Class 7
The Reduplicant and the Input

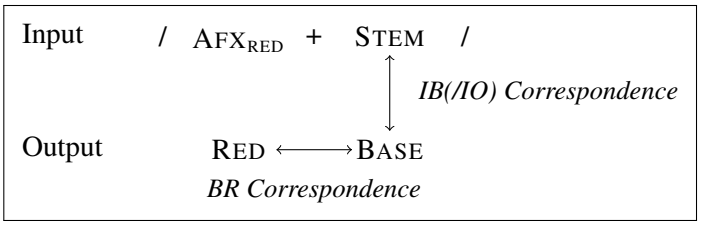
11/2/17

1 BRCT

1.1 The Basic Model

- Most reduplication-phonology interactions discussed in McCarthy & Prince (1995, 1999) can be analyzed using just the "Basic Model" of Base-Reduplicant Correspondence Theory, which posits just two correspondence relations:
  1. Input-Output correspondence, between the input and the "base", i.e. all(?) of the output which is not part of the reduplicant
  2. Base-Reduplicant correspondence, between the base and the reduplicant

(1) Base-Reduplicant Correspondence Theory: Basic Model



- The typology of these constraint types + markedness (correctly) predicts essentially three types of interactions:
  1. Normal application: distributions hold / processes apply the same in reduplicated words as in non-reduplicated words
     - *Normal application*: MARKEDNESS ≫ IO-FAITHFULNESS ≫ BR-FAITHFULNESS
  2. Overapplication and underapplication: in a reduplicated word, a process applies in a context where it normally does not apply (overapplication), or a process does not apply in a context where it normally does apply (underapplication), in order to maintain identity between base and reduplicant
     - *Overapplication*: BR-FAITHFULNESS, MARKEDNESS ≫ IO-FAITHFULNESS
     - *Underapplication*: BR-FAITHFULNESS + BLOCKER ≫ MARKEDNESS ≫ IO-FAITHFULNESS
  3. Emergence of the unmarked: a marked structure is allowed in the base but not in the reduplicant (≈ a process applies only in the reduplicant)
     - *Emergence of the unmarked*: IO-FAITHFULNESS ≫ MARKEDNESS ≫ BR-FAITHFULNESS

1.2 Evidence for more correspondence

- But there is some additional evidence that we need the reduplicant to stand in correspondence with the input as well.
- In some systems, the reduplicant more faithfully exhibits certain properties of the input than does the base.
  - A clear example comes from Klamath (Barker 1964).
  - Spaelti (1997:4) also says that Javanese is an example, but this isn't quite as clear.
  - Struijke (2002) talks about Kwakwala, which can also fit this bill, but is even more interesting.

- Klamath marks the distributive with partial reduplication: prefixal C(C)V
- Klamath has a vowel reduction/deletion rule:
  - Under certain morphophonological conditions, the second vowel of a word is targeted for reduction.
    - ≈ short vowels, when the vowel in σ_1 is separated from it by a morpheme boundary
    - Reduplication sets up this environment
  - If that vowel would be in an open syllable (i.e. followed by one C), delete the vowel
  - If that vowel would be in a closed syllable (i.e. followed by two C's), reduce the vowel to [ə] (transcribed by Barker as <*a*>)
- Regardless of whether this deletion/reduction applies and what the result is, the vowel of the reduplicant is always identical to the full vowel of the root (which appears in other output forms where it is in the first syllable)

(2) Reduplication + Reduction/Syncope in Klamath
(McCarthy & Prince 1995:111, citing Clements & Keyser 1983:140f.)

a.	Syncope in base		
	/RED$_{\text{DIST}}$+mbody'+dk/	mbo-mpØditk	'wrinkled up (dist.)'
	/RED$_{\text{DIST}}$+sm'oq'y+dk/	sm'o-smØq'itk	'having a mouthful (dist.)'
	/RED$_{\text{DIST}}$+pniw+abc'+a/	pni-pnoːpc'a	'blow out (dist.)'
	/RED$_{\text{DIST}}$+njoy+el'g+a/	njo-njiːlga	'are numb (dist.)'
	/RED$_{\text{DIST}}$+poliː+k'a/	po-pØliːk'a	'little policemen (dist.)'
b.	Reduction in base		
	/RED$_{\text{DIST}}$+dmesga/	de-dməsga	'seize (dist.)'
	/RED$_{\text{DIST}}$+sipc+a/	si-səpca	'put out a fire (dist.)'
	/RED$_{\text{DIST}}$+ɢatdk'+a/	ɢa-ɢəttk'a	'are cold (dist.)'
	/RED$_{\text{DIST}}$+pikca+'aːk'/	pi-pəkcaʔaːk	'little pictures (dist.)'
	/RED$_{\text{DIST}}$+sa+la+ak'w+ebli/	sa-səlk'obli	'puts round black object across oneself (dist.)'

- Evidently, the reduplicant reflects information about the root not present in the base — namely the vowel.
  - M&P also claim that in forms like mbo-mpØditk, the reduplicant more faithfully reflects the laryngeal features of the root.
  - I don't think this is correct; it's based on an incorrect reading of Barker's notation (cf. Blevins 1993).

- If the reduplicant can only obtain its properties from the base, there would be no way to reliably get the vowel of the root in the reduplicant.
  - In the deletion cases, it should either get the vowel from elsewhere in the base or select a default vowel
  - In the reduction cases, it should copy the [ə], or, if [ə]'s are not allowed in that position (though I think they are), then have a default vowel

⇒ The reduplicant thus has to somehow "know" what the vowel of the root is.

- The most straightforward way to do this is to have the reduplicant stand in correspondence directly with the root.
  - Another way could be to have the reduplicant be in correspondence with an output morphological base.
  - I don't think anyone's explored this possibility.

2 What's the right correspondence relation?

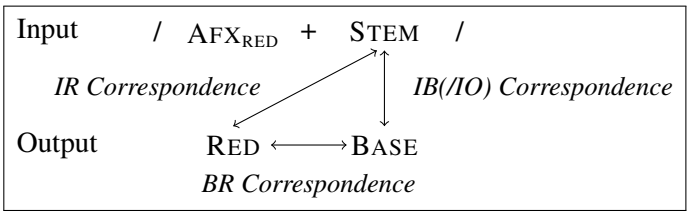
- Assuming that the reduplicant must be in correspondence with the input root, there are basically two ways we could structure the correspondence relations:
  1. Separate IR and IB correspondence relations (McCarthy & Prince 1995)
  2. A single IO correspondence relation (Spaelti 1997, Struijke 2002, *a.o.*)

- The IR approach makes bad predictions if left unchecked, and otherwise requires a stipulative fix.
- The other approach requires thinking more carefully about the definition of the faithfulness constraints (and tweaking them from what we're used to), but makes some interesting (and seemingly positive) predictions.

2.1 Input-Reduplicant Faithfulness

- To account for the existence of cases like Klamath, McCarthy & Prince (1995) posit Input-Reduplicant correspondence as part of their "Full Model".
  - IR correspondence is a correspondence relation holding directly between the input and the reduplicant.
  - This is fully independent of IO(/IB) correspondence, which applies to everything but the reduplicant.

(3) Base-Reduplicant Correspondence Theory: Full Model



- While there are potential confounds, Klamath seems to show that IR-faithfulness is decisive for determining the quality of the reduplicative vowel.
  - "MARKEDNESS" is intended to penalize candidates which show a non-default vowel. I represent that as [ə], though this might not actually be right for this context.

- When the root-initial vowel deletes and a glide consequently vocalizes, the reduplicant matches the input vowel not the surface vowel resulting from vocalization, even though that is immediately following the correspondent of the reduplicative consonant.

(4) The reduplicative vowel in Klamath: deletion → vocalization in base

/RED$_{DIST}$+pniw+abc'+a/	IDENT-IR	IDENT-BR	MARKEDNESS
a. ☞ pni-pno:pc'a		*	*
b. pno-pno:pc'a	*!		*
c. pnə-pno:pc'a	*!	*	

- The same holds when deletion occurs without vocalization; we don't see copying of the first vowel of the base.

(5) The reduplicative vowel in Klamath: deletion in base

/RED$_{DIST}$+mbody'+dk/	IDENT-IR	IDENT-BR	MARKEDNESS
a. ☞ mbo-mpditk		*	*
b. mbi-mpditk	*!	?	*
c. mbə-mpditk	*!	*	

- In reduction, there is actually a correspondent in the base for the reduplicative vowel, i.e. [ə]. The reduced quality is not transferred to the reduplicant; however, I'm not certain that [ə]'s are allowed in word-initial (open) syllables.

(6) The reduplicative vowel in Klamath: reduction in base

/RED$_{DIST}$+dmesga/	IDENT-IR	IDENT-BR	MARKEDNESS
a. ☞ de-dməsga		*	*
b. də-dməsga	*!		

2.2 Troubling predictions of IR faithfulness

- IR correspondence makes bad predictions if you allow it to be freely ranked w.r.t. faithfulness constraints along the other correspondence dimensions, specifically IO.

- Since IO (/IB) faithfulness and IR faithfulness are non-overlapping, the reduplicant and the base can act as entirely separate domains for faithfulness (cf. Inkelas & Zoll 2005 "Morphological Doubling Theory")
- If IR-FAITH can outrank IO-FAITH, we predict weird patterns where reduplicants, and reduplicated words, are allowed to have marked structures that are not tolerated anywhere else — "the emergence of the marked".
- M&P rein in these bad predictions by imposing a meta-ranking of IO-FAITH ≫ IR-FAITH, but this is a stipulation.

2.2.1 IR-faithfulness–induced underapplication

- We already know that when a BR faithfulness constraint and a markedness both outrank IO faithfulness, we derive overapplication.

(7) Overapplication ranking: BR-FAITH ≫ MARKEDNESS ≫ IO-FAITH

  - MARKEDNESS ≫ IO-FAITH demands that the process apply in its regular context
  - undominated BR-FAITH demands that the result of the process surfaces in the other context as well

- If we introduce high ranking IR faithfulness to this ranking, we get a super weird kind of underapplication
  - The IR constraint is essentially taking on the "BLOCKER" role in typical underapplication

(8) Overapplication ranking: IR-FAITH, BR-FAITH ≫ MARKEDNESS ≫ IO-FAITH

- McCarthy & Prince (1995:115) give the following hypothetical (pathological) example:
  - A language normally palatalizes /t/ → [č] / i_
  - This fails to occur — in both base and reduplicant — in reduplicated words, even when both meet the context for the palatalization rule.

(9) Palatalization generally

/i+taki/	IDENT-IR	IDENT-BR	*[it]	IDENT-IO
a. i-taki			*!	
b. ☞ i-čaki				*

(10) "Underapplication" (in both base and reduplicant) due to IR-faithfulness

/i+taki+RED/	IDENT-IR	IDENT-BR	*[it]	IDENT-IO
a. ☞ i-taki-<u>taki</u>			**	
b. i-čaki-<u>čaki</u>	*!			*
c. i-čaki-<u>taki</u>		*!	*	*
d. i-taki-<u>čaki</u>	*!	*!	*	

- This happens because:
  1. {IDENT-IR ≫ *[it]} means that it is more important for an underlying root /t/ to surface as [t] in the reduplicant than to avoid an [it] sequence.
  2. {IDENT-BR ≫ *[it]} means that, if there is a [t] in the reduplicant, it is more important to have a corresponding [t] in the base than to avoid an [it] sequence.

2.2.2 The Emergence of the Marked

- Even if BR-faithfulness is not involved, high ranking IR faith can allow the emergence of *marked* structures in the reduplicant that are completely absent elsewhere in the language.

(11) "Emergence of the Marked" ranking: IR-FAITH ≫ MARKEDNESS ≫ IO-FAITH, BR-FAITH

- For example, a language that has no voiced obstruents could all the sudden get one in reduplication.
  - Underlying /ka/ and /ga/ both map to [ka], because *VCDOBS ≫ IDENT[voi]-IO
  - But underlying /RED+ga/ maps to [ga-ka], because IDENT[voi]-IR ≫ *VCDOBS
    - Underlying /RED+ka/ still maps to [ka-ka]

(12) Devoicing generally

/ga/	IDENT[voi]-IR	*VCDOBS	IDENT[voi]-IO	IDENT[voi]-BR
a. ga		*!		
b. ☞ ka			*	

(13) Emergence of the marked in the reduplicant

/RED+ga/	IDENT[voi]-IR	*VCDOBS	IDENT[voi]-IO	IDENT[voi]-BR
a. ga-ga		**!		
b. ☞ ga-ka		*	*	*
c. ka-ga	*!	*		
d. ka-ka	*!		*	

- And if BR-faithfulness actually was high, we get emergence of the marked in the reduplicant + back-copying into the base:
  - This is exactly the same as the underapplication example above.

(14) Emergence of the marked + back-copying

/RED+ga/	IDENT[voi]-IR	IDENT[voi]-BR	*VCDOBS	IDENT[voi]-IO
a. ☞ ga-ga			**	
b. ga-ka		*!	*	*
c. ka-ga	*!		*	
d. ka-ka	*!			*

2.2.3 Summary

- The ranking {FAITH-IR ≫ FAITH-IO} means that reduplicants are across-the-board more faithful to the input than are bases and non-reduplicated forms.
  - This allows contrasts to emerge in reduplication that are not permitted anywhere else in the language.
  - This can happen even in the absence of BR-identity, so this is a distinct question from otherwise unlicensed sequences emerging in typical over-/under-application.

- If we are to adopt IR-faithfulness as part of our theory, we then need to disallow this ranking possibility.
- For this reason, M&P posit a universal meta-ranking:

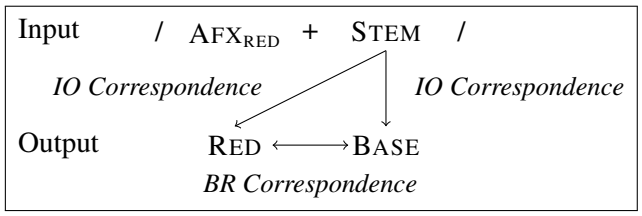
(15) Meta-ranking: FAITH-IO ≫ FAITH-IR

- It is not clear to me whether this is meant to / can / must apply to different faithfulness constraints
  - i.e., must it be the case that, e.g., IDENT[voice]-IO has to dominate IDENT[nasal]-IR, or could a language exhibit the reverse ranking?
- or does this only apply to equivalent constraints
  - i.e., IDENT[voice]-IO necessarily dominates IDENT[voice]-IR

2.3 Broad IO Faithfulness

- The other main way to get the reduplicant to be faithful to the input is to simply assume that segments of the reduplicant stand in normal IO correspondence with the input in the same way that base segments do.

(16) Base-Reduplicant Correspondence Theory: Spaelti model



- This immediately negates the problematic predictions of IR faithfulness, because there is now *not* a separate relation referring only to the reduplicant.
  - ⇒ Reduplicants can only be *as faithful* as other inputs, never more faithful *a priori*, **modulo the demands of higher-ranked markedness constraints**.

- Klamath is a case where the reduplicant appears to be more faithful than the base (at least in one respect).
- But this is not because of faithfulness itself, but because markedness triggers an unfaithful mapping in the base but not the reduplicant.

(17) The reduplicative vowel in Klamath: reduction in base

/RED$_{DIST}$+dme$_i$sga/	REDUCE!	IDENT-IO	IDENT-BR
a. ☞ de$_i$-dmə$_i$sga		*	*
b. də$_i$-dmə$_i$sga		**!	
b. de$_i$-dme$_i$sga	*!		

2.4 A shortcoming of simple Broad IO faithfulness

- Without additional tweaking, this move makes certain emergence of the unmarked phenomena difficult (perhaps impossible) to capture.
  - This is because the reduplicant is now expected to be as faithful as the base, which is frequently not the case.
  - This is more evident with featural alternations than with presence/absence alternations, which might be why Spaelti (1997) seems not to notice.

- Consider Yoruba (Alderete et al. 1999:11):

(18) Yoruba phonological fixed segment reduplication (tones omitted)

	Root/Base	Reduplicated	
a.	gbona	gbi-gbona	'be warm, hot'/'warmth, heat'
b.	jɛ	ji-jɛ	'eat'/'act of eating'
c.	ri	ri-ri	'see'/act of seeing'

- No matter what the base vowel is, the reduplicant vowel is [i].
- One way to generate this in classic BRCT is with the copy + reduce approach to TETU/phonological fixed segmentism:

(19) Copy + reduce schema: IDENT-IO ≫ MARKEDNESS ≫ IDENT-BR

  - Alderete et al. (1999) actually focus on an epenthetic analysis of such cases.
  - For fixed segmentism cases, the two approaches are usually equivalent.
  - However, there are frequently featural reductions that are limited in their scope (e.g. deaspiration in Greek & Sanskrit), and thus can't be analyzed as epenthesis.

(20) BRCT copy + reduce in Yoruba

/RED+jɛ/	IDENT-V-IO	*¬[i]	IDENT-V-BR
a. ☞ ji-jɛ		*	*
b. jɛ-jɛ		**!	
c. ji-ji	*!		

- This only works if the reduplicant is *not* subject to the IDENT-V-IO constraint:

(21) Copy + reduce in Yoruba in a Spaelti model

a. Same ranking as above (wrongly predicts faithful reduplicant)

/RED+jɛ/	IDENT-V-IO	*¬[i]	IDENT-V-BR
a. ☹ ji-jɛ	*!	*	*
b. 💣 jɛ-jɛ		**	
c. ji-ji	*!*		

b. Flipped ranking (wrongly predicts across-the-board reduction)

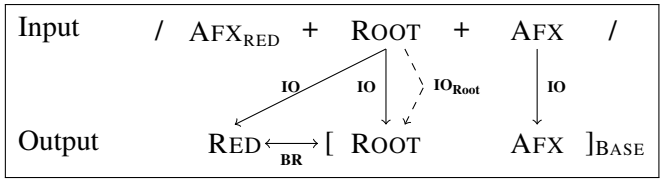
/RED+jɛ/	*¬[i]	IDENT-V-IO	IDENT-V-BR
a. ☹ ji-jɛ	*!	*	*
b. jɛ-jɛ	*!*		
c. 💣 ji-ji		**	

- In other words, without further amendments, a simple Broad IO faithfulness approach loses out on certain types of TETU cases.

2.5 Adding Root Faithfulness

- Struijke (2002) proposes a simple fix for this problem: bring in positional faithfulness (Beckman 1998, *a.o.*), specifically Root faithfulness.

(22) Base-Reduplicant Correspondence Theory: Struijke model



- Root faithfulness can now distinguish between base and reduplicant in favor of the base (or rather, in favor of the root portion of the base), in the same way that M&P did in the Basic Model by denying IO correspondence for the reduplicant.

- The Yoruba case can now be easily recast in these terms:

(23) Root faithfulness copy + reduce in Yoruba

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

References

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