Classes 9 and 10: Prosodic morphology

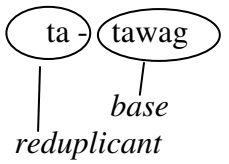
To do
- Fijian assignment (on last week's material) is due Friday
- Next reading Moreton 2008 (due Tuesday)
- Project: have 1st meeting with me by the end of this week

Overview: Last week we reviewed evidence for various structure above the segment. This week we look at its role in morphology.

0. But first: choosing constraints, fitting and overfitting data

1. Reduplication: basics

Terminology:



Let's start with a totally productive example, from Tagalog:

t<um>awag	'to call'	**ta**tawag	'will call'
b<um>ili	'to buy'	**bi**bili	'will buy'
s<um>ulat	'to write'	**su**sulat	'will write'
t<um>akbo	'to run'	**ta**takbo	'will run'
d<um>aʔan	'to drop in'	**da**ɾaʔan	'will drop in'

We need to explain:
- What causes the prefix to be a copy rather than [ʔə] or something
- How much of the base is copied, and from which part
- How other phonological processes interact, as in the last example (reduplication feeds a tapping rule d → ɾ / V __ V).

First framework we'll look at: Marantz 1982.

Prefix is a blank skeleton /CV/.

	/CV+daʔan/
make full copy of melody	CV + CVCVC | | | | | daʔan d a ʔ a n
associate stray melody to stray skeleton (see Marantz for details)	CV + CVCVC | | | | | | d aʔan d a ʔ a n
erase remaining strays	CV + CVCVC | | | | | | d a d a ʔ a n
d → ɾ / V __ V	CV + CVCVC | | | | | | d a ɾ a ʔ a n

2. Special relationship between base and reduplicant?

Wilbur 1973 pointed out some examples that could be problematic. Let's try derivations for each to see the problems.

Tagalog *again*: certain prefixes cause stem-initial obstruent to turn into a nasal.

pistá	'festival'	pa-**m**istá	'for a festive occasion'	màː-**mi**-**m**istá	'visitors to a festival'
ʔasúl	'blue'			ma-**ŋ**asúl-**ŋ**asúl	'to turn blue'

Madura (a.k.a. Madurese; Austronesian; Indonesia, 13,700,000 speakers; Stevens 1968 via McCarthy & Prince 1995)

Nasality spreads rightward from a nasal stop until it hits an obstruent.

j̃ãt-nẽj̃ãt	'intentions'
w̃ã-mõw̃ã	'faces'
ẽn-mãẽn-ãn	'toys'
ɔn-sɔʔon	'request'

Malay (a.k.a. Bahasa Malaysia; Austronesian; Malaysia, Brunei, Indonesia, Singapore; 18,000,000 speakers; Onn 1976 via McCarthy & Prince 1995; data controversial)

Nasality spreads rightward from a nasal stop till it hits an obstruent.

hamə̃	'germ'	hãmə̃-hãmə̃	'germs'
waŋ̃	'fragrant'	w̃ãŋ̃-w̃ãŋ̃	'very fragrant'
aŋãn	'reverie'	ãŋãn-ãŋãn	'ambition'
aŋẽn	'wind'	ãŋẽn-ãŋẽn	'unconfirmed news'

Conservative Tokyo Japanese *(*Ito & Mester 1990*, via McCarthy & Prince)*

g → ŋ / {V, N} __

	gaku-sei	**学**生	'student'	suu-ŋaku	数**学** 'mathematics'
but	gara-**g**ara	'rattle'			

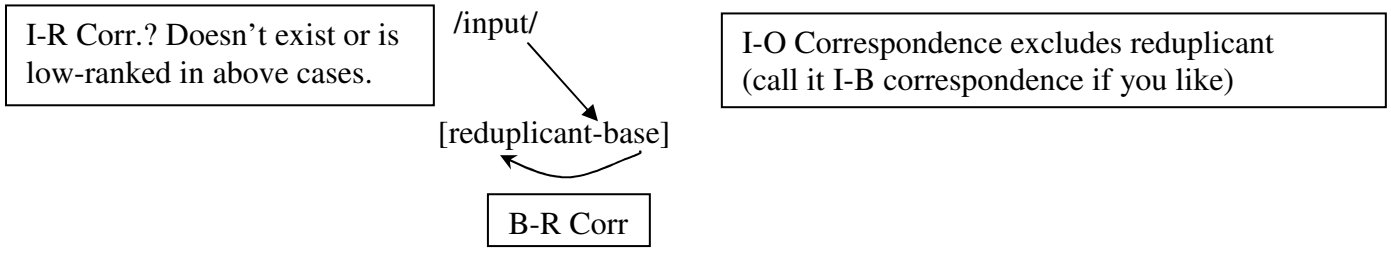
Luiseño (Munro & Benson 1973 via McCarthy & Prince; Uto-Aztecan language with about 43 speakers in Southern California)

ʧ → ʃ / __ {#, [–cont]} (sorry, I have no examples)

but	ʧóka	'to limp'	ʧuká-ʧka-ʃ	

3. Base-reduplicant correspondence (let's also review correspondence)

Inspired by Wilbur, McCarthy & Prince 1995 propose that just as correspondence constraints enforce similarity between input and output, they enforce it between base and reduplicant:



4. Madurese with B-R correspondence

Assume that nasal spreading results from the ranking *[+nas][–nas] >> IDENT-IO(nas)[1]

	/mowa/	*[+nas][–nas]	IDENT-IO(nas)
a	mowa	*!	
b	mõwa	*!	*
c	mõw̃a	*!	**
☞ *d*	mõw̃ã		***

- Let's see what happens:

	/RED+mowa/	*[+nas][–nas]	IDENT-BR(nas)	IDENT-IO(nas)
a (underapplication)	wa-mowa			
b	wa-mõwa			
c	wa-mõw̃a			
d (transparent)	wa-mõw̃ã			
e (overapplication)	w̃ã-mõw̃ã			

5. Malay with B-R correspondence

- Fill in the violations and find the winner:

	/RED+waŋi/	*[+nas][-nas]	IDENT-BR(nas)	IDENT-IO(nas)
a (underapplication)	waŋi-waŋi			
b (semi-underapplication)	waŋ̃i-waŋ̃i			
c (transparent)	waŋ̃i-w̃ãŋ̃i			
d (back-copying overapp)	w̃ãŋ̃i-w̃ãŋ̃i			

6. Japanese with B-R correspondence

Assume that g-lenition results from *Vg >> IDENT-IO(nas):

	/suu+gaku/	*Vg	IDENT-IO(nas)
a	suu-gaku	*!	
☞ *b*	suu-ŋaku		*

We can use B-R correspondence to rule out transparent *[gara-ŋara]. But how can we rule out the candidate with overapplication, *[ŋara-ŋara]? We need another markedness constraint, *[$_{wd}$ŋ:

	/RED+gara/	IDENT-BR(nas)	*[$_{wd}$ŋ	*Vg	IDENT-IO(nas)
☞ *c* (underapplication)	gara-gara			*	
d (overapplication)	ŋara-ŋara		*!		*
e (transparent)	gara-ŋara	*!			*

[1] Worried about the candidate *[bowa]? Because most consonants block nasal spreading, this language probably has a high-ranked constraint like ID(nas)/[–cont] ("don't change the [nasal] value of an underlyingly [–continuant] segment"), which will rule out *[bowa].

7. Emergence-of-the-Unmarked rankings

*Tagalog foreign segments (*Ross 1996*)*

[θ, ʃ, dʒ] don't occur in native words, but are, for many speakers, allowed in loanwords:

θæŋkju 'thank-you' ʃapɪŋ 'shopping' dʒagɪŋ 'jogging'

So for some speakers, some of the time, IDENT-IO constraints >> *θ,*ʃ, *dʒ.

In reduplication, though, foreign segment can be preserved in base and 'nativized' in reduplicant:

mag-tɛ-θæŋkju	*or*	mag-θɛ-θæŋkju	'will say thank-you'
mag-sa-ʃapɪŋ	*or*	mag-ʃa-ʃapɪŋ	'will shop'
mag-da-dʒagɪŋ	*or*	mag-dʒa-dʒagɪŋ	'will jog'
mag-di-dʒagɪŋ			
mag-dja-dʒagɪŋ			

This looks like a TETU ranking—the markedness constraint is sandwiched between two faithfulness constraints. Let's try a tableau.

8. The Kager-Hamilton problem (McCarthy & Prince 1999)

Early treatments of reduplication often supposed a constraint like RED=σ. Let's discuss what you found in your reading question about the typological implications.

McCarthy & Prince's solution: no reduplicant-specific constraints, just general markedness constraints, like...

- AFFIX=σ
- STEM=σσ

RED morphemes are labeled as affixes or stems, either as a lexical diacritic or somehow in the morphological system.

- Let's work out the factorial typology

9. Do we really need B-R correspondence?

Inkelas & Zoll 2005 argue that we don't. They propose **Morphological Doubling**:

- The base is generated twice
- One copy may be subject to a different subgrammar than the other
  - e.g., first copy's grammar allows no more than one syllable per morpheme
- Apparent cases of overapplication or back-copying have been misanalyzed

10. Infixation

Like reduplication, it's core morphology in some languages, just play in others.

You already saw in the reading Tagalog *-um-* and *-in-*, which are productive aspect morphology.

Prosodic circumscription

You saw this in the reading. The idea was to identify a prosodic constituent of the base and use it to define where the infix gets inserted. It was a bit unwieldy...

Phonotactically driven infixation

Then you saw the idea of using phonotactic constraints to drive infixation:

	/ɪz/,[2] /haʊs/	NoCoda	Align(ɪz, L; PWord, L)
a	[**ɪz**.haʊs]	**!	
☞ *b*	[h**ɪ.z**aʊs]	*	h
c	[haʊ.**ɪz**s]	*	ha!ʊ
d	[haʊ.s**ɪz**]	*	ha!ʊs

And yet, infixes' ability to solve phonotactic problems is very limited. They can't, for example, travel around to break up complex onsets:

Hypothetical language

uninfixed	*infixed*
tran	t**ul**ran
sem.pwe	sem.p**ul**.we
kal.mar.gju	kal.mar.g**ul**.ju

Yu 2003, Yu 2007 surveys over 100 languages and finds that...

- 90% of infixes insert near the edge of the stem (after first C, first V, or first σ; before last V or last σ)
- the other 10% insert next to a stress (stressed V, σ, or foot).

Yu proposes constraints more like Align(possessive, L; HeadFoot, R)—let's see how this would work.

His idea is that phonetically or psycholinguistically salient points in the word can act as "pivots".

For edge-aligned infixes, I tend to assume a competition between stem and infix for left-alignment. (Though this is based on just a couple of cases and not a comprehensive survey, so maybe there are reasons not to do it this way.)

	/um/, /gradwet/	Align(Stem, L; PWord, L)	Don'tSplit/CC/	Align(*um*, L; PWord, L)
a	[**um**gradwet]	u!m		
☞ *b*	[g**um**radwet]		*	g
☞ *c*	[gr**um**adwet]			gr
d	[gra**um**dwet			gra
e	[grad**um**wet		*	grad
f	[gradw**um**et			gradw
g	[gradwe**um**t			gradwe
h	[gradwet**um**			gradwet

[2] On the history of this English infix, see Alderson 1953, Easto & Truzzi 1973; Hautzinger 1990; Oliver 1966; Russel & Murray 2004; Truzzi & Easto 1972.

11. Truncation

This is rarely a core part of the morphology. But it's widespread.
Since you read some good examples in McCarthy & Prince, let's just look at one case.

German short nicknames (hypocoristics), including some not from personal names, Ito & Mester 1997
Take one syllable's worth of segments from the beginning, and add *–i*

Éva	Évi
Stéfanìe	Stéffi
Hónecker	Hónni
Schimánsky	Schímmi
Tőpperwìen	Tőppi
Gàbriele	**Gábi**
Knoblauch	**Knobi**
Wáldemàr	Wáldi
Klínsmànn	Klínsi
Górbatschòw	Górbi
Háns	Hánsi
Úlrich	**Úlli**
Schláppner	**Schláppi**
Wásmèier	**Wási**
Andreas	**Andi**
Siegfried	**Siggi**

(pp. 3, 6, 7 of ROA version)

- Let's make tableaux to see why the ones in bold are opaque

[Itô & Mester use Sympathy (McCarthy 1999)]

Though we might be suspicious of the value of analyzing these data because they're not core morphology, in a way I think that makes them more revealing:

- Tagalog learners have no choice but to reduplicate as *ta-tawag*. We know that the pattern is learnable, but we don't know whether it's what learners would prefer.
- German speakers' previous experience doesn't really tell them whether to truncate *Wasmeier* as *Wasi* or *Wasmi*—they get to choose.

To sum up

- Prosodic units seem to play a role in morphology.
- We see this in both core, productive morphology and peripheral/playful morphology
- The jury's still out on whether reduplication requires a special relationship between base and reduplicant or merely a common origin.

See web version for last page with references

References

Alderson, William L. 1953. Carnie Talk from the West Coast. *American Speech* 28(2). 112-119. doi:10.2307/453166 (18 April, 2011).

Easto, Patrick C & Marcello Truzzi. 1973. Towards an Ethnography of the Carnival Social System. *The Journal of Popular Culture* VI(3). 550-566. doi:10.1111/j.0022-3840.1973.0603_550.x (18 April, 2011).

Hautzinger, Sarah. 1990. American Carnival Speech: Making the Jump. *Journal of American Culture* 13(4). 29-33. doi:10.1111/j.1542-734X.1990.00029.x (18 April, 2011).

Inkelas, Sharon & Cheryl Zoll. 2005. *Reduplication: doubling in morphology.*. Cambridge: Cambridge University Press.

Ito, Junko & Armin Mester. 1990. *Proper containment and phonological domains*.

Ito, Junko & Armin Mester. 1997. Sympathy theory and German truncations.. In Viola Miglio & Bruce Moren (eds.), *University of Maryland Working Papers in Linguistics 5. Selected Phonology Papers from Hopkins Optimality Theory Workshop 1997 / University of Maryland Mayfest 1997*, 117–139.

Marantz, Alec. 1982. Re Reduplication. *Linguistic Inquiry* 13(3). 435-482.

McCarthy, John J. 1999. Sympathy and phonological opacity. *Phonology* 16. 331–399.

McCarthy, John J & Alan Prince. 1995. Faithfulness and Reduplicative Identity.. In Jill Beckman, Laura Walsh Dickey, & Suzanne Urbanczyk (eds.), *University of Massachusetts Occasional Papers in Linguistics 18*, 249–384. Amherst, Mass.: GLSA Publications.

McCarthy, John J & Alan Prince. 1999. Faithfulness and identity in Prosodic Morphology.. In René Kager, Harry van der Hulst, & Wim Zonneveld (eds.), *The Prosody-Morphology Interface*, 218–309. Cambridge: Cambridge University Press.

Munro, Pamela & P. Benson. 1973. Reduplication and rule ordering in Luiseno. *International Journal of American Linguistics* 39. 15–21.

Oliver, Raymond. 1966. More Carnie Talk from the West Coast. *American Speech* 41(4). 278-283. doi:10.2307/453503 (18 April, 2011).

Onn, Farid. 1976. Aspects of Malay phonology and morphology: A generative approach.. University of Illinois at Urbana-Champaign [Published by Universiti Kebangsaan Malaysia, Bangi].

Ross, Kie. 1996. Floating phonotactics: variablility in infixation and reduplication of Tagalog loanwords.. University of California, Los Angeles m.a. thesis.

Russel, Carol L & Thomas E Murray. 2004. The Life and Death of Carnie. *American Speech* 79(4). 400-416. doi: 10.1215/00031283-79-4-400 (18 April, 2011).

Stevens, Alan M. 1968. *Madurese Phonology and Morphology*.. New Haven, CT: American Oriental Society (American Oriental Series 52).

Truzzi, Marcello & Patrick C Easto. 1972. Carnivals, road shows and freaks. *Society* 9(5). 26-34. doi:10.1007/BF02697608 (18 April, 2011).

Wilbur, Ronnie Bring. 1973. *The phonology of reduplication*.. Indiana University Linguistics Club.

Yu, Alan C. L. 2003. The Morphology and Phonology of Infixation.. UC Berkeley.

Yu, Alan C. L. 2007. The phonology-morphology interface from the perspective of infixation.. In Matti Miestamo & Bernhard Wälchli (eds.), *New challenges in typology: broadening the horizons and redefining the foundations*. Mouton de Gruyter.