

24.901 Prosodic Morphology

1. morphology

- the prototypical morphological operation is affixation to a base.
- usually the process applies independently of the phonology of the base:
be-ing, hit-ing, comput-ing, backtrack-ing, prefix-ing.

2. but sometimes the base must have certain phonological properties: otherwise the operation does not occur.

a. size requirements

English comparative affixes to “short” bases: red-er, yellow-er, *corrupt-er, *beautiful-er

- how is size measured?

b. truncations for hypocoristics

Pámela > Pam; Elízabeth -> Liz; Samántha -> Sam; proféssor -> prof

- how small can the truncate be?
- what portion of the base is truncated?

c. infixation of affix inside base:

Tagalog	aral	um-aral	‘teach’
	abot	um-abot	‘reach’
	salat	s-um-alat	‘write’
	sulat	s-um-ulat	‘read’
	preno	pr-um-eno	‘brake’
	gradwet	gr-um-adwet	‘graduate’

- where is the infix positioned?

d. reduplication: some portion of base is copied to mark the morphological category

Ilokano	<u>verb</u>	<u>reduplicated verb</u>	<u>no of copied phonemes</u>
	basa	bas-basa	‘read’ 3
	adal	ad-adal	‘study’ 2
	da.it	da-dait	‘sew’ 2
	takder	tak-takder	‘stand’ 3
	trabaho	trab-trabaho	‘work’ 4

- what is the size and shape of the reduplicant?

- which phonemes of the base map to the reduplicant?

e. shape transformation: the prosodic structure of the base is altered to mark a morphological category

Arabic broken plurals

<u>sg.</u>	<u>pl.</u>	
nafs	nufuus	'soul'
rajul	rijaal	'man'
jaziir-at	jazaaʔir	'island'
faakih-at	fawaakih	'fruit'
xaatam	xawaatim	'ring'
jundub	janaadib	'locust'

- what is shape of derived form?

3. possible answers:

- string transformations (e.g. Chomsky 1951); now regarded as too powerful
- Autosegmental Phonology: the C-V skeleton (Clements & Keyser 1982)

Arabic templates; root and pattern morphology

(2) a.	daras-a 'he studied'	ḥamal-a 'he carried'	rasam-a 'he drew'	šarib-a 'he drank'
b.	darras-a 'he taught'	ḥammal-a 'he loaded'	rassam-a 'he made draw'	šarrab-a 'he made drink'
c.	dars-un 'a lesson'	ḥiml-un 'cargo, load'	rasm-un 'a drawing'	šurb-ah 'a drink'
d.	darraas-un 'student'	ḥammaal-un 'porter'	rassaam-un 'draftsman'	šarraab-un 'drunkard'
e.	diraas-ah 'studies'	ḥimaal-ah 'trade of porter'	risaam-ah 'ordination'	
f.	madrās-ah 'Koranic school'		marsam-un 'studio'	mašrab-un 'tavern'
g.	daaris 'studying'	ḥaamil 'carrying'	raasim 'drawing'	šaarib 'drinking'

more examples

katab-a	daras-a	perfect
ya-ktub-u	ya-drus-u	imperfect
kaatib-un	daaris-un	participle
ma-ktab-a	ma-dras-a	noun of location
'write'	'study'	

- McCarthy 1979: consonantal radicals and vowel melodies map to C- and V-slots in template analogous to how tones are mapped to tone-bearing units

/a/	/au/	/ai/	vowel melodies
CVCVC	CV-CCVC	CVVCV	templates
/ktb/	/drs/	/md/	radicals

- Moravcsik 1978: survey of reduplication in 200+ languages; never clearly copies a syllable; a paradigm like the following is systematically missing from survey:

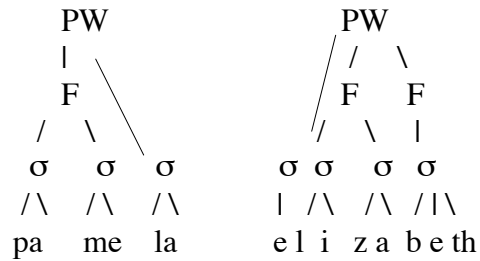
ta.pa	ta.ta.pa
ta:.pa	ta:.ta:pa
tap.ta	tap.tap.ta

- Marantz 1982: reduplication specifies an affix characterized in C-V templatic terms plus a rule copying phonemes of the base and mapping them to the affixal template in phoneme-driven fashion:

CVC-CVCV	UR
b a s a	
CVC-CVCV	copy phonemes of base
basa b a s a	
CVC-CVCV	map phonemes to CV slots
	and delete unmapped segments
b a s a b a s a	

4. McCarthy & Prince 1986: Prosodic Morphology Hypothesis

- templates for reduplication and truncation are specified in terms of **natural** units of prosody (mora, syll, foot) (cf. syllable templates);
- Prosodic Hierarchy: phoneme -> Mora -> Syllable -> Foot -> Prosodic Word



- truncation minimizes the word while still satisfying requirement that it be a Prosodic Word: project through Foot category.

5. examples

- Japanese hypocoristics: trochee: H, LL

<u>name</u>	<u>diminutive</u>
ti	tii-tyan
yoosuke	yoo-tyan
taizoo	tai-tyan
kinsuke	kin-tyan
wasaburoo	waa-tyan, wasa-tyan, sabu-tyan

- Yupik vocatives: iambic: H, LH

<u>name</u>	<u>vocatives</u>	
aŋukagnaq	aŋ	aŋuk
nipigak	nup	nupix
kalixtuq	kal	kalik
qətuŋcaq	qət	qətuŋ

- Ilokano: red = maximal syllable

<u>verb</u>	<u>reduplicated verb</u>		<u>no of copied phonemes</u>
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- Arabic broken pl (McCarthy & Prince 1990)
parse out a Trochaic foot at left edge and map to an Iambic foot

nafs	rajul	jaziir	xaatam	jundub	UR
{naf}s	{raju}l	{jazi}ir	{xaa}tam	{jun}dub	parse trochee
{nafaa}s	{rajuu}l	{jazii}ir	{xawaa}tam	{junuu}dub	change to iamb
{nufuu}s	{rijaa}l	{jazaa}ir	{xawaa}tim	{janaa}dib	change vowels
nufuus	rijaal	jazaa?ir	xawaatim	janaadib	add residue

6. OT model: Ideally prosodic morphology disappears as a special module and arises from variable ranking of independently motivated constraints on markedness, faithfulness, and alignment.

- Prince & Smolensky 1993. Tagalog um- infixation arises from ranking No-Coda¹ above an alignment constraint Edgemost that enforces a prefixal realization of the affix: no special circumscription required

/um, gradwet/	<u>No-Coda</u>	<u>Leftmostness</u>
um .grad.wet	***!	
gum .rad.wet	***!	g
> gru .mad.wet	**	gr
grad. wu .met	**	gradw!

/um, aral/	<u>No-Coda</u>	<u>Leftmostness</u>
> u .ma.ral	*	
a. u .ma.ral	*	a!
a. ru .mal	*	ar!

- McCarthy & Prince 1993 Axininca Campa

kawosi	kawosi- <u>kawosi</u>	‘bathe’
koma	koma- <u>koma</u>	‘paddle’
thaaŋki	thaaŋki- <u>thaaŋki</u>	‘hurry’
osampi	osampi- <u>sampi</u>	‘ask’
osaŋkina	osaŋkina- <u>saŋkina</u>	‘write’

➤ full reduplication of base to mark morphological category: /base-RED/

¹ The OT markedness constraints Onset (penalize syllables lacking a consonantal onset) and No-Coda (penalize syllables containing a consonantal coda) define CV as the optimal syllable (explaining why it is found in all languages and why VCV is canonically parsed V.CV)

	<u>Onset</u>	<u>No-Coda</u>
CV		
CVC		*
VC	*	*
V	*	

- RED is suffixal morpheme with morphosyntactic features but no fixed phonological
- in output RED tries to maximize copying of the preceding base but this is restricted by the avoidance of hiatus formalized as markedness constraint Onset: penalize syllables lacking a consonantal onset
- Onset >> Max-Base-Reduplicant

/osampi-RED/	<u>Onset</u>	<u>Max</u>
osampi-osampi	**!	
>osampi-sampi	*	o

7. OT research program in Prosodic Morphology

Template requirements are violable and determined by ranking
 Templates integrated with alignment of M and P categories
 Templates decomposed into constraints

AC: RED = at least two syllables
 Max-BR = reduplication is total: copies all of what precedes RED
 RED = material from root

root	reduplicated form with 1 sg. prefix	
kawosi	noŋ-kawosi-kawosi	'bathe'
kint ^h a	noŋ-kint ^h a- kint ^h a	'tell'
tho	non-t ^h o- non-t ^h o	'suck'
naa	no-na-no-na	'chew'

- the RED morpheme prefers to copy material from root
- but this can be overridden to ensure that reduplicant has two syllables

/noŋ-kawosi/	<u>Root</u>	<u>Max</u>
noŋ-kawosi= <u>noŋ-kawosi</u>	*!	
->noŋ-kawosi= <u>kawosi</u>		noŋ
/no-naa/	<u>Disyll</u>	<u>Root</u>
> no-naa- <u>no-naa</u>		*
no-naa- <u>naa</u>	*!	

- but when a prefix is missing (as in 3rd person) then the reduplicant is monosyllabic; no dummy syllable is inserted

/naa+RED/	<u>Dep</u>	<u>Disyll</u>
naa- <u>naa</u>		
naaTA- <u>naa-TA</u>	*!	

- Ranking: Dep >> Disyll >> Root >> Max

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