Reduplication

1. Reduplication

- Sometimes the phonological form of a morpheme is not intrinsically specified, instead it is copied from the phonology form of its base.

[9.3]

Unreduplicated		Reduplicated		
bar	'two'	barbar	'all two'	(Tzeltal)
ren	'man'	renren	'everybody'	(Mandarin)
anak	'child'	anakanak	'various children'	(Malay)

[9.8]

Singular		Plural	
kurdu	'child'	kurdukurdu	'children'
kamina	'girl'	kaminakamina	'girls'
mardukuja	'woman'	mardukujamardukuja	'women'

In [9.3] and [9.8] we have examples of **total reduplication** where the entire base has been copied**.** We also find **partial reduplication** patterns where only a part of the base is copied.

(1) Agta

(a)	*takki*	'leg'
	tak-takki	'legs'
(b)	*labáng*	'patch'
	lab-labáng	'patches'
(c)	*uffu*	'thigh'
	uf-uffu	'thighs''

(2) Yoruba

(a)	*tóbi*	'be big'
	tí-tóbi	'bigness'
(b)	*dùn*	'be sweet'
	dí-dùn	'sweetness'

- Partial reduplication can be exact (1) or inexact (2). In inexact reduplicatin, some portion of the reduplicating affix is prespecified, e.g. in Yoruba (2) the vowel of the

prefix is prespecified as /i/ and only the consonant of the prefix is copied from the base.

- One early generative proposal (Marantz 1982) is that reduplicating morphemes can be understood as having a **CV template** and an underspecified or partially specified segmental tier. When affixation occurs, segmental material of the base is associated to the skeletal tier of the affix.

- On this approach, reduplicative patterns can be characterized according to the following parameters:
  - The shape of the reduplicative CV template
  - The position of attachment of the reduplicative affix (prefix, suffix, infix)
  - The part of the base copied as 'melody' (melody=segmental tier)
  - The direction of mapping (is the base copied right to left or left to right?)

- Katamba and Stonham adopt a version of this involving the mapping principles in (3)/[9.12]

(3) Mapping principles

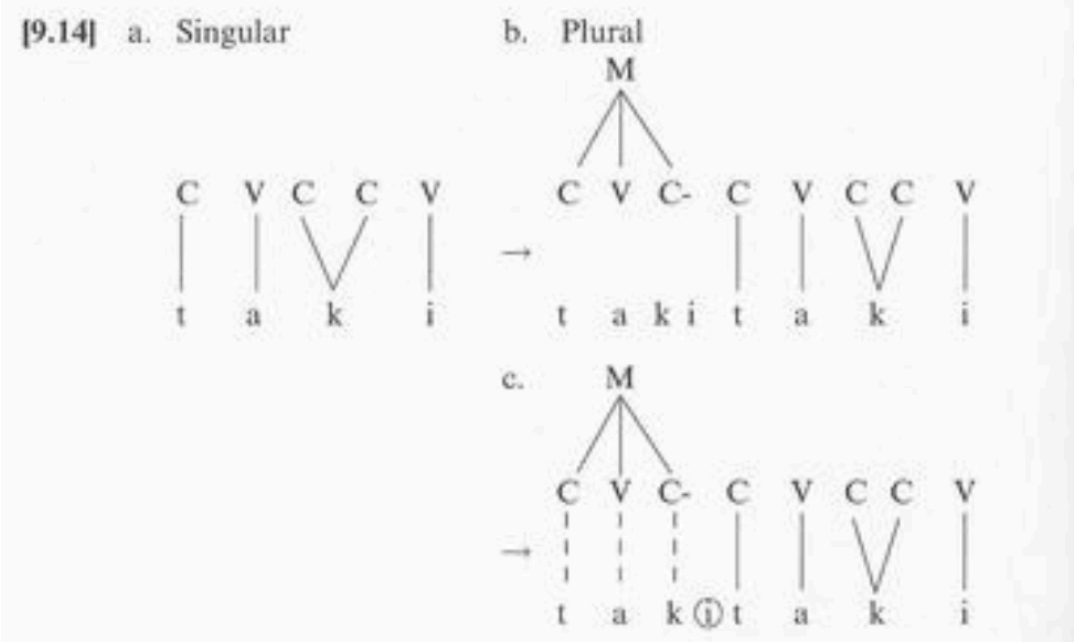
[9.12] Mapping Principles in Reduplication

(i) Introduce an underspecified affix (prefix, suffix or infix);
(ii) create an unassociated copy of the phonemic melody of the root or stem or base;
(iii) associate the copied phonemic melody on to the CV skeleton one-to-one, with vowels being linked to V slots and consonants with C slots. In the case of a prefix the association goes from left to right while in the case of a suffix it goes from right to left;
(iv) finally, erase all superfluous phonemic material or any CV slots on the skeletal tier that remain unassociated at the end.

NB: note that these mapping principles are 'melody' driven, meaning association is from segment tier to CV tier. This will become relevant in the next section.

- With these pieces in place, we can see how a reduplicating derivation works on the **CV template approach**.

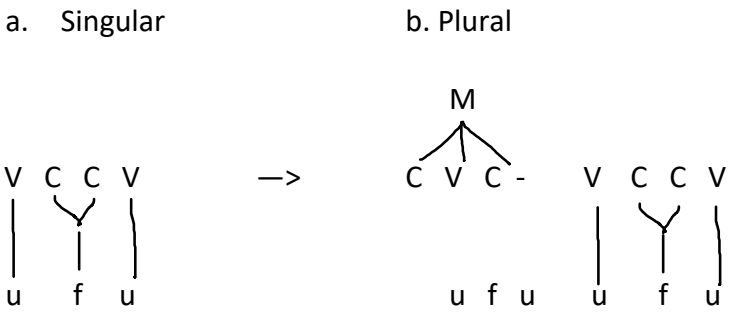
(4) Derivation for Agta: [taktaki]

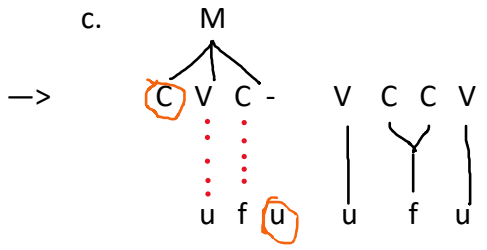


- (b) shows introduction of an underspecified plural prefix and shows creation of an unassociated copy of the phonemic melody of the base (entire base melody is copied)
- (c) shows association of segments to the CV template one-to-one, with vowels associating to Vs and consonants associating to Cs. The directon of association is left-to-right because this is a prefix.
- (c) also shows erasure of the superfluous segment /i/

Note: new M notation = morpheme tier**,** in the CV template approach, there is a level of representation (a tier) for the morpheme, which allows us to capture the association between segment strings and morphemes. We see this in [9.14] in that the CV template for the reduplicating plural morpheme is linked to a single M.

(5) Derivation for Agta: ufuffu





- (b) shows introduction of an underspecified plural prefix and shows creation of an unassociated copy of the phonemic melody of the base (entire base melody is copied)
- (c) shows association of segments to the CV template one-to-one, with vowels associating to Vs and consonants associating to Cs. The directon of association is left-to-right because this is a prefix.
- (c) also shows erasure of the superfluous segment of superfluous C slot in the template and superfluous /u/ in the copied melody

- The CV template of the reduplicating affix, in combination with the mapping principles, can result in the reduplicated pattern being different from the base, as in the Tagalog exercise below.

Exercise

Study the Tagalog data below.

[9.17]	a.	tahi:mik	'quiet'
		↓	
	b.	tahi:- tahi:mik	'rather quiet'
[9.18]	a.	baluktot	'crooked'
		↓	
	b.	balu:- baluktot	'variously bent'

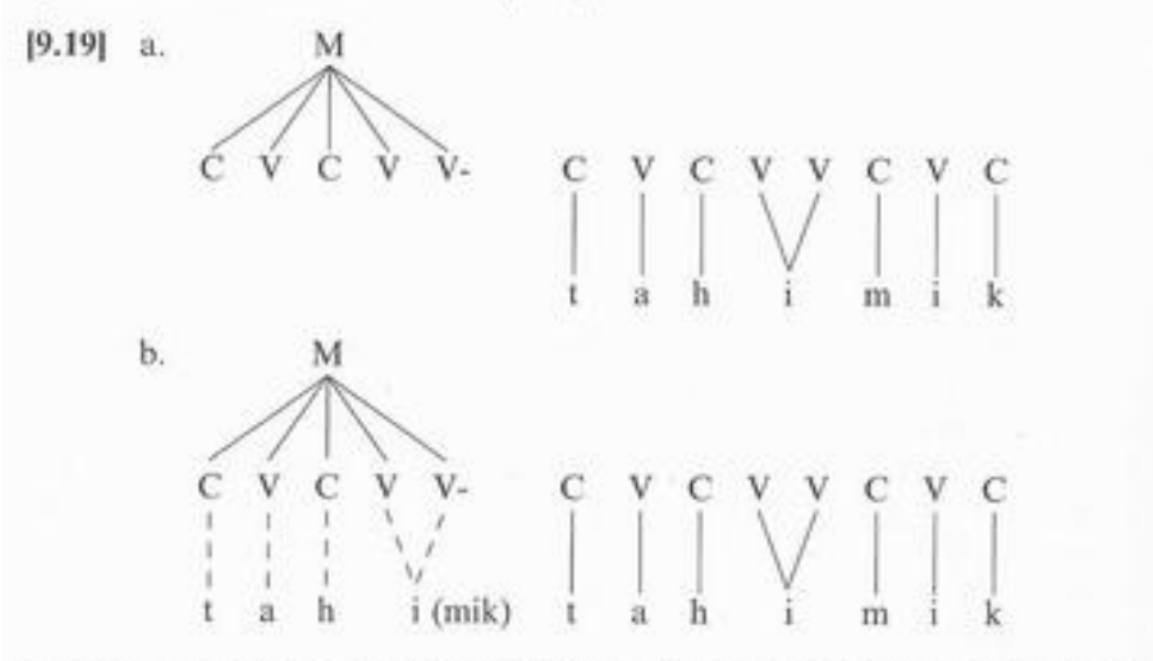
Hint: Treat long vowels as parallel to geminate consonants.

(i) How does reduplication work when the base contains a trisyllabic morpheme?

(ii) Write a CV template to account for this type of reduplication.

[ignore questions, we're just interested in the data]

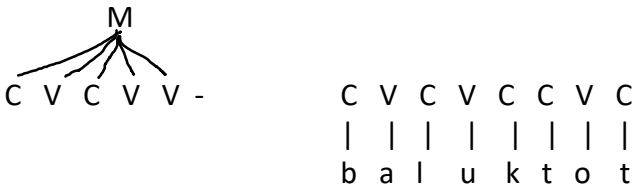
(6) Derivation of Tagalog [tahi:tahi:mik]



- (a) shows the introduction of the underspecified prefix
- (b) shows copying of the melody of the base and left-to-right, one-to-one association of the melody to the CV template. Note that at the right edge of the prefix's CV template there is a V V sequence. The vowel /i/ associates to both V slots, resulting in a long vowel.
- In this example the /i/ happens to also be long in the base, but it need not be, as we can see in [9.8] where the /u/ is long in the prefix, but not in the base.

(7) Derivation of Tagalog [balu:baluktot]

a.



b.

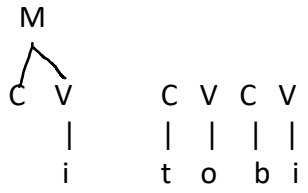
- Inexact partial reduplication can be explained by prelinking segments to part of the CV template. (See Katamba and Stonham 9.3.5)

(8) Yoruba (repeated from above)

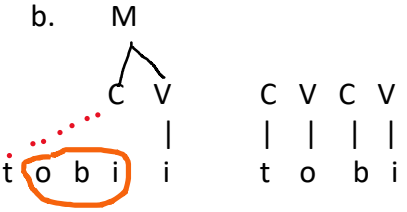
(a)	*tóbi*	'be big'
	tí-tóbi	'bigness'
(b)	*dùn*	'be sweet'
	dí-dùn	'sweetness'

(9) Derivation for Yoruba [títóbi]
(here I ignore tone)

a.

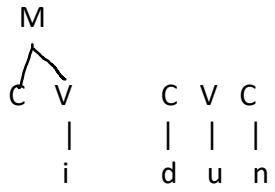


b.

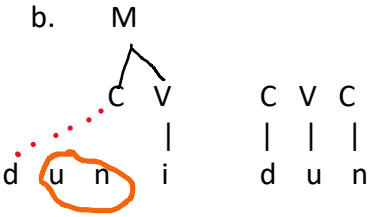


(10) Derivation for Yoruba [dídùn]
(here I ignore tone)

a.



b.

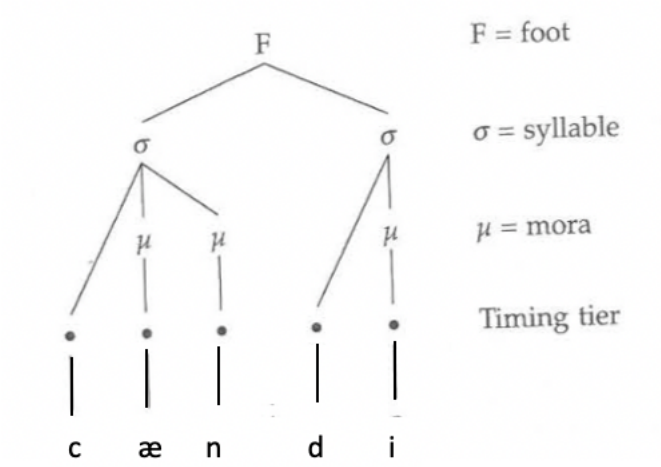


2. Theory of prosodic morphology

- The CV-template approach to reduplication was challenged by the **theory of prosodic morphology** (McCarthy & Prince 1988 and subsequent work) which proposes to copy the segment tier to a template defined in terms of **genuine prosodic unit** rather than a (potentially arbitrary) CV pattern.

- Prosodic units relevant to word-formation:
  - Mora
  - Syllable
  - Foot
  - Minimal word

(11) Prosodic units



• NB: I am assuming familiarity with prosodic units from LIN229
  - You should be familiar with the concepts of foot (a prosodic unit consisting of two syllables).
  - Also important is the concept of syllables being either **heavy** (containing two moras as in the first syllable in (11) or **light** (containing just one mora as in the second syllable in (11).
  - You should also recall that the second mora of a heavy syllable can be linked to either a vowel or a consonant. All of the following are possible heavy syllables: baa, bao, bam
  - The onsets of syllables do not count towards syllable weight. Whether a syllable has a simple or complex onset (ba vs. bra) is irrelevant.

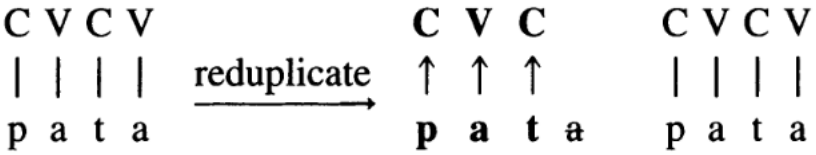
[9.29] (i) The Prosodic Morphology Hypothesis
This requires that templates are stated neither in segmental terms nor in terms of C and V slots on the skeletal tier, but rather in terms of the units of prosody, for example, the mora, syllable, foot, prosodic word and so on.

(ii) The Template Satisfaction Condition
This principle makes it obligatory to satisfy all elements in a template. It is forbidden to leave any part of the morphological template unassociated with some prosodic unit. The association follows both universal and language specific principles.

(iii) The Prosodic Circumscription of Domains
This states that the domain in which morphological processes take place may be circumscribed not only by morphosyntactic factors, but also by prosodic criteria. In particular, morphological operations may target the **minimal word** within a domain rather than the whole domain.

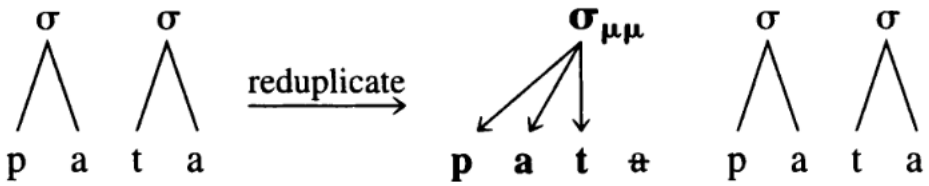
(12) CV template approach

) *Marantz's (1982) approach to reduplication:* **pat**-pata



(13) Prosodic morphology approach

(2) *McCarthy and Prince's (1986) approach to reduplication:* **pat**-pata



- Whereas the CV-template approach is 'melody driven', the prosodic morphology approach is 'tier driven'. This means we satisfy the template by drawing association lines from the prosodic template to the segment tier until you have to stop.

- An advantage of the prosodic morphology approach over the CV approach is that it explains asymmetries in the output of reduplication of the sort illustrated below.

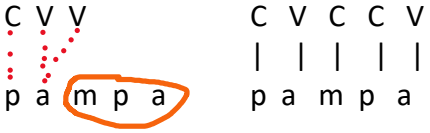
(14) Constructed case (but there are systems like this)

a.	pampa	**pam**pampa	***paa**pampa
b.	muuni	**muu**muni	***munmuni**

- in (a) the output of reduplication *pam* suggesting a CVC template
- in (b) the output of reduplication is *muu* suggesting a CVV template

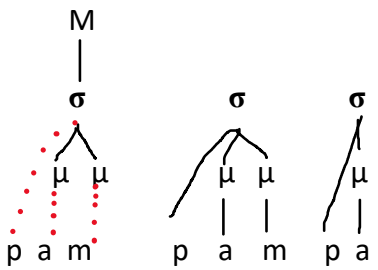
- (14) is problematic for the CV template approach.
  - If we assume a CVC template we incorrectly predict the output *mun* in (b) (on the assumption that we erase stray template positions and segments)

  - If we assume a CVV template we incorrectly predict the output *paa* for (a) [or possibly *pa* if spreading of the V is disallowed]



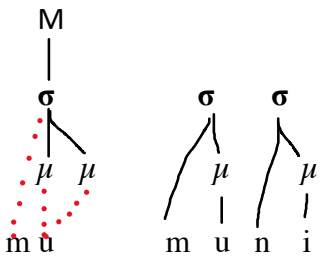
- On the prosodic morphology approach, we can unify these outputs by positing the following:
  - The reduplicating template is a prosodic unit (in this case a heavy syllable, i.e. a syllable with two moras). By definition, heavy syllables can have either shape CVC or CVV.
  - The part of the base that gets copied can be a subset of the base. This subset is **also defined in terms of a prosodic unit** (in this case the part of the base that is copied Is the first syllable). Note that this aspect of the theory of prosodic morphology is not introduced in the readings.

(15)



– In (15) the melody that is copied corresponds to the part of the segmental tier that is associated to the first syllable of the base, i.e. /pam/

(16)



– In (16) the melody that is copied is just /m u/ which corresponds to the part of the segmental tier associated with the first syllable of the base. This predicts that the output of reduplication will be [muu].
– If we did not restrict the copied portion of the base to the first syllable, the copied melodi would be /m u n i/ and we would incorrectly predict that the output of reduplication could be [mun]