Unifying Prosodic and Segmental Repair: Metathesis and Epenthesis in Uab Meto

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1 Overview

- Languages differ on how they enforce syllable structure and prosodic requirements

- Some languages prefer epenthesis: Levantine Arabic epenthesizes to avoid CCC clusters (Gouskova 2009)

(1)   (Gouskova 2009) **Levantine Arabic**

    a. /katab-t-l-a/   ka.tá.bi̱t.la   'I wrote to him'   cf. katábt 'I wrote'

    b. /ʔalf-na/   ʔa.lí̱f.na   'our thousand'   cf. ʔálf 'thousand'

    c. /ʔibn-na/   ʔi.bi̱n.na   'our son'   cf. ʔíb.n-i 'my son'

- Other languages truncate: Samoan shortens long vowels in order to avoid HL syllable sequences (Zuraw 2018: e10)

(2)   (Zuraw 2018: e10) **Samoan**

    a. maaloo(lóo)   'rest [verb]'   maaloo(ló-a)   'rest.erg'

    b. too(fáa)   'sleep (polite)'   too(fá-ŋa)   'bedding'

- In Uab Meto (Austronesian; West Timor, Indonesia) is a language that prefers **metathesis**

(3)   **Uab Meto**

    a. mɛɔp   'work'   ɑ-mɛpo-t   'worker'

    b. ʔo͡ɛl   'younger sibling'   ʔolɛ-f   's.o.'s younger sibling'

    c. sonɑf   'palace'   sonfɑ-m   'palace-and'

    d. mɑ͡un   'chicken'   mɑnu   'chicken (phrase final)'

- This is similar to Rotuman (McCarthy 2000, Churchward 1940, a.o.) , but with a crucial difference: these changes are conditioned almost entirely by syllable well-formedness and stress

- **Proposal:** Uab Meto is a language that has metathesis as its preferred form of repair, even over epenthesis and deletion

- However, Uab Meto metathesis is limited to the last syllable of a root – initial syllables cannot undergo metathesis

- Final syllables have a wide range of faithfulness-violating mutations:

    – Metathesis, which is generally preferred over deletion/epenthesis

    – Consonant deletion and vowel epenthesis, which can occur in certain prosodic environments

- All data in this talk come from my own fieldwork in Bijaepunu, West Timor in the summers of 2018 and 2019

2 Metathesis is the preferred repair

- Word-final consonant clusters (*CC#) and three-consonant clusters (*CCC) are never possible in Uab Meto

- These clusters are preferentially resolved with metathesis, not epenthesis

- I introduce four constraints, *CC#, *CCC, DEP, and LIN

(4) *CC#: Assign one violation for each CC cluster that is word-final

(5) *CCC: Assign one violation for each sequence of three consonants.

(6) DEP: Every element in the output has a correspondent in the input. (McCarthy & Prince 1994: 9)

(7) LIN: S_1 reflects the precedence structure of S_2 and vice versa (No Metathesis)
        Let $x, y \in S_1$ and $x', y' \in S_2$. If $x \Re x'$ and $y \Re y'$, then x precedes ($<$) y iff x' precedes ($<$) y'.
        (McCarthy & Prince 1995:123)

- Consider a word like [manikin-t] 'the cold', derived from the root [manikin] '(be) cold'

(8)

/manikin-t/	*CC#	*CCC	DEP	LIN
a. maˈnikin-t	*!			
b. maˈnikin-at			*!	
☞ c. maˈnikni-t				*

- However, if metathesis would incur a new violation (such as *CCC), epenthesis can occur instead

- We can see this the word [/bsoʔ-at/] '(a) dance' with the UR /bsoʔ-t/

(9)

/bsoʔ-t/	*CC#	*CCC	DEP	LIN
a. ˈbsoʔ-t	*!			
☞ b. ˈbsoʔ-at			*	
c. ˈbsʔo-t		*!		*

- Thus, we only see epenthesis when metathesis is otherwise ruled out

- Uab Meto roots preserve the precedence relationships of their non-final syllables

  - Since stress is assigned to the penult, I interpret this as a type of prosodic neutralization (Steriade 1994) / root-initial faithfulness constraint (Beckman 1998)

  - Final syllables are less salient, and therefore can be less faithful

  - Precedence relationships are only violable in the last syllable of a root

- To capture this, I introduce LIN-NONFINAL, which militates against metathesis in the non-final syllables of a root

(10) LIN-NONFINAL: Assign one violation for each linearity violation that is not in the final (non-stressed) syllable of a root.[1]

- We see an example of this with [ˈkan-am] 'your name'

- Metathesis can't occur because it would violate initial syllable faithfulness (LIN-NONFIN), and so epenthesis occurs instead

(11)

/kan-m/	*CC#	LIN-NONFINAL	DEP	LIN
a. ˈkan-m	*!			
☞ b. ˈkan-am			*	
c. ˈkna-m		*!		*

- n.b. kna is an acceptable onset: e.g. knapan 'butterfly', knik 'horn', etc.

- Once words have more than one syllable, we see that metathesis is favored over epenthesis (e.g. sonaf 'palace' → sonfa-m 'and the palace')

(12)

/so.naf-m/	*CC#	LIN-NONFINAL	DEP	LIN
a. ˈsonaf-m	*!			
☞ b. ˈsonfa-m				*
c. ˈsonaf-am			*!	
d. ˈsnofa-m		*!		**

3   Metathesis optimizes stress

- Stress is fixed in Uab Meto: it occurs on the penultimate vowel of the root

- But, Uab Meto has a general preference for this stress to also align with the penult of the phonological word

  - The result: roots metathesize in order to have the penult of the root and the penult of the word coincide

  - Upon metathesis, VV sequences coalesce into diphthongs

  - Metathesis thus can reduce the syllable count at the end of roots

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[1]Monosyllables cannot metathesize.

- I model this with LAPSE-RIGHT, which penalizes stress occurring too far leftwards in the word[2]

(13) LAPSE-RIGHT: A maximum of one unstressed syllable separates the rightmost stress from the right edge of a stress domain. (Gordon 2002: 503)

- Additionally, there is no hiatus or diphthongization across morpheme boundaries

(14) *V-V: Assign one violation for each instance of vowel hiatus that crosses a morpheme boundary.

- Consider [kokes] 'bread', which becomes [ko͡eks-e] 'the bread'

(15)

/kokes-e/	*V-V	LAPSE-RIGHT	DEP	LIN
a. ˈkokes-e		*!		*
b. ˈkokes-je		*!	*	
☞ c. ˈko͡ek.s-e				*
d. ˈkokse-e	*!			

- Diphthongs are also preferred over hiatus – I model this with a high-ranked *VV constraint

(16) *VV: Assign one violation for each instance of vowel hiatus.

(17)

/kokes-e/	*VV
☞ a. ˈko͡ek.s-e	
b. ˈko.eks-e	*!

- n.b. diphthongs have the same duration as their monophthong counterparts

- In compounds, we also see LAPSE constraints at play, but referencing the left edge

- For example, fafi 'pig' becomes fa͡if-ʔanaʔ in the compound 'baby pig'

- I model this with LAPSE-LEFT

(18) LAPSE-LEFT: A maximum of one unstressed syllable separates the leftmost stress from the left edge of a stress domain. (Gordon 2002: 503)

- So, in the fa͡if-ˈʔanaʔ 'baby pig' example, *[fafiˈʔanaʔ] is ruled out by LAPSE-LEFT

(19)

/fafi-ˈʔanaʔ/	MAX-V	LAPSE-LEFT	DEP	LIN
a. fafiˈʔanaʔ		*!		
☞ b. fa͡ifˈʔanaʔ				*
c. fafˈʔanaʔ	*!			

- Note that LAPSE-LEFT is dominated by *CCC and LIN-NONFINAL

- Take for instance the compound besi-mnasiʔ 'crocodile (lit. old iron)'

(20)

/besi-mnasiʔ/	*CCC	LIN-NONFINAL	LAPSE-LEFT	LIN
☞ a. besi-ˈmnasiʔ			*	
b. be͡is-ˈmnasiʔ	*!			*
c. be͡is-ˈmansiʔ		*!		**

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[2]See Section 8 for full analysis of stress.

4 Metathesis and infixation

- Metathesis can never cross morpheme boundaries in Uab Meto

- I model this as *INFIX, a type of LIN that also references morpheme precedence

(21) *INFIX: Don't infix.
If $x, y \in S_1$ and $x \in M_1, y \in M_2$ where $M_1 < M_2$ in S$_1$,
then $x < y$ iff $\neg[Y' = \{y' \in S_2 \mid y'\Re y\} < X' = \{x' \in S_2 \mid x'\Re x\}]$.

<div align="right">(modelled after LIN-OUTSIDE-MORPHEME from Canfield 2015)</div>

- Consider the form [ʔoel-f-am] 'and s.o.'s younger brother', from the root [ʔoel] 'younger brother'

- *INFIX rules out infixation and morpheme rearrangement

(22)

| /ʔole-f-m/	*CC#	*INFIX	DEP	LIN
a. ʔo͡el-f-m	*!			*
b. ʔo.le-f-m	*!			
c. ʔol⟨f⟩e-m		*!		*
☞ d. ʔo͡el.-f-am			*	*
e. f-ʔole-m		*!		

- Note that LAPSE-RIGHT rules out candidates like *[ˈʔole-f-am], so regardless of the UR, we'll get the right output

(23)

/ʔole-f-m/	*CC#	LAPSE-RIGHT	DEP	LIN
a. ˈʔo.le.-f-am		*!	*	
☞ b. ˈʔo͡el.-f-am			*	*

- So, although Uab Meto has robust metathesis, it must always occur within a morpheme

- This is crucial data against proposals such as Horwood (2004), which attempt to unify constraints against infixation and constraints against metathesis

4.1 Interim summary

- To sum up, so far we've seen the following constraint ranking:

*VV — ONESTRESS — *CCC — *CC# *INFIX LIN-NONFINAL — *V-V

LAPSE-RIGHT/LAPSE-LEFT

DEP

LIN
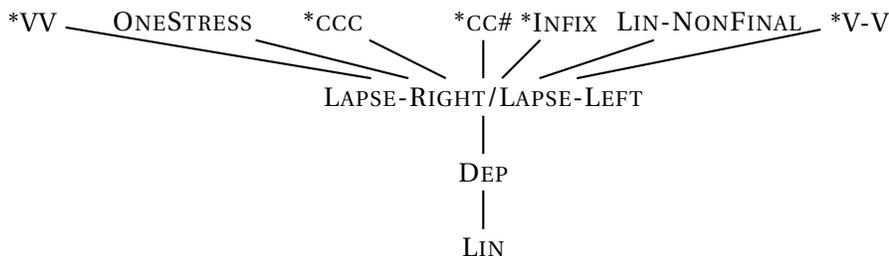
- Metathesis is the preferred repair strategy, but it can only occur in final syllables

- Metathesis is primarily conditioned by stress and consonant cluster repair

- If metathesis is not possible, epenthesis can occur instead

5 Discussion and Predictions

- Two advantages of this proposal:
    - Final syllables are uniformly "weak" and allow for other types of faithfulness violations in addition to LIN
    - "Larger-scale" phonotactics (i.e. sentence prosody) also cause alternations in surface consonant-vowel orders

5.1 Final syllables allow for other faithfulness violations

- If final syllables are "weak" and can violate LIN, we might expect for other faithfulness violations to be possible

- This is the right prediction: root-final vowels and consonants are subject to other types of repair depending on the prosodic context

- **Deletion of word-final consonants**: underlying word-final consonants delete when the word does not receive stress

- I model this with a MAX-NONFINAL constraint

(24)   MAX-NONFINAL: Assign one violation for deletion of anything other than a word-final consonant.

- An example comes from compounding: leloʔ 'citrus' becomes le͡ol-fuɟ͡ɟ 'wild citrus' when compounded, deleting the final glottal stop

- I assume that each constituent of the compound is indexed as a phonological word

(25)

/[[leloʔ]$_\omega$-[fuɟ͡ɟ]$_\omega$]$_\omega$	MAX-NONFINAL	*CCC	LAPSE-LEFT	MAX	LIN
a. leloʔ-ˈfuɟ͡ɟ			*!		
b. le͡olʔ-ˈfuɟ͡ɟ		*!			*
☞ c. le͡ol-ˈfuɟ͡ɟ				*	*
d. le͡oʔ-ˈfuɟ͡ɟ	*!			*	

- We also see this deletion with suffixes – e.g. [ʔamepot] 'worker' → [ʔa-meop-lele] 'field worker' when compounded

(26)

/[[ʔa-mepo-t]$_\omega$[lele]$_\omega$]$_\omega$/	MAX-NONFINAL	*CCC	LAPSE-LEFT	MAX	LIN
a. ʔa-mepo-t-ˈlele			*!		
b. ʔa-me͡op-t-ˈlele		*!			*
☞ c. ʔa-me͡op-ˈlele				*	*
d. ʔa-me͡o-t-ˈlele	*!			*	

- In some dialects, word-final vowels also show an alternation

- **Word-final vowels condition consonant epenthesis**: in the Mollo dialect, word-final vowels can strengthen into consonants

- Ask me about these later!

5.2 Prosodically-triggered alternations

- Might expect that other things could trigger metathesis on the sentential level, and they do!

- **Prosodic marking**: Stress is assigned to vP and nP phrases – essentially, most noun-adjective and verb-direct object sequences are domains for stress assignment

- This means that nouns and verbs metathesize when stress lands on the following word

(27) Nominal Domain - Noun Adjective

    a. ˈmɑ<u>nu</u>]$_{nP}$ nua
       chicken   two

       'two chickens'

    b. mɑ͡ʊn ˈmu<u>tiʔ</u>]$_{nP}$ nua
       chicken white   two

       'two white chickens'

(28) Verbal Domain - Direct Objects

    a. ɑʊ [ʔ-ɑ<u>m</u>   bɑˈkase ʔii   ]$_{vP}$
       1SG 1SG.AGR-look.for horse   DEM

       'I look for the horse.'

    b. bɑˈkase ʔii   ɑʊ [ˈʔ-ɑ<u>mi</u>   ]$_{vP}$
       horse   DEM 1SG 1SG.AGR-look.for

       'The horse is looked for by me.'

- This is essentially what we saw with compounds

(29) Nominal Domain - Noun Compounds

    a. ˈfa<u>fi</u>]$_{nP}$ ʔii
       pig   DEM

       'this pig'

    b. fa<u>if</u> ˈʔanaʔ]$_{nP}$ ʔii
       pig baby   DEM

       'this baby pig'

- I model this with ONESTRESS constraint (cf. CULMINATIVITY in Kager 1999), which requires each intonational phrase to have exactly one stress

(30) ONESTRESS: A φP has one and only one stress.

- So, if we look at (27) mɑ͡ʊn mutiʔ 'white chicken', we see it works the same as compounds

(31)

/manu mutiʔ/	ONESTRESS	LAPSE-RIGHT	LAPSE-LEFT	LIN
☞ a. mɑ͡ʊn ˈmutiʔ				*
b. manu ˈmutiʔ			*!	
c. ˈmanu ˈmutiʔ	*!			
d. maˈnu mutiʔ		*!		

- Also like compounds, metathesis is blocked where it would lead to a *CCC cluster within a prosodic (φP) domain

- For instance, although we see metathesis with faut mutiʔ 'white stone', we cannot metathesize in fatu mnasiʔ 'old stone'

(32) a. [faut ˈmutiʔ]$_{φP}$ 'white stone'   [fatu ˈmnasiʔ]$_{φP}$ 'old stone'   *[faut ˈmnasiʔ]
　　　b. [bael ˈfeʔu]$_{φP}$ 'new place'   [bale ˈmnatuʔ]$_{φP}$ 'place of gold'   *[bael ˈmnatuʔ]

- So, we revise the *CCC constraint to militate against CCC sequences in any φP, not just those within words

(33)

/fatu mnasiʔ/	*CCC$_{φP}$	LAPSE-LEFT	DEP	LIN
☞ a. fatu ˈmnasiʔ		*		
b. fau͡t ˈmnasiʔ	*!			*
c. fau͡ta ˈmnasiʔ		*	*!	*

- As predicted, adjectives used predicatively (and thus in a separate φP) do not trigger metathesis on the noun

(34) [ˈma<u>nu</u>]$_{nP}$ [ˈmu<u>tiʔ</u>]$_{PredP}$
　　　chicken　　white

'The chicken is white.'

- Note this is not syntax: adjuncts can optionally trigger metathesis on verbs regardless of adjunct attachment height

5.3 Comparison with Rotuman

- The Uab Meto pattern superficially resembles the well-known case of **Rotuman** (McCarthy 2000, Besnier 1987, Takahashi 2018, Churchward 1940) where metathesis is primarily conditioned by syntactic context

- But Uab Meto is different from what's reported about Rotuman in the literature: CV͡VC stems are reported to receive stress in Rotuman, but they generally do not in Uab Meto

6 Alternatives

6.1 Rule-Based Approaches

- There are several rule-based approaches to Uab Meto metathesis (Steinhauer 1993, 1996; Edwards 2016, 2018) – most rely on direct interaction of syntax and phonology

- But, these approaches do not answer the question of why metathesis is the favored operation for both phonotactic repair and "syntactic" marking

　– This approach has a response: Uab Meto has rigid prosodic requirements, and so metathesis repairs these at the level of both word and phrase

8

6.2 Harmonic Serialism

- Uab Meto facts are broadly compatible with a Harmonic Serialism Analysis, but there some things that need to be worked out

- Uab Meto metathesis is often a **two-step process**: first, metathesis and second, vowel coalescence into a diphthong (e.g. manu → ma͡ʊn)

- Takahashi (2018) proposes that there is no metathesis in GEN, and metathesis is the combined result of i. copy-and-delete or ii. fuse-and-fission

- The copy-and-delete approach won't work out-of-the-box because the intermediate stages won't be more harmonic with respect to LAPSE-L/LAPSE-R

- But, Takahashi's fuse-and-fission approach to metathesis should work, and could help account for consonant insertion cases

- In particular, HS works well if you assume that deletion is a two-step process (McCarthy 2008), and metathesis is deletion of the mora followed by feature re-association

7 Conclusion

- Some languages prefer to repair prosodic phonotactics with metathesis, even if that means also creating diphthongs and syllable codas

- Uab Meto is such a language – metathesis is the preferred repair for optimizing a variety of segmental and prosodic phonotactics

- Due to stringent prosodic requirements in Uab Meto, we see this repair at prosodic levels of both word and phrase

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8 Stress

- When a word is in isolation, stress is assigned to the penultimate syllable of a root

- I follow Gordon (2002) in providing a non-foot-based account, but note that feet also work fine

(35) ONESTRESS$_{\varphi P}$: Assign one violation for each intonational phrase that does not have one and exactly one stress. (cf. CULMINATIVITY in Kager 1999)

(36) NONFIN$_\omega$: Stress does not fall on the final syllable of a phonological word. (A final syllable does not have a level 1 grid mark.) (Gordon 2002: 501)

(37) ALIGN(X$_1$,R)$_\omega$: Assign one violation for each stress that does not occur in the rightmost syllable of a phonological word. (Gordon 2002: 498)

- Take for instance the word kolo 'bird'

(38)

/kolo/	ONESTRESS	NONFIN	ALIGN(X$_1$,R)
a. kolo	*!		
☞ b. ˈkolo			*
c. koˈlo		*!	

- Words also prefer to have the stress align to the left edge if possible

- I model this with ALIGN(X$_1$,L)

(39) ALIGN(X$_1$,L): Assign one violation for each stress that does not occur in the leftmost syllable of a phonological word. (Gordon 2002:498)

- This rules out stress-shift candidates like koˈkes-e in favor of ˈko͡eks-e

$$(40)$$

/kokes-e/	ONESTRESS	NONFIN	ALIGN(X$_1$,R)	ALIGN(X$_1$,L)	LIN
a. kokes-e	*!				
b. 'kokes-e			**!		
c. ko'kes-e			*	*!	
☞ d. 'ko͡eks-e			*		*

- We also know that ALIGN(X$_1$,R) dominates ALIGN(X$_1$,L) because stress is on the penult in tri-syllabic (and greater) words (e.g. ba'kaseʔ 'horse')

- If there are multiple roots in a phrase, then stress is assigned to the penult of the rightmost root

(41) ALIGN(X$_1$,R)$_{ROOT}$: Assign one violation for each stress that does not occur in the rightmost root of a phonological phrase.

- For instance in the compound fa͡if-ʔanaʔ 'baby pig', stress is assigned to the rightmost root

$$(42)$$

/fafi-PanaP/	ALIGN(X$_1$,R)$_{ROOT}$	NONFIN	ALIGN(X$_1$,R)	ALIGN(X$_1$,L)	LIN
a. fafi-ʔa'naʔ		*!		**	
b. fafi-'ʔanaʔ			*!	**	
☞ c. fa͡if-'ʔanaʔ			*	*	*
d. fa'fi-ʔanaʔ	*!		*	*	

8.1 CVV Words and Vowel Coalescence

- Although there's generally a preference against un-diphthongized VV sequences, this can be violated in order to prevent a stress-final word

- For instance, /meo/ 'cat', is syllabified as me.o when in isolation[3]

$$(43)$$

/meo/	ONESTRESS	NONFIN	*VV	ALIGN(X$_1$,R)
a. meo	*!		*	
☞ b. 'me.o			*	*
c. 'me͡o		*!		

- When the VV sequence is not the final syllable, dipthongization resumes (e.g. meo-nu 'cats')

$$(44)$$

/meo-nu/	ONESTRESS	NONFIN	*VV	ALIGN(X$_1$,R)
a. meo-nu	*!		*	
b. 'me.o-nu			*!	**!
c. me.'o-nu			*!	*
☞ d. 'me͡o-nu				*

9 Consonant Insertion

- The northern dialects of Uab Meto (Miomafo, Amfo'an, and Mollo) show interesting consonant epenthesis pattern, where consonants inherit the features the adjacent/underlying vowel

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[3]Speakers with consonant insertion pattern pronounce this as [me.ob]

- Generally, these consonants serve to prevent vowel hiatus across morpheme boundaries, most commonly in ...CVV# words

(45) a. ʔau   'lime (p.m.)'   ʔaʊb-e   'the lime'
     b. meo   'cat (p.m.)'   meob-e   'the cat'
     c. ʔoe   'water (p.m.)'   ʔoel-e   'the water'
     d. ʔai   'fire (p.m.)'   ʔaɟ͡ɟ-e   'the fire'

- The same consonants appear in CVCV words that have a vowel-initial suffix

- But, these differ in that the underlying vowel is completely consumed – we don't see *[fa͡ʊtb-e] or *[fatub-e], instead we get [fatb-e]

(46) a. fatu   'stone'   fatb-e   'the stone'
     b. belo   'monkey'   belb-e   'the monkey'
     c. ʔanoʔe   'lontar palm'   ʔanoʔl-e   'the lontar palm'
     d. nafnafɛ   'spider'   nafnaf͡ɟ͡ɟ-e   'the spider'
     e. tasi   'sea'   tasɟ͡ɟ-e   'the sea'

- Culhane (2018) analyzes this consonant insertion in Amfo'an as spreading across a CV template

- I follow Culhane in treating this as spreading, but do not stipulate an underlying CV skeleton

- For instance, meoβ-e 'the cat' would be derived with *V-V and SPREAD-PLACE constraints

(47) *V-V: Assign one violation for vowel hiatus that crosses aa morpheme boundary

(48) SPREAD-PLACE: For epenthetic consonants, assign one violation for each consonant that does not inherit its place feature from the underlying immediately preceding segment (cf. NPA in Padgett 1995)

(49)

/meo-e/	LIN-NONFINAL	*V-V	SPREAD-PLACE	DEP	LIN
a. meo-e		*!			
b. eom-e	**!				**
c. meob-e				*	
d. meoʔ-e			*!	*	

- This consonant insertion also occurs when words are in isolation to prevent an ultra-light syllable

- For instance, /meo/ 'cat' does not diphthongize when it receives stress to satisfy NONFIN, and so we get me.o (See Section 8 on stress)

- But, Uab Meto doesn't permit V-only syllables (*SUPERLIGHT), and so it is forced to epenthesize to create me.ob

(50) *SUPERLIGHT: Assign one violation for a syllable that is an onsetless and codaless vowel.

(51) CONTIG-DEP: Assign one violation for epenthesis that does not occur adjacent to a morpheme boundary.

(52)

/meo/	*SUPERLIGHT	CONTIG-DEP	SPREAD-PLACE	DEP	LIN
a. meo	*!				
b. mebo		*!		*	
c. meob				*	
d. meoʔ			*!	*	

9.1 No spreading and metathesis

- Things are slightly different in CVCV words, like fatu 'stone' → fatb-e 'the stone'
- Candidates like 'fatub-e and fa'tub-e are ruled out by ALIGN(X₁,L) and LAPSE-RIGHT

(53)

/fatu-e/	*V-V	NONFIN	ALIGN(X₁,R)	ALIGN(X₁,L)	DEP	LIN
a. 'fa.tu-e	*!					
b. 'fa.tu.b-e			**!		*	
c. fa.'tu.b-e			*	*!	*	
d. 'fa͡ut.b-e			*		*	*
e. 'fat.b-e			*		*	

- Note that candidates like fa͡ut-e are ruled out by ALIGN(σ_H, MORPH)(Section 10)
- It then comes to candidates d. 'fa͡utb-e and e. 'fatb-e

(54)   CONTIG-SPREAD: 'No crossing of spreaded features'

(55)   IDENT-VC: 'Don't associate vowels with consonants'

(56)

fatu-e	CONTIG-SPREAD	IDENT-VC
a. 'fa͡utb-e	*!	
b. 'fatb-e		*

- This provides an interesting perspective on 'No Crossing' constraints in Autosegmental Phonology:
  - Metathesis is licit even though it involves crossing and coalescence
  - Spreading is illicit when it crosses another association line

10   Heavy syllables

- Uab Meto has a general preference for putting heavy (CVV) syllables at the right edges of morphemes
- I model this with a generalized alignment constraint, ALIGN(σ_H, MORPH)

(57)   ALIGN(σ_H, MORPH): Assign one violation for each heavy syllable CVV(C) whose right edge does not coincide with a morpheme boundary.

- Consider the form [tas͡ɟɟ-e] 'the sea' – consonant insertion/fortition is preferred over metathesis

(58)

/tasi-e/	*V-V	ALIGN(σ_H, MORPH)	DEP	LIN
a. ta.si-e	*!			
☞ b. tas.͡ɟɟ-e			*	
c. ta͡ɪ.s-e		*!		*

- In words with different morphological constituency, no consonant insertion occurs (e.g. ta͡ɪ-s-e 'the sarong')

(59)

/tai-s-e/	*INFIX	ALIGN(σ_H, MORPH)	DEP	LIN
☞ a. ta͡ɪ.-s-e		*!		*
b. tas.͡ɟɟ-e	*!		*	*
c. ta͡ɟɟ-.s-e			*!	

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