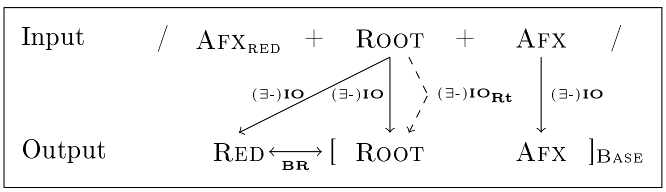
Class 5
Reduplication and Existential Faithfulness (Struijke 2002)

5/2/2023

1 Review

- **Last time:** When we assume that the reduplicant corresponds to the input via "broad IO correspondence" and that the root stands in a special correspondence relation with the input (Struijke 2002; cf. Beckman 1998), we can account for the same things as IR faithfulness without some of the bad predictions/stipulations.

(1) Base-Reduplicant Correspondence Theory: Struijke model



- This was an improvement over the Spaelti (1997) model, which lacked the special Root correspondence relation, because it allows us to continue to capture standard TETU effects.
  - Yoruba was one of the examples:

(2) Root faithfulness copy + reduce in Yoruba

/RED+jɛ/			IDENT-V-IO$_{\text{RT}}$	*¬[i]	IDENT-V-IO	IDENT-V-BR
a.	☞	ji-[jɛ]$_{\text{RT}}$		*	*	*
b.		jɛ-[jɛ]$_{\text{RT}}$		**!		
c.		ji-[ji]$_{\text{RT}}$	*!		**	

- If this were the full story, however, it would make an incorrect prediction about other affixes:
  - In a language which displays TETU effects in reduplication, *all affixes* should also be subject to those TETU effects.

(3) Hypothetical affix TETU in Yoruba

/RED+jɛ+to/			IDENT-V-IO$_{\text{RT}}$	*¬[i]	IDENT-V-IO	IDENT-V-BR
a.	☹	ji-[jɛ]$_{\text{RT}}$-to		**!	*	*
b.	💣	ji-[jɛ]$_{\text{RT}}$-ti		*	**	*
c.		jɛ-[jɛ]$_{\text{RT}}$-to		**!*		
d.		ji-[ji]$_{\text{RT}}$-to	*!	*	**	

- Struijke (2002) gets around this by altering (IO) Faithfulness constraints to be quantified *existentially* rather than universally.

2 Existential Faithfulness

2.1 Definition

- The idea behind existential faithfulness is that a property of the input must be **preserved** on *some* output correspondent, not necessarily that all output correspondents must be **identical** for that property.
  - In the case of a single output correspondent, preservation is equivalent to identity.

- IDENT constraints in this framework are defined as:

(4) **∃-IDENT[±F]-IO**: (Struijke 2002:20)
Let seg ∈ input be in the domain of $\Re$, and seg is [αF];
then there is some seg′ ∈ output,
such that seg$\Re$seg′ is [αF].

Some output segment corresponding to an input segment preserves the feature specification [αF] of that input segment.

- We can illustrate the differences between this definition and the traditional universally quantified definition with the following mappings:

(5) Assessing violations of ∃-IDENT[+voice]-IO (Struijke 2002:20–21)

	Satisfies		*Violates*
Input / Output	a. $g_{[+vc]}$ → $g_{[+vc]}$	b. $g_{[+vc]}$ / Ø	c. $g_{[+vc]}$ → $k_{[-vc]}$
Input / Output	d. $g_{[+vc]}$ → $g_{[+vc]}$ $g_{[+vc]}$	e. $g_{[+vc]}$ → $g_{[+vc]}$ $k_{[-vc]}$	f. $g_{[+vc]}$ → $k_{[-vc]}$ $k_{[-vc]}$

- (5a,d) would satisfy any definition of IDENT, since all output correspondents have the [+voice] feature.
- (5b) would satisfy any definition, as long as IDENT is vacuously satisfied when there is no segmental correspondence.
  - If we assume the reverse, it is violated equally under either type of quantification.
- (5c,f) would violate any definition of IDENT, since all output correspondents exclusively have [−voice], i.e. lack [+voice].

⋆ The crucial case is (5e).
  - It has one output correspondent that faithfully preserves the [+voice] feature, and one that doesn't.
  - Under universal quantification, this would incur a violation of IDENT for the correspondence between /g/↔[k].
  - However, under existential quantification, the fact that there is preservation of the [+voice] feature on some output correspondent, i.e. /g/↔[g], means that IDENT is satisfied.

2.2 Example

- An example of this comes from vowel reduction and reduplication in Lushootseed.

- In unreduplicated words, where underlying vowels have only one correspondent in the output, unstressed vowels do not reduce (or rather "optionally" reduce; Struijke 2002:21n.).
- But in reduplicated words, where one BR correspondent is stressed and the other isn't, the unstressed one reduces.
  → It can either the reduplicant vowel (6d) or the root vowel (6c), depending on where the stress phonotactics place the stress.

(6) Vowel reduction in Lushootseed (Struijke 2002:21; Urbanczyk 1996)

	INPUT	OUTPUT	GLOSS	
i.	Unreduplicated words → no vowel reduction (actually "optional" vowel reduction)			
a.	/ʔidigʷat/	[ʔídigʷàt]	'say something'	
b.	/ʔagʷal-əb/	[ʔágʷal-əb]	'yawn'	
ii.	Reduplicated words → vowel reduction in unstressed BR correspondent			
c.	/RED-ʔagʷal-əb/	[<u>ʔá</u>-ʔəgʷàl-əb]	'yawn' (dim.)	← *reduction in base*
d.	/RED-tadʑ-əd/	[<u>tə</u>-tádʑ-əd]	'little distance'	← *reduction in reduplicant*

- This can be understood through ∃-IDENT-V-IO:

  ○ In unreduplicated words, each input vowel has a single correspondent, so

(7) No reduction in unreduplicated words

/ʔa$_1$gʷa$_2$l-əb/	∃-IDENT-V-IO	*UNSTRESSEDFULLV
a. ☞ ʔá$_1$gʷa$_2$l-əb		*
b. ʔá$_1$gʷə$_2$l-əb	*!	

∗ Optionality could be achieved by having a variable ranking between the two constraints.

- Assuming that clash is banned and that schwas are unstressed, we have the following candidates:
  - ∗ The candidates in (8) are the full crossing of full and reduced vowels in each of the three positions.
  - ∗ Dark gray shaded cells indicate candidates ruled out by ∃-IDENT-V-IO violation w.r.t. V_2.

(8) Reduction in reduplicated words

/RED-ʔa$_1$gʷa$_2$l-əb/			∃-IDENT-V-IO		*UNSTRESSEDFULLV
a.		<u>ʔá$_1$</u>-ʔa$_1$gʷà$_2$l-əb	V_1: ✓	V_2: ✓	*!
b.		<u>ʔá$_1$</u>-ʔa$_1$gʷə$_2$l-əb	V_1: ✓	V_2: ✗!	*
c.	☞	<u>ʔá$_1$</u>-ʔə$_1$gʷà$_2$l-əb	V_1: ☑	V_2: ✓	
d.		<u>ʔá$_1$</u>-ʔə$_1$gʷə$_2$l-əb	V_1: ☑	V_2: ✗!	
e.		<u>ʔə$_1$</u>-ʔá$_1$gʷa$_2$l-əb	V_1: ☑	V_2: ✓	*!
f.		<u>ʔə$_1$</u>-ʔá$_1$gʷə$_2$l-əb	V_1: ☑	V_2: ✗!	
g.		<u>ʔə$_1$</u>-ʔə$_1$gʷá$_2$l-əb	V_1: ✗!	V_2: ✓	
h.		<u>ʔə$_1$</u>-ʔə$_1$gʷə$_2$l-ə́b	V_1: ✗!	V_2: ✗!	

- Reduction cannot apply to V_2:
  - ○ Since it has only one output correspondent, it has only one chance to realize its features in order to satisfy ∃-IDENT-V-IO. Therefore it must surface as [a].
  - ○ ∃-IDENT-V-IO thus rules out (b,d,f,h).

- On the other hand, reduction *can* now apply to *one of the output correspondents of* V_1:
  - ○ ∃-IDENT-V-IO is satisfied as long as one output correspondent preserves the features.
    - ▪ ☑ means satisfaction under existential quantification but violation under universal quantification; i.e. only one correspondent of V_1 is faithful.
  - ○ Since there are two output correspondents, the other is free to change its features without affecting ∃-IDENT-V-IO.
  - ○ This is the case for (c) and (e) [also (d) and (f), but they are ruled out for V_2].
    - ▪ (a) is fully faithful, so it will satisfy any definition of IDENT.
    - ▪ (g) reduces both correspondents of V_1, so it will violate any definition of IDENT, including the existential one.

- (a,c,e) are the candidates which faithfully realize V_2 and have at least one faithful correspondent of V_1.
  - ○ Among these, both (a) and (e) have an unstressed [a], and so lose out on the markedness constraint.
  - ○ By reducing the second correspondent of V_1, (c) has fixed the markedness problem while still being sufficiently faithful, so it is selected as the winner.

→ (*Assuming this is the correct characterization of the distributional facts:*) This result would not be derivable with universally quantified faithfulness constraints, because that would rule out all candidates except (a), which needs to lose to (c).
  - ○ Bringing in Root faithfulness would not solve this particular problem, because the unfaithful mapping is in the root.

⋆ Variable ranking actually does predict a single, categorical result in this case, because all candidates are harmonically bounded by the winner w.r.t. these two constraints.

3 TETU in Kwakwala

3.1 "Reduplicant TETU" (i.e. normal TETU)

- Obstruent codas are normally permitted in the language, but they are disallowed in reduplicants.

(9) Obstruents not allowed to surface in reduplicants (Struijke 2002:47)

Root	Reduplicated		Gloss
k'aːxʷ	k'aː-k'axʷ-m'uːt	*k'aːxʷ-k'axʷ-m'uːt	'shavings'
ts'aːs	ts'aː-ts'əs-m'uːt	*ts'aːs-ts'əs-m'uːt	'old eel-grass'
teːɬ	teː-taɬ-m'uːt	*teːɬ-taɬ-m'uːt	'remains of bait'

- The syllable types generally permissible in the language are in (10).
  - Struijke claims that medial CCC clusters are parsed as complex coda + simplex onset (CC.C)
  - Language permits word-final clusters but not word-initial clusters.

(10) Kwakwala syllable canon (O = obstruent, S = sonorant; Struijke 2002:48)

Type	Example	Gloss
CV	**bə**.xoːt	'torch'
CVV	**ʤeː**.daqʷ	'milky sea eggs'
CVO	**ɢas**.xaː	'to carry on fingers'
CVOO	haː.l'aː.**maxs**.taː	'to eat quickly'
CVVO	**yaːx**.k'aː	'to hop on one foot'
CVVOO	ts'ə.**daːxs**.tə.wə.lə.laː	'woman representative'
CVS	**dəl**.xaː	'damp'
CVSO	**t'əls**.taːs	'to eat crabapples'
*CVVS(X)	✗	
*CVSS(X)	✗	

- Absence of CVVS(X) and CVSS(X) is due to a ban on superheavy syllables.
  - Short vowels have 1μ, long vowels have 2μ.
  - If coda *sonorants* are moraic, VVS+ and VSS+ would have $\geq 3\mu$.
  - There absence can thus be attributed to a ban on 3+μ syllables.

- Additional evidence that sonorant codas are moraic comes from stress assignment.
  - Primary stress falls on the leftmost heavy syllable (11a,b,c).
  - CVS syllables can attract stress even if followed by CVV(O) syllables (11d).
    ↪ CVS is heavy.
  - CVO syllables don't attract stress away from CVS (11e).
    ↪ CVO is light.

(11) Main stress (Struijke 2002:48)

a.	háːʥaːpaːmaː		‘yarrow’
b.	xəsáːɬaː	(*xə́saːɬaː)	‘those who have disappeared’
c.	méːxts’aːs		‘dreamer’
d.	xʷə́lʥoːs		‘Hexagrammus superciliaris’
e.	pəχdə́m	(*pə́χdəm)	‘time’

- We can describe the distribution of consonant moraicity with the following constraints:

(12) **Weight-By-Position** (WxP):
Assign a violation * if a coda consonant is non-moraic.

(13) a. *μ/Obs: Assign a violation for each moraic obstruent.
b. *μ/Son: Assign a violation for each moraic sonorant consonant.
c. *μ/V: Assign a violation for each moraic vowel.
d. **Universal Ranking**: *μ/Obs ≫ *μ/Son ≫ *μ/V

- If WxP is ranked between *μ/Obs and *μ/Son, we get the right distribution.

(14) Coda sonorants are moraic

/CV$^\mu$S/	∃-Max-IO	WxP	*μ/Son
a. ☞ CV$^\mu$S$^\mu$			*
b. CV$^\mu$S		*!	
c. CV$^\mu$	*!		

(15) Coda obstruents are non-moraic

/CV$^\mu$O/	∃-Max-IO	*μ/Obs	WxP
a. CV$^\mu$O$^\mu$		*!	
b. ☞ CV$^\mu$O			*
c. CV$^\mu$	*!		

- The absence of obstruent codas in reduplicants can be attributed to the interaction between (∃-)Max-IO and WxP. (Existential quantification isn't really crucial here.)
  - ∃-Max-IO$_{RT}$ (ranked anywhere) picks between deletion sites, in favor of deletion in the reduplicant.
  - *μ/Obs rules out parsing obstruent codas as moraic to satisfy WxP (candidates omitted).

(16) Coda obstruents not copied into reduplicant

/red+ts’aːs+m’uːt/	∃-Max-IO	*μ/Obs	WxP	∃-Max-IO$_{RT}$
a. <u>ts’aːs</u>-ts’əs-m’uːt			***!	
b. ☞ <u>ts’aː</u>-ts’əs-m’uːt			**	
c. <u>ts’aːs</u>-ts’ə-m’uːt			**	*!
d. <u>ts’aː</u>-ts’ə-m’uːt	*!		*	*!
e. <u>ts’aː</u>-ts’ə-m’uː	*!*			*!

- This is standard TETU, and could easily be derived in any of the other frameworks we've looked at previously.

3.2 "Output TETU"

- The more interesting aspect of Kwakwala TETU is the behavior of vowel length & coda sonorants in reduplication:
  → They will show up in either the base or the reduplicant, but not both.
  - The distribution is based on the desire to avoid clashes.

3.2.1 Clash tolerance outside of reduplication

- Struijke claims that there are clashes between adjacent heavy syllables, which aren't avoided through reduction.
  - Saba Kirchner (2010) seems to assume that there aren't clashes.

(17) Clashes(?) in non-reduplicative words (Struijke 2002:57)

Real form	Reduction not observed	Gloss
gə́ltk'òːdìːɬ	*gə́ltk'ə̀dìːɬ	'longer one side'
ts'óːl'əmy'àː	*ts'əl'ə́my'ə	'black cheek'
héːɬòːm'àːlàː	*héːɬəm'àːlə, *həɬóːm'əlàː	'to be in time'
téːnòːstàːlàː	*etc.*	'to pole up river'

- The relevant point is that there are normally adjacent heavy syllables, and heavy syllables normally attract stress.
  - If there are clashes: WSP ≫ *CLASH
  - If there aren't: *CLASH ≫ WSP
  - If there are actually no secondary stresses at all: CULMINATIVITY(MAX) ≫ WSP

∗ Any of these are consistent with the analysis (though the last one may be a little trickier), because WSP violations can still be minimized.
  - I'll follow Struijke in assuming clashes, so WSP ≫ *CLASH.

→ Since there's no reduction in the general case, ∃-MAX-IO and ∃-IDENT[weight]-IO must dominate *CLASH (Struijke 2002:58–59).

(18) No reduction and no deletion of coda sonorants to avoid clash

/ts'oːl'əmy'aː/	∃-MAX-IO	∃-IDENT[weight]-IO	WSP	*CLASH
a. ☞ ts'óːl'ə̀m$_\mu$y'àː				**
b. ts'óːl'əm$_\mu$y'àː			*!	
c. ts'əl'ə́m$_\mu$y'ə		*!*		
d. ts'óːl'əy'àː	*!			

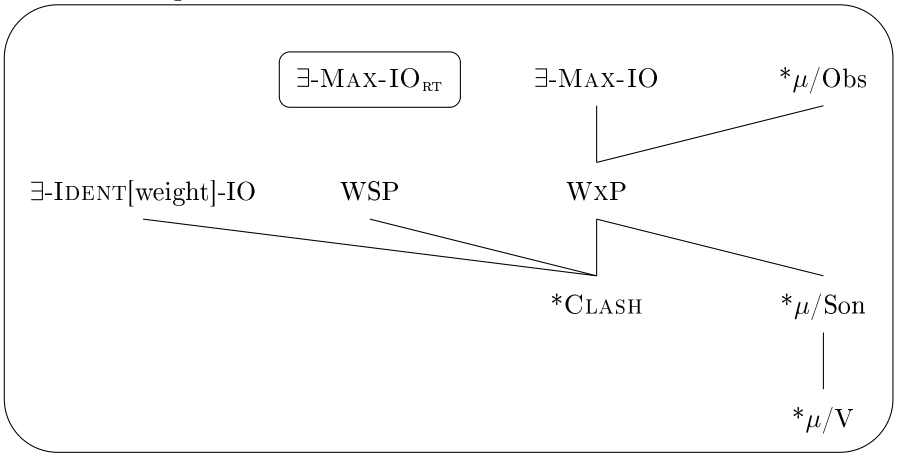
- Also, WXP must dominate *CLASH to avoid non-moraic sonorant codas as a way out of clashes while still respecting WSP.

(19) No non-moraic sonorant codas to avoid clash

/ts'oːl'əmy'aː/	WSP	WXP	*μ/Son	*CLASH
a. ☞ ts'óːl'ə̀m$_\mu$y'àː			*	**
b. ts'óːl'əmy'àː		*!		

- Here's a Hasse diagram of what we've found so far:

(20) Crucial rankings



3.2.2 Emergent clash avoidance in reduplication → heavy reduplicant

- Now let's look at the distribution of codas and vowel length in reduplicated forms.

  ∗ Struijke lists this as [k'áː-k'axʷ-m'uːt] with [a] in second syllable. Saba Kirchner (2010:43) gives it with [ə]. [ə] makes much more sense, so I'm assuming that. Same for *qaːs*.

  ∗ Saba Kirchner gives the type d. forms with [iː] and [uː] respectively; this makes no difference, all we care about is length.

(21) Reduplication with bimoraic roots ending in a laryngeally unmarked segment (Struijke 2002:60)

Type	Root	Reduplicated	Gloss
a. /CVS/ → [CV́S-CV-]	wən	wə́n-wə-mùːt	'refuse of drilling'
	kən	kə́n-kə-mùːt	'what is left after scooping up'
b. /CVSO/ → [CV́S-CVO-]	yənt	yə́n-yət-m'ùːt	'gnawings of a large animal'
	qəns	qə́n-qəs-m'ùːt	'chips'
c. /CVVO/ → [CV́V-CVO-]	k'aːxʷ	k'áː-k'əxʷ-m'ùːt	'shavings'
	qaːs	qáː-qəs-m'ùːt	'tracks'
d. /CVG/ → [CV́G-CV-]	dəy	déː-də-mùːt	'refuse of wiping'
	xəw	xóː-xə-mùːt	'refuse of splitting wood'
	▷ /əy,əw/ → [eː,oː] / _]$_\sigma$		

Generalizations:

1. Post-nuclear consonants never appear twice (always appear exactly once)
2. The reduplicant is always heavy (bimoraic) and the base is always light
   ⇒ Word is always H́LH̀

- Generalization 1 straightforwardly follows from the existential definition of MAX.
  - A coda consonant will always be marked, so don't have it surface more times than necessary.
  - It has to surface at least once, therefore only once.

- Generalization 2 is an emergent effect of clash avoidance.
  - By placing the moraic coda consonant or long vowel in the reduplicant rather than the base, clash is avoided, because stress is therefore drawn to σ_1 and not to σ_2 via WSP.

- Both of these follow from the ranking that explains the lack of deletion/reduction in non-reduplicated words, as long as we use existentially quantified faithfulness constraints.
  - ∗ In all candidates, coda sonorants are moraic.

(22) Coda sonorants in the reduplicant not the base

/RED-wən-m'uːt/	∃-MAX-IO	WSP	*CLASH	∃-MAX-IO$_{RT}$
a. wə́n-wə̀n-m'ùːt			*!*	
b. wə́n-wən-m'ùːt		*!		
c. ☞ wə́n-wə-m'ùːt				*
d. wə-wə́n-m'ùːt			*!	
e. wə-wə-m'úːt	*!			*

- ∃-MAX-IO$_{RT}$ must rank below *CLASH, or else the sonorant would be forced to appear in the root. This would predict (d). Same with ∃-IDENT[weight]-IO$_{RT}$ for vowel length below.

(23) Long vowels in the reduplicant not the base

/RED-qaːs-m'uːt/	∃-IDENT[weight]-IO	WSP	*CLASH	∃-IDENT[weight]-IO$_{RT}$
a. qáː-qàːs-m'ùːt			*!*	
b. qáː-qaːs-m'ùːt		*!		
c. ☞ qáː-qəs-m'ùːt				*
d. qə-qáːs-m'ùːt			*!	
e. qə-qəs-m'úːt	*!			*

- We know from (16) that the obstruent will appear only in the base.
- The difference between obstruents and sonorants is that obstruents can't contribute weight, and thus putting them in the reduplicant isn't going to help solve the Clash/WSP problems.

- The interaction between the effects in (22) [sonorant codas must appear in the reduplicant] and (16) [obstruent codas must appear in the base] naturally extends to type b. roots /CəSO/:
  - √*yənt* → [yə́n-yət-m'ùːt]
  - √*qəns* → [qə́n-qəs-m'ùːt]

3.2.3 Emergent clash avoidance in reduplication → heavy base

- We might think we could derive this without existential faithfulness...until we see the forms with laryngeally-marked final C's.
  - Laryngeally marked C's (ejectives, voiced obstruents, glottalized sonorants) are not permitted before a consonant.
    - Glottalized sonorants are probably not moraic.
  - They are repaired by epenthesizing a [ə] after the C.
  - When such roots are reduplicated, the heavy syllable is the base, not the reduplicant:

(24) Forms with bimoraic roots ending in laryngeally marked consonants (Struijke 2002:63)

Root	Reduplicated	Gloss
mənʤ	mə-mə́nʤə-mùːt	'leavings after cutting kindling wood'
qʷ'aːl'	qʷ'ə-qʷ'áːl'ə-mùːt	'embers'
saːqʷ'	sə-sáːqʷ'ə-mùːt	'peelings'

- The forced presence of the epenthetic vowel provides a buffer between the base syllable and the suffix syllable, such that stressing both will not create a clash.
  - This allows for Root faithfulness to emerge and select the base as the position for the heavy syllable.
  - Alternatively, we could see this as an emergent *LAPSE constraint.

- All candidates below obey the phonotactic via epenthesis
  - ≈ *LAR$]_\sigma$ ≫ DEP-IO forces epenthesis following laryngeal C.
    - Also ∃-MAX-IO ≫ DEP-IO because epenthesis is preferred to deletion.
  - ∗ Struijke (2002) can't use standard DEP because of the way she's re-defining faithfulness. So replace DEP with whatever you think penalizes epenthesis.

- Only considering candidates that satisfy WSP. Withholding total reduplication candidate for now.

(25) Coda consonants in the base with final laryngeal C

/RED-mənʤ-muːt/			∃-MAX-IO	*CLASH	∃-MAX-IO$_{RT}$
a.		m̲ə̲́n̲-mə̀nʤə-mùːt		*!	
b.	☞	m̲ə̲-mə́nʤə-mùːt			
c.		m̲ə̲́n̲ʤ̲ə̲-mə̀n-mùːt		*!	*
d.		m̲ə̲́n̲ʤ̲ə̲-mə-mùːt			*!*
e.		m̲ə̲́n̲-məʤə-mùːt			*!
f.		m̲ə̲́n̲-mə-mùːt	*!		**

- The candidates ruled out by ∃-MAX-IO$_{RT}$ have a lapse where the winning candidate does not, so *LAPSE could alternatively explain this pattern.

- Now consider the winning candidate vs. one that reduplicates the whole root with epenthesis twice:

  - We could use a size restrictor, ranked below ∃-MAX-IO$_{RT}$ but above (∃-)MAX-BR, to derive the minimal size. This wouldn't have any impact on the earlier derivations, because the size restrictors are ranked so low (below ∃-MAX-IO$_{RT}$).

(26) Coda consonants in the base with final laryngeal C

/RED-mənʤ-muːt/			∃-MAX-IO$_{RT}$	ALIGN-ROOT-L	∃-INTEG-IO	MAX-BR
a.		m̲ə̲́n̲ʤ̲ə̲-mə̀nʤə-mùːt		5!	4!	0+3
b.	☞	m̲ə̲-mə́nʤə-mùːt		2	2	3+3

- The constraint against epenthesis would also do the job. Once we move away from M&P's basic model, it becomes pretty clear that epenthesis into the reduplicant counts as normal epenthesis.

(27) Coda consonants in the base with final laryngeal C

/RED-mənʤ-muːt/			∃-MAX-IO$_{RT}$	"DEP"	MAX-BR
a.		m̲ə̲́n̲ʤ̲ə̲-mə̀nʤə-mùːt		**!	0+3
b.	☞	m̲ə̲-mə́nʤə-mùːt		*	3+3

3.3 Other cases

3.3.1 CəC’ roots

- Roots with short vowels and a final laryngeal C (CəC’) reduplicate with Cə- + epenthesis after the root-final C, ending up with no heavy syllables:
  - √*ts’əm’* → [ts’ə-ts’əm’ə-mú:t] ‘left after melting’
  - It’s unclear whether there’s a secondary stress on σ_2; it may be the case that lapses are tolerated before the main stress.

- This follows from the already established rankings:

(28) CəC’ roots

/RED-ts’əm’-mu:t/	∃-MAX-IO$_{RT}$	“DEP”	MAX-BR
a. ☞ ts’ə-ts’əm’ə-mú:t		*	2+3
b. ts’əm’ə-ts’ə-mú:t	*!	*	0+3
c. ts’əm’ə-ts’əm’ə-mú:t		**!	0+3

3.3.2 CV̆O roots

- There’s an inconsistency between Struijke (2002:65) and Saba Kirchner (2010:esp. 174) in the interpretation/transcription/analysis of CV̆O roots.
  - Both agree that these roots don’t show overt copying.
  - They disagree about the underlying form of (some of) the roots, and, more importantly, the length of the output vowel.

(29) Behavior of CV̆O

	Struijke (2002:65)		Saba Kirchner (2010)		
	Root	*mut* form	Root	*mut* form	Gloss
a.	ʔax	ʔax-m’ú:t	ʔəx	ʔa:x-m’ú:t	‘waste left after some work’
b.	ʔaχʷ	ʔaχʷ-m’ú:t	ʔəχʷ	ʔa:χʷ-m’ú:t	‘waste scum’
c.	q’əx	q’ax-m’ú:t	q’əx	q’a:x-m’ú:t	‘piece bitten out’
d.	ts’əx	ts’ax-m’ú:t	ts’əx	ts’a:x-m’ú:t	‘hair singed off’
e.	y’əxʷ	y’axʷ-m’ú:t	y’əxʷ	y’a:xʷ-m’ú:t	‘high water mark’

- Saba Kirchner’s approach provides a much simpler and more consistent analysis:
  - These forms are just lengthening of underlying /ə/ to [a:]
  - ⇒ This lays the groundwork for Saba Kirchner’s analysis of the system as mora affixation rather than morphological reduplication per se.

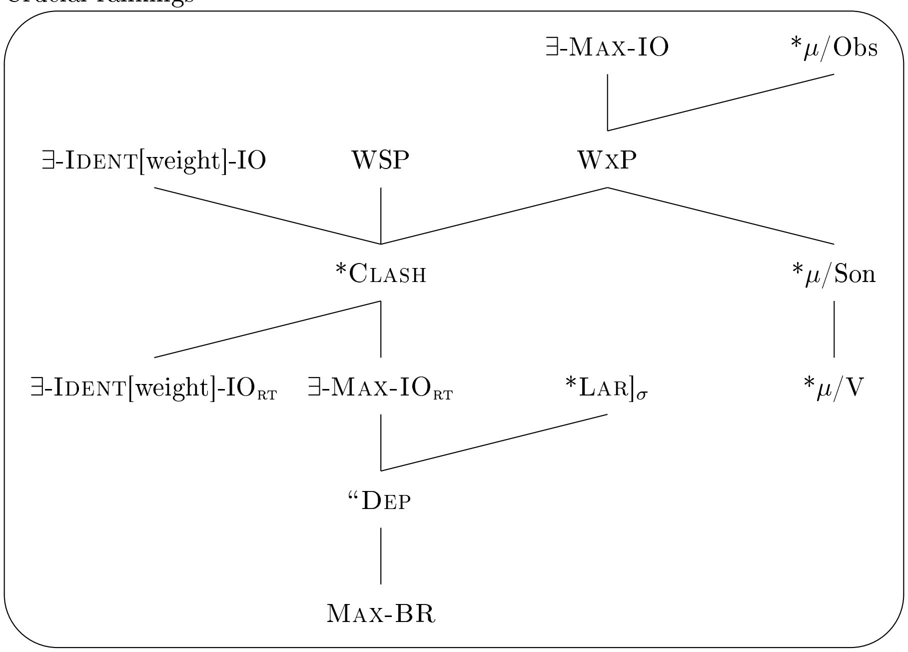
- Struijke’s analysis is problematic for several reasons:
  1. It leaves unexplained the difference between supposed /a/ roots and /ə/ roots, which would both come out as [a] in the *mut* form.
     - I don’t know on what basis she’s making the decisions about underlying forms.
     - From this small set of examples, maybe it’s about the ʔ (which may not be underlying).

2. Her analysis of these forms is non-realization of RED driven by *CLASH and ∃-IDENT[weight]-IO.
   - However, this requires that a candidate form like //ʔa-ʔax-m'uːt// be stressed as *[ʔa-ʔàx-m'úːt], with secondary stress on the base, due to the requirement for iambic footing.
   - In the foot-free stress approach, this would either have no stress on the first two syllables, or secondary stress on the initial syllable (not the second).
   - Therefore, I couldn't derive non-realization by *CLASH.

- But there's all sorts of mysterious stuff about the vowel system, and it seems like there's serious problems with transcription in the main sources, so this is hard to adjudicate.

3.4 Analysis summary

(30) Crucial rankings



4 A (bad?) prediction of Existential Faithfulness

- Riggle (2006) engages with Existential Faithfulness, but argues against it.
  → He argues for an a-templatic minimal reduplication approach to Pima, which I like and agree with.
  - But he also discusses a prediction of Existential Faithfulness that looks weird, which he calls "Red-Shift" (Riggle 2006:886), which is somewhat reminiscent of the KHP.

- If you combine Existential Faithfulness with a size restrictor constraint like *STRUC-σ, you can derive an output where more of the root is parsed into the reduplicant than into the root:

(31) Deriving Red-Shift

/RED-badupi/	ANCHOR-L-BR	∃-MAX-IO	*STRUC-σ	MAX-BR	∃-MAX-IO$_{RT}$	DEP-BR
a. badupi-badupi			6!	0	0	0
b. ba-badupi			4	4!	0	0
c. 💣? badupi-ba			4	0	4	4
d. badupi-pi	*!		4	0	4	4
e. ba-ba		4!	2	0	4	0

- First off, I don't know if this is a bad prediction.
  - This looks like wrong-side reduplication, which is (arguably) attested, e.g. in Koasati (Hauser & Kusmer 2017).
  - Riggle actually uses candidate (31d) as his winner. This could be derived with ANCHOR-R-BR (though he doesn't show that). This just looks like minimal suffixing reduplication.

- Second, this seems to really only be a property of *STRUC(-σ). You can't derive it with ALIGN-ROOT-L:

(32) Can't derive Red-Shift with certain other size restrictors

/RED-badupi/	ANCHOR-L-BR	∃-MAX-IO	ALIGN-RT-L	MAX-BR	∃-MAX-IO$_{RT}$	DEP-BR
a. ☞ badupi-badupi			6	0	0	0
b. ba-badupi			2	4	0	0
c. badupi-ba			6	0	4	4
d. badupi-pi	*!		6	0	4	4
e. ba-ba		4!	2	0	4	0

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