has **length specified** in prosodic affix
No root node	=	**length transfer**: vocalic root node undergoes fission & Faithμ(S)

❦ FaithS(σ): Assign * for every output syllable not dominating the same segments that the corresponding input syllable dominates.

❦ Faithμ(S): Assign * for every output segment that is not dominated by the same number of moras as the corresponding input segment.

(5) *Examples: some reduplicative affixes in Nuuchahnulth*



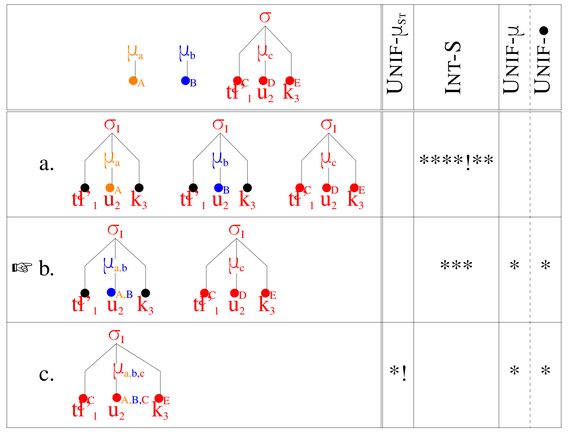
Analysis II: Avoidance of multiple reduplicants=avoidance of segment fission

- In the presence of multiple prosodic nodes (in one stratum), these affix-nodes can undergo **fusion to keep 'copying' (=fission) to a minimum**

❦ Unif-μ
Assign * for every output-μ that corresponds to more than one μ in the input.

❦ $Unif\text{-}\mu_{ST}$
Assign * for every output-μ that corresponds to more than one μ in the input and one is a stem-μ.

❦ $Unif\text{-}\mu_{(M\sigma)}$
Assign * for every output-μ that corresponds to more than one μ in the input and both are affiliated with the same morpheme.



Multiple reduplication: Typology

Two adjacent reduplication-triggering affixes and…

…**two reduplicants** surface.	…**one reduplicant** surfaces. (*in some contexts)
Lushotseed (Salish) (Broselow, 1983; Urbanczyk, 2001)	Nuuchahnulth (Wakashan) (Stonham, 2004, 2007)
Tigrinya (Ethio-Semitic) (Rose, 1997)	Amharic (Ethio-Semitic) (Rose, 1997)
Chaha (Ethio-Semitic) (Rose, 1997)	Manam (Austronesian) (Buckley, 1997)

Multiple reduplication and BR-faithfulness accounts

A. Different reduplicants

– BR-faithfulness constraints for different morphemes are ranked differently; e.g. Min vs. Max:

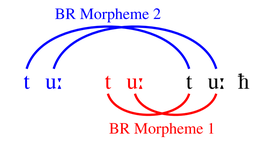
	$Max\text{-}BR_{ʃ}$	*Coda	$Max\text{-}BR_{ʔaɬuk}$
$RED_{/ʃ/\ 'continually'}$ - tuːh			
a. tuː-tuːh	*!	*	
☞ b. tuːh-tuːh		**	
$RED_{/ʔaɬuk/\ 'look\ after'}$ - tʃapχ			
☞ a. tʃa-tʃapχ		*	**
b. tʃapχ-tʃapχ		**!	

B. Avoidance of multiple reduplicants

① **Unified indexation** (Rose, 1997; Buckley, 1997)

∗ Integrity-BR penalizes multiple BR-correspondents (=one reduplicant per word)

∗ Morph-Expr ensures morpheme realization (=one reduplicant per reduplicative morpheme)



② *DupDup or *RedRed (Stonham, 2004, 2007)

→ constraints/mechanisms specific to reduplication

→ *In contrast:* the present account implements the insight that every reduplicative affix selects one **template** (Stonham (2004, 2007); Kim (2008)) **without assuming morpheme-specific BR-relations**; prosodic specifications are a consequence of prosodic affixes.