Nicholas LaCara · University of Toronto LIN333 · 25 March 2019

Reduplication

We continue our discussion of morphology–phonology interactions today with reduplication, a process whereby an affix is realized by copying phonological material from the base it attaches to.

1 Overview

- Last week, we discussed the case of infixation, a morphophonological process where an affix attaches inside a word rather than at either end.
  - Understanding this phenomenon requires looking at the phonological structure of words rather than the morphosyntactic structure.
  - Infixes can be placed after segments, between syllables, or between feet. The position is not determined by pre-existing morpheme boundaries.
- Today, we turn to reduplication, a process that copies all or part of a word.

(1) *Full reduplication in Warlpiri (Pama–Nyungan; Australia)*:

a. kurdu → kurdukurdu
child child.child
'child' → 'children'

b. mardukuja → mardukujamardukuja
woman woman.woman
'woman' → 'women'

(2) *Partial reduplication in Agta (Austronesian; Philippines)*:

a. takki → taktakki
leg PL.child
'leg' → 'legs'

b. uffu → ufuffu
thigh PL.thigh
'thigh' → 'thighs'

- Like infixing, reduplication often requires us to look at the segmental and prosodic structure of a word to understand the constraints over what gets copied.
  - This is especially important in cases of partial reduplication, where only a subpart of a word gets copied.
  - While the material that gets copied is clearly a subpart of the segmental material of the base, the form of the reduplicated material often has a different prosodic form.
- In order to discuss these issues, we'll need to adopt some formalism from Autosegmental Phonology (Goldsmith 1976) which lets us separate segments from the prosodic structure they occur in.
  - With that we can talk about how different kinds of partial reduplication patterns are derived.
- I'll finish by talking about contrastive reduplication in English (Ghomeshi et al. 2004), since it is typologically odd and cannot easily be accommodated in phonological theories of reduplication.

2 Properties of reduplication

- Let's begin by discussing the properties the reduplication has cross-linguistically.
- We'll first look at the semantic and grammatical functions it has before turning to its phonological properties and the problems these raise for its analysis.

2.1 Morphosemantic properties

- Cross-linguistically, reduplication tends to be used for a number of grammatical purposes.
- The most common of these correspond to both inflectional and derivational processes.

Reduplication is not limited to these, though. Other functions have been observed. See Moravcsik (1978) for the original overview.

  i. Plural
     - O'odham: *bana* 'coyote' → *baa-bana* 'coyotes'
     - Samoan: *nofo* '(he) sits' → *no-nofo* '(they) sit'
  ii. Quantification (over nouns)
     - Luganda: *babiri* 'two' → *babiri-babiri* 'every two'
     - Malay: *anak* 'child' → *anak-anak* 'various children'
  iii. Pluractionality (Repeated actions, events, or reciprocation)
     - Sundanese: *guyon* 'jest' → *gu-guyon* 'jest repeatedly'
     - Maori: *ako* 'learn' → *ako-ako* 'consult together'
  iv. Augmentation
     - Turkish: *dolu* 'full' → *dop-dolu* 'quite full'
     - Kinande: *oku-gulu* 'leg' → *oku-gulu-gulu* 'a real leg'

The reduplicants can, on occasion, contain material that is not part of the base.

  v. Diminution
     - Thai: kɛ̀ɛ 'old' → kɛ̀ɛ-kɛ̀ɛ 'elderly'
     - Maori: *whero* 'red' → *whe-whero* 'reddish'

- (Most) of these are things that we've seen other morphological affixes do.
  - The sorts of grammatical functions associated with reduplication are those that could in principle be associated with a normal affix.

We might wonder, though, why the things on the list above are so common. There is some feeling that this has to do with some sound–meaning correspondence.

- You'll also notice this happens in a very wide variety of languages.
  - O'odham, Turkish, Thai, Samoan, and Luganda are not related to each other. At all.
  - Despite being relatively uncommon in Western Indo-European languages, reduplication is very well attested in the languages of the world in several unrelated families.

2.2 The problem

- Let's look at a specific, simple case to understand what the issue is from our current theoretical perspective.
- Katamba (1993: 181) discusses plurals in Tohono O'odham:

Also known as Papago.

(3) *Plurals in O'odham (Uto-Aztecan; Arizona)*:

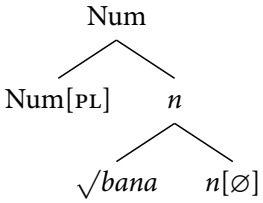
Sg	**Pl**	**Gloss**
bana	*baa-bana*	'coyote'
tini	*tii-tini*	'mouth'
kuna	*kuu-kuna*	'husband'

  - As can be seen here, each of the plural nouns has a prefix that is absent in the singular form.
  - This prefix, though, doesn't have a uniform phonological form; it is based (apparently) on the first syllable of the noun being pluralized.

This is a form of PARTIAL REDUPLICATION, which we will return to in Section 4.

- Thus, there is a prefix that copies part of the phonology of its base.
  - That prefix means plural, but it doesn't have a fixed phonological form associated with it.
- Presumably, though, these words have the same underlying structure that plural nouns have in other languages:

(4)



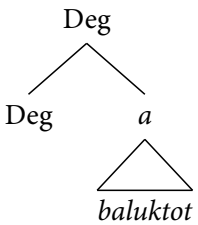
- The trick here is understanding how the Num head comes to have this phonological representation.
- In other words, Num[PL] must come to be pronounced *baa* in this context.

- Take another case, this time from Tagalog:

(5) a. tahiːmik 'quiet' → tahiː-tahiːmik 'rather quiet'
b. baluktot 'crooked' → baluː-baluktot 'variously bent'

- The prefix appears to be some sort of degree modifier on the adjective. We might imagine a similar structure to the one above where the adjective moves to Deg:

(6)



- Somehow, Deg must come to be pronounced [baluː-].
- But notice, as in the O'odham example above, that this does not exactly match the base – a long vowel is introduced in the reduplicant.

- So there are (at least) two questions here:

  1. What is the size of the material that gets copied from the base?
  2. How do we implement the copying in our theory?

2.3 What gets copied

- We will refer to the material that gets copied from the base as the REDUPLICANT, often abbreviated as RED.
- The first question, looking at the examples above, is what gets copied.
- Looking at the examples above, we can see at least two different patterns:

  i. FULL REDUPLICATION
  This describes when a full word is copied, as in the Luganda example *babiri* → *babiribabiri*.

  ii. PARTIAL REDUPLICATION
  This describes when only a subpart of a word is copied, as in Sundanese *guyon* → *guguyon*.

- It is conceivable that full reduplication involves copying an entire syntactic constituent (an X° or maybe XP).

  – It's not always obvious how to tell this apart from a reduplicating a sufficiently large prosodic unit like a phonological word (ω).

We'll discuss this a bit more when we look at contrastive reduplication in English in Section 5.

- Partial reduplication, on the other hand, is much more intricate:

  – It appears that a (usually) contiguous subset of the phonological segments of the base get copied.
  – The shape of the reduplicant, however, need not match the copied material perfectly, and may have a prosodic shape of its own.

And by 'shape' here, I mean, at the very least, the combination consonants and vowels that the reduplicant might have (*e.g.*, CVCV, or CVV, *etc.*).

- Take the case a of O'odham *bana* → *baabana* from (4) again:

  – The first two segments [ba] are copied from the base.
  – However, the reduplicant contains a long vowel [ba:-].
  – This can be seen in the other O'odham examples in (3); *e.g.* *tini* → *tiitini*

- We might summarize this pattern by saying something like 'Copy the first syllable and lengthen the vowel'.
- Notice that in this case we can refer to copying a syllable. A lot of reduplication doesn't let us do this. Compare Tagalog *baluktot* → *balu:baluktot* from (6):

  – The material copied in this case is just less than two syllables.
  – The base is [ba.luk.tot], but the reduplicant [ba.lu:-] is missing the second syllable's coda.

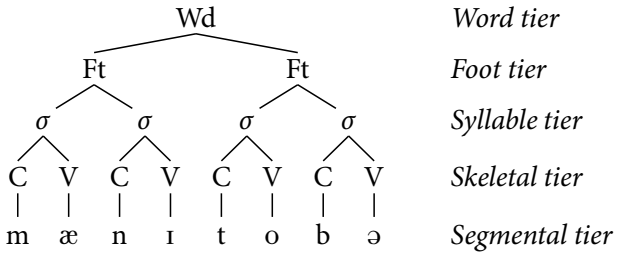
- Whatever is happening here, it isn't clear that we can say something as simple as 'copy the first two syllables and drop the coda (if there is one)'.
  - One thing to notice here is that the copies are imperfect in some sense; they do not copy full prosodic constituents, and they can warp the original prosodic shape of the base.
- Another aspect of this is that we need to access material smaller than a morpheme, similar to what we saw last week with infixation.
  - While the reduplicant is itself is an affix of some sort, the material that it copies seems to range over phonological constituents (*e.g.*, segments, syllables), not morphosyntactic ones.
- As such, partial reduplication looks like a truly phonological phenomenon. We need a theory of phonology that lets us refer to these phonological constituents.

3 Autosegmental phonology and prosodic structure

- Last week in our discussion of infixation, we talked about prosodic structure, and I used trees like the following to represent this structure:

Compare this to (34b) on the handout on Morphology–phonology mismatches.

(7) *Prosodic tree of* Manitoba:



  - These trees show different levels of prosodic structure organized into tiers.
  - I've added to this representation a skeletal TIMING tier, which shows a template of consonants and vowels.

See Section 3.2.

- A central hypothesis in Autosegmental Phonology is that phonological representations are actually composed of several independent but parallel tiers.
  - Links between elements in each tier are shown through *association lines*.
  - Elements in different tiers may be affected or changed without necessarily affecting the elements they are associated with in other tiers.
- Some of these tiers might be hierarchically organized, like the prosodic tiers in (7), but they have been found to be useful in other ways, as well.
  - Assuming that the skeletal tier may behave independently of the segmental tier will provide the key to understanding reduplication.

3.1 Tone

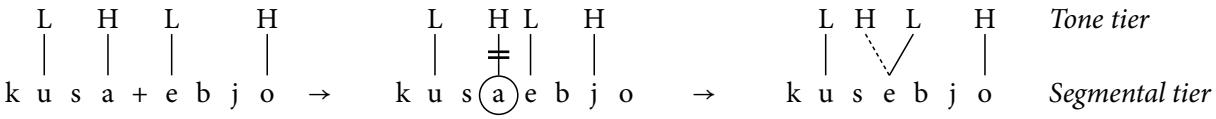
- Auotsegmental phonology originated in the description of tone and other SUPRASEGMENTAL features.

See, especially, Goldsmith's (1976) dissertation, where the theory was first elaborated.

- Tones in many languages seem to behave independently of the individual segments that bear them.
- Katamba (1993: 155) discusses the example of vowel deletion in Luganda.
  - When two [-HI] vowels are adjacent, the first vowel deletes, but its tone spreads to the remaining vowel: *kùsá* + *èbyó* → *kùsêːbyò*
  - This would seem to indicate that the tone on a deleted vowel exists independent of the vowel itself.
  - This can be explained if tones exist on an independent tier from the segments themselves (8).
  - Deleting the tone-bearing segment doesn't delete the tone (11b). Instead, the tone can associate with a new segment (11c).

(8) *kùsá* 'grind' + *èbyó* 'those'

a. *Underlying representation*: b. *Delete vowel*: c. *Reassociate high tone*:



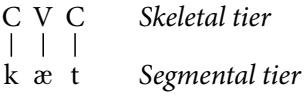
  - A crossed out line indicates a deleted link. A circle (or parentheses) around a node indicates deletion. A dashed line indicates a new association.

Katamba (1993: 155) makes the wrong line dashed.

3.2 The skeletal tier

- It is often assumed that elements in different tiers are linked together through an abstract skeletal tier (sometimes called the timing tier).
- The assumption is that each segment in the phonological representation of a morpheme is associated with a slot in the skeletal tier:

(9)

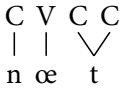


- In this system, segment length is represented by being associated with more than one slot in the skeletal tier (which is why it is sometimes called the TIMING TIER).

(10) *Swedish* nöt *'nut' and* nött *'worn'*:

a. [nøːt]

b. [nœtː]



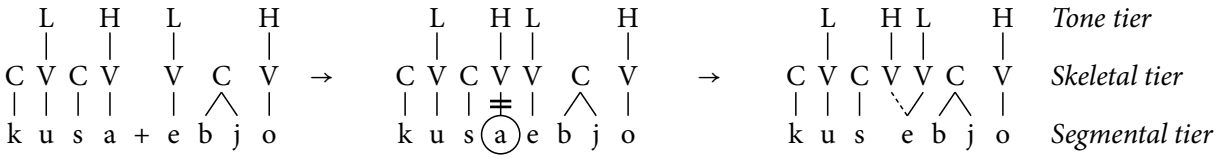
- Importantly for the coming discussion, the identity of a phonological segment is distinct from the length that it has.

In other words, length is not a property of segments themselves in this theory; rather, it's a property of how they are linked to the skeletal tier.

- If we go back to the Luganda example in (8), this set up actually lets us explain why there is vowel lengthening.
  - That is, a better analysis of (8) involves not reassociating a tone with a vowel, but instead associating a vowel with a V slot that has lost its vowel.
  - This explains why [e] becomes long when the preceding vowel deletes (a phenomenon known as COMPENSATORY LENGTHENING.

(11) *kùsá* 'grind' + *èbyó* 'those'

a. *Underlying representation*: b. *Delete vowel*: c. *Associate* [e] *with other V slot*:



- There is, of course, more to Autosegmental Phonology, but we have enough tools now to talk about partial reduplication.

4 Partial reduplication

- Recall from the discussion in Section 2.3 it is possible for the reduplicated material to have a different prosodic shape from material in the base.
  - It appears that a contiguous subset of the phonological segments of the base get copied.
  - But the shape of the reduplicant need not match the copied material perfectly, and may have a prosodic shape of its own.
- The theory of Autosegmental Phonology discussed in the previous section allows us to refer to phonological segments and prosodic shape separately:
  - Segmental material can be copied from the segmental tier of the base.
  - The prosodic shape, however, can come from the reduplicant itself.
- The leading idea here is that reduplicants are affixes whose phonological forms contain only a skeletal tier, called a TEMPLATE, and no segmental tier.
  - In order to be phonologically well-formed, as many slots in the skeletal tier as possible must be associated with a segment.
  - This can be achieved by copying the base and parsing it into slots of the reduplicant's skeletal tier.

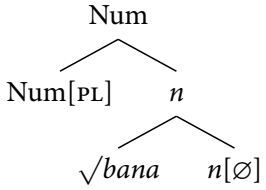
4.1 O'odham

- We looked earlier at the case of O'odham, where the redpulicant contained a long vowel even when the base did not:

(12) a. *Plurals in O'odham*:

Sg	Pl	Gloss
bana	*baabana*	'coyote'
tini	*tiitini*	'mouth'
kuna	*kuukuna*	'husband'

b. *Plural noun structure*:



- For our purposes, we can assume that the the plural affix in O'odham has as its exponent a CVV TEMPLATE that is added to the skeletal tier:

The alternative in DM is to assume that reduplication is a form of readjustment. See Haugen 2011 for discussion.

(13) Num[PL] ↔ /CVV/

- This means that when we linearize Num and √*bana* in (12b), we will end up with a statement like /CVV/^/bana/ that gets sent to the phonology.
- The phonology winds up with an underlying representation like the following:

(14) *Underlying representation for* baabana:

```
C V V + C V C V    Skeletal tier
        | | | |
        b a n a    Segmental tier
```

- Phonologically, this representation is incomplete. What we must do is *copy segments* from the base and associate each slot in RED with a copied segment:

(15) a. *Copy the base*:

```
C V V + C V C V
        | | | |
b a n a b a n a
```

b. *Associate L→R*:

```
C V V + C V C V
⋮  ⋱     | | | |
b a (n)(a) b a n a
```

c. *Surface representation*:

```
C V V C V C V
⋮  ⋱  | | | |
b a  b a n a
```

- Katamba (1993: 185-186) proposes adopting following rules, based on Marantz (1982) and Broselow and McCarthy (1983):

(16) *Rules for reduplicants* (Marantz 1982):
The grammar must state the following:

a. the shape of the reduplicative CV-template,
b. whether the reduplicative CV-template is prefixed, infixed or suffixed,
c. the part of the base copied as the 'melody',
d. the direction of mapping: Is the melody mapped on to the CV-template left-to-right or right-to-left?

(17) *Mapping principles* (after Broselow and McCarthy 1983):

a. Introduce an underspecified affix.

b. Create an unassociated copy of the phonemic melody of the root or stem or base.

c. 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.
- In the case of a suffix it goes from right to left.

d. Erase all superfluous phonemic material or any CV slots on the skeletal tier that remain unassociated at the end.

Some of these are meant to fill out Marantz's rules. Principle (17c) goes a long way to answering (16c) and (16d).

4.2 Tagalog

- In Section 2.2, we saw cases of degree morphology on adjectives in Tagalog.

(18) a. tahi:mik 'quiet' → tahi:-tahi:mik 'rather quiet'

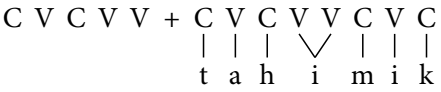
b. baluktot 'crooked' → balu:-baluktot 'variously bent'

- As example (18b) shows, we are not copying a full syllable.
- The second syllable of the base in (18a) has a long vowel, while in (18b), it has a coda consonant.
- Regardless of this, the shape of the reduplicant is CVCVV.

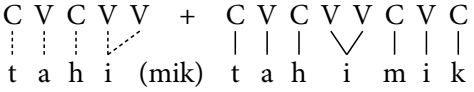
- We can explain this if RED = CVCVV:

(19) *RED* + tahi:mik → tahi:tahi:mik:

a. *Underlying representation for* tahi:tahi:mik:

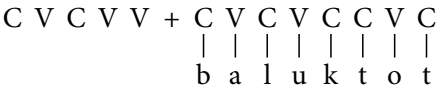


b. *Association to* RED:

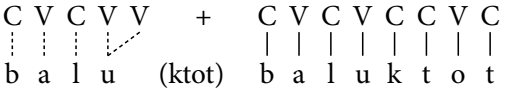


(20) *RED* + baluktot → balu:baluktot:

a. *Underlying representation for* balu:baluktot:



b. *Association to* RED:



- Thus what we see here is that the final reduplicated form is not directly affected by the prosodic shape of the base.

- Rather, it is the template introduced by the reduplicant that constrains the shape of the final form.
- The fact that the base of (18a) has a long vowel has nothing to do with the fact that the reduplicant does.

4.3 Suffixing reduplication

- Suffixing reduplication tends to be less common than prefixing reduplication.
- Marantz (1982: 448) discusses Dakota, which suffixes a CCVC reduplicant to show plural agreement on verbs:

(21) hąska + RED → hąska-ska *'be tall'*:

a. *UR for* hąskaska:

C V C C V + C C V C
| | | | |
h ą s k a

b. *Right to left association*:

C V C C V + C C V Ⓒ
| | | | | ⋮ ⋮ ⋮
h ą s k a (hą) s k a

  - Here, following (17c), the reduplicant parses the segments of the copy from right to left since it is a suffix.
  - Since there is nothing to fill in the final consonant slot, it is deleted following (17d).

- If the base is too small, it won't be possible to fill the first C slot in the reduplicant:

(22) šič → šikšič *'be bad'*:

a. *UR for*šikšič:

C V C + C C V C
| | |
ʃ i ʧ

b. *Right to left association*:

C V C + Ⓒ C V C
| | | ⋮ ⋮ ⋮
ʃ i ʧ ʃ i ʧ

This language has an alternation between k and ʧ. Remember that reduplication may serve as the input to other phonological rules.

  - Notice that in this case, since the size of the reduplicant is bigger than the base, the effect looks like full reduplication.

4.4 Infixing reduplication

- Since reduplicants can be prefixes or affixes, it should come as no surprise that nothing stops them from being infixes.
  - This is sometimes referred to as INTERNAL REDUPLICATION.
  - For a lengthy overview, see Broselow and McCarthy 1983.
- Easily the best-known case of this comes from Samoan. This is another case of plural agreement:

(23) *Infixing reduplication in Samoan*:

Sg	Pl	Gloss
no.fo	*no.no.fo*	'sit'
mo.e	*mo.mo.e*	'sleep'
la.ga	*la.la.ga*	'weave'
a.lo.fa	*a.lo.lo.fa*	'love'
sa.va.li	*sa.va.va.li*	'walk'
ma.li.u	*ma.li.li.u*	'die'
pu.no.u	*pu.no.no.u*	'bend'

- Verb stems can have one, two, or three syllables.
  - On mono- and bisyllabic stems, the reduplicant looks as if it's a prefix.
  - But in trisyllabic stems, the reduplicant appears infixed after the first suffix.
- Apparently, this language has a rule that infixes the reduplicant before the final syllable:

(24) RED → …σ-RED-σ $_{Wd}$] / …σσ $_{Wd}$] __

- Assuming this rule feeds reduplication, we have something like the following derivation, where the reduplicant copies the material to its left:

(25) nofo + *RED* → nonofo:

a. *UR for* nonofo:

C	V	+	C	V	+	C	V
|	|					|	|
n	o					f	o

b. *Association to* RED:

C	V	+	C	V	+	C	V
|	|		⋮	⋮		|	|
n	o		n	o	(fo)	f	o

(26) savali + *RED* → sava-va-li:

a. *UR for* savavali:

C	V	C	V	+	C	V	+	C	V
|	|	|	|					|	|
s	a	v	a					l	i

b. *Association to* RED:

C	V	C	V	+	C	V	+	C	V
|	|	|	|		⋮	⋮		|	|
s	a	v	a	(sa)	v	a	(li)	l	i

Katamba (1993: 191) says there's no way of knowing exactly where it is, and says it is before the second syllable. But if that were right, it would mean the reduplicant copies from the left in bisyllabic bases, and from the right in trisyllabic bases. But see also Broselow and McCarthy 1983: 53–55.

- This case is a little bit weirder, in that it copies material from the middle of the word rather than one of the edges.
  - Principle (17c) doesn't really tell us what to do with it.
  - Parsing the copy into the skeletal slots in (26) does not proceed from left to right or from right to left. It starts in the middle.
  - It seems here that what matters is what is next to the reduplicant.

4.5 Prosodic morphology

- The above discussion is fairly mechanical.
  - We look at the data from a reduplication phenomenon.
  - We determine what the form of the reduplicant is.
  - We posit a template associated with that form.
- However, it is worth asking why reduplicants have the shapes that they do and if there are any restrictions on their shape.

- McCarthy and Prince (1986/1996) argue that reduplicants are actually formed of prosodic constituents rather than CV-skeleta.
  - On this view, reduplicants can be 'core' CV syllable, light syllables consisiting of a single mora, heavy syllables consisting of two moras, feet, and prosodic words.
- For evidence of this take, for example, progressive reduplication in Ilokano (Austronesian; Philippines).

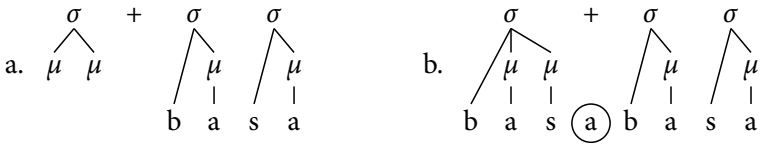
(27) *Ilokano progressive reduplication* (See McCarthy and Prince 1986/1996):

The element *ag-* is some prefix that plays no role in the reduplication.

Base	Prog	Gloss
basa	ag-bas-basa	'be reading'
dait	ag-da:-da?it	'be studying'
adal	ag-ad-adal	'be studying'
takder	ag-tak-takder	'be standing'
trabaho	ag-trab-trabaho	'be working'

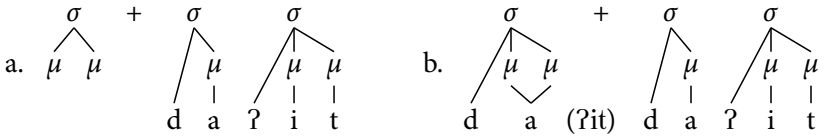
- Notice how difficult it is to define a single CV-template that can accommodate each of these reduplicants.
  - The vowel in the reduplicant lengthens in the absence of a coda consonant, as can be seen in the contrast between [agbasbasa] and [agda:da?it].
  - To accommodate this, we need something like CCV{V,C}, since
- This receives a simple explanation, however, if the reduplicant is just a heavy syllable (*e.g.*, a syllable with two moras).
  - The second mora in a heavy syllable can be associated with either a vowel or a consonant.
  - Onsets are not associated with moras, so full consonant clusters (or a total lack of onset) will be reduplicated.

(28) RED + /basa/ → [basbasa]:



(29) RED + /dait/ → [da:da?it]:

There's a separate question to be asked here about why the /a/ segment in [da:da?it] is lengthened rather than parsing ? as the coda. McCarthy and Prince (1993: 111) note that ? cannot end a syllable in Ilokano.



- I won't go into much more detail here since it requires a more detailed discussion of prosodic structure, but it's good to know this approach because it forms the backbone of the analysis of reduplication in Optimality Theory.
  - See especially McCarthy and Prince (1993, 1995, 1999)

5 Reduplication in English

- Finally, let's look at the unusual case of contrastive reduplication in English.
  - This is typologically interesting, but to my knowledge lacks a totally viable analysis in mainstream approaches to morphosyntax.
- The classic examples of this are given here:

(30) a. It's tuna salad, not SALAD-salad.
b. Do you LIKE-HIM like him?

It is customary to display intonationally focused material in caps.

- Ghomeshi et al. (2004), who label this CONTRASTIVE REDUPLICATION, report a number of attested examples from a corpus search:

(31) a. Is he French, or FRENCH-French?
b. I'm up, I'm just not UP-up.
c. That's not AUCKLAND-Auckland, is it?
d. This car isn't MINE-mine; It's my parents'.
e. Oh, we're not LIVING-TOGETHER living together.

  - It can target elements of different syntactic categories – nouns, verbs, adjectives, particles, proper names, and pronouns.
  - They call this contrastive reduplication since the denotation of the reduplicated element a more sharply delimited, more specialized, range than the focused element usually does.
    - Ghomeshi et al. (2004: 317) argue that contrastive reduplication 'signals that one meaning of [a] word is being contrasted with other possible meanings'.
    - That one meaning is usually the most prototypical one or the most salient referent.
  - This usually contrasts with some (occasionally implicit) alternative definition.
  - This is unusual; the use of reduplication for this sort of function is not well attested in other languages, according to Ghomeshi et al. (2004).

See, however section 2.2 of Ghomeshi et al. 2004, where they discuss very similar phenomena in other languages (including Italian, Spanish, Russian, Persian, and Kinande.

- However, as they note, there are languages that have (non-reduplicative) affixes that perform a comparable function.

(32) *Japanese* ma- *prefixation* (Poser 1991):

Base	Gloss	Prefixed	Gloss
fuyu	'winter'	*mafuyu*	'dead of winter'
siro	'white'	*massiro*	'snow white'
kita	'north'	*makita*	'due north'
kamo	'wild duck'	*magamo*	'mallard'
koti	'flathead'	*magoti*	'the common flathead'

Poser argues that *ma-* 'restricts the denotation of the base form to […] a canonical point that represents the absolute state' or picks out the most common or prototypical member of the class.

- So there is precedent for this sort of morpheme existing in a language.

5.1 The scope of contrastive reduplication

- One of the remarkable facts about English contrastive reduplication, though, is that it appears to reduplicate syntactic constituents.
  - This is a form of full reduplication rather than partial reduplication.
  - Under Prosodic Morphology, full reduplication is typically thought of as introducing a reduplicant the size of a prosodic word (ω).
  - However, examples like (30b) and (31e) show that the reduplicated material in this construction can be a whole phrase, meaning it is limited by syntactic structure rather than prosodic structure.

These are both at least VPs.

- There's some interesting interactions with the morphology here, too, as the reduplicant can be smaller than a word, but morphologically delineated:

(33) a. Look at all the vans on the road. Not vans like ours, but VAN-vans.
b. …In fact, I barely talked to him. Not TALK-talked.

This appears to be reduplicating n^{o} or *v* rather than higher functional material.

- However, they claim that phrasal reduplication is limited to cases of verbs and their clitics or where it targets an idiom:

(34) a. I don't LIKE-HIM like him.
b. You mean you CONSIDERED-IT considered it?

(35) a. OUT-OF-HER-MIND out of her mind
b. SLEEPING-TOGETHER sleeping together

Pronouns in English are often very weak; here, they seem to mean, here, elements after the verb that are prosodically incorporated into the verb.

- They note, at least for the idiom cases, it's not possible to reduplicate a subpart of the idiom, nor is it possible to reduplicate non-idiomatic phrases:

(36) a. *She's OUT out of her mind.
b. *She's out of her MIND mind.

(37) a. *I didn't put it OVER-THE-STOVE over the stove.
b. *We weren't SINGING-TOGETHER singing together.

- However, whatever they mean by "a verb and its clitics" has to include PPs with pronouns:

(38) a. I talked to him that week, but I didn't TALK-TO-HIM talk to him.
b. He didn't GIVE-IT-TO-ME give it to me (he only lent it to me).

- Ghomeshi et al. (2004: 332) ultimately land on the following generalizations:

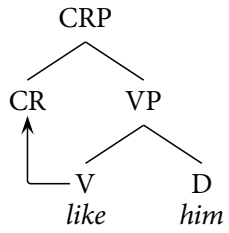
(39) a. Contrastive reduplication targets either an X^{o} or a minimal XP.
b. The scope of contrastive reduplication must include a full (semantically contentful) lexical item that can be contrasted.
c. Aside from this lexical item, the scope of contrastive reduplication may only include non-contrastive functional morphemes.

5.2 A movement analysis

- Ghomeshi et al. sketch a Minimalist analysis where contrastive reduplication is triggered by a head CR° that can take any lexical category as its sister.

Their main proposal is in a different theory of syntax–phonology mapping, so they do not get into the details.

(40)



- They assume that CR° doesn't have any phonology of its own, which the head of the complement of CR° to move to CR°.
  - Since they are working under Minimalism, they assume the Copy Theory of Movement (Chomsky 1995).
  - On this model, moving V° to CR° in the above structure generates an additional copy of V° in CR°.
  - Under the Copy Theory, under the right circumstances, it is possible to pronounce more than one copy of a moved element.

It's not clear to me these circumstances are met in this case, though.

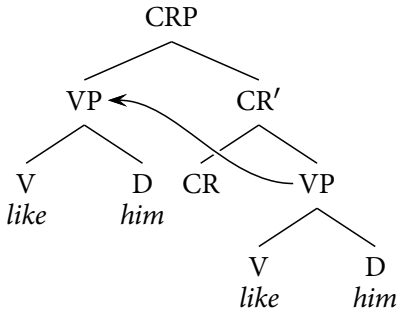
- As they point out, though, this head movement doesn't straightforwardly explain how verbs with object pronouns and PPs get reduplicated, nor can it explain idioms.

5.3 Alternatives

- Other people have taken up this challenge, including Kimper (2008) and Travis (2003).
- Kimper (2008) specifically argues that the facts about phrases can be accommodated by revising Ghomeshi et al.'s (2004) analysis to move phrases to SpecCRP.

It"s worth noting that movement from the complement to the specifier of the same phrase is usually thought to be impossible. See, *e.g.*, Abels 2003.

(41)

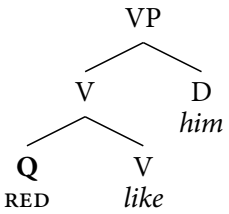


- Travis (2003: 246) points out, however, that there are theoretical issues for movement-based analyses.
  - Adjectives and adverbs are not usually positions to which material can be moved.
  - The types of elements that need to move don't always seem like they are things that can.

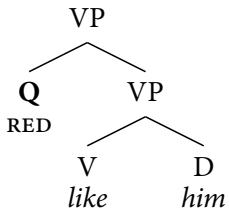
Kimper actually says that that CR should be realized as an adverb or adjective. However, these are adjuncts to VP/NP on most analyses of English, and movement into adjuncts is impossible.

- Travis proposes an analysis without movement in which she proposes that the contrastive reduplication morpheme (which she labels simply **Q**) simply copies the pronunciation of its complement.
  - When **Q** adjoins to X°, it reduplicates X°.
  - Although she doesn't really say, it is reasonably to assume that **Q** might adjoin to the XP it copies, like a normal adjective/adverb.

(42) a. *LIKE-like him*



b. *LIKE-HIM like him*



- There's no discussion about how this copying would happen, though, only that it cannot be accomplished with the same copying operation used by movement.
  - The analysis actually tries to incorporate phonological reduplication, too.
  - **Q** is a stand-in for the affix that introduces RED into phonological derivations.
  - So the implication here is that RED just copies whatever its sister is at the requisite level of representation.
- My hunch is that phonological reduplication and syntactic reduplication should probably not be reduced to the same thing, though…

5.4 Other cases of reduplication in English

- English actually plays host to a number of other reduplicative-(adjacent) phenomena, which Ghomeshi et al. (2004: 309) list:

(43) a. Baby talk reduplication: *choo-choo*, *wee-wee*
  b. Multiple partial reduplication: *hap-hap-happy*
  c. *Schma*-reduplication: *table-schmable*
  d. Rhyme reduplication: *super-duper*, *willy-nilly*
  e. Ablaut reduplication: *zig-zag*, *pitter-patter*, *mish-mash*

- These are not well researched, to my knowledge.

- A particularly interesting case is one that happens concurrently with infixation.
- English has a language-game-esque infixation often called Homeric infixation, which inserts the syllable *-ma-* after an unstressed syllable.

The pattern here is very reminiscent of expletive infixation.

(44) a. *sáxophòne* → *sáxo-ma-phòne*
b. *sécretàry* → *sécre-ma-tàry*
c. *Mìssissíppi* → *Mìssi-ma-síppi*
d. *hìppopótamus* → *híppo-ma-pótamus*
e. *ùnderéstimàte* → *ùnderésti-ma-màte*

- As Yu (2004) discusses, when one tries to infix *-ma-* in a bisyllabic word, part of the word reduplicates to accomodate the infix:

The pattern is actually more complicated than this. See Yu 2004 for a fully discussion of the data.

(45) a. *oboe* → *oba-ma-boe* or *oboe-ma-boe*
b. *tuba* → *tuba-ma-ba* or *tuba-ma-ba*
c. *piggy* → *piga-ma-gy* or *piggy-ma-gy*
d. *purple* → *purpa-ma-ple* or *purple-ma-ple*

- Without getting into the nitty-gritty here, Yu argues that the reduplication happens to satisfy the prosodic requirements of the infix.
  - The infix must follow directly after a foot and precede a syllable (which is why forces it to always be an infix).
  - Placing the infix between the two syllables of these two-syllable words would violate the requirement that it come after a foot (hence **o-ma-boe* and **tu-ma-ba*).
  - The only option that's left is to create another syllable, and English chooses to reuse phonological material that's in the base word.
- Notice that this is also very different from the kinds of reduplication we looked at above.
  - The kinds we saw in the discussion above were all triggered by some morpheme.
  - This, though, seems to be a purely phonological process that happens to make sure the infix can exist inside the bisyllabic word.

Terms

base An element to which an affix attaches.
full reduplication Reduplication that copies a full word or the entirety of the base.
infix An affix placed within a base.
partial reduplication Reduplication that copies only a subset of the segments of the base.
reduplicant The material copied from a base by reduplication, or the affix with contains the reduplicated material.
reduplication A process whereby an affix is realized by copying phonological material from the base it attaches to.
template A series of CV-slots on a skeletal tier introduced by some morphemes.

References

Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Doctoral Dissertation, University of Connecticut.

Broselow, Ellen, and John J. McCarthy. 1983. A theory of internal reduplication. *The Linguistic Review* 3:25–88.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.

Ghomeshi, Jila, Ray Jackendoff, Nicole Rosen, and Kevin Russell. 2004. Contrastive focus reduplication in English (the salad-salad paper). *Natural Language & Linguistic Theory* 22:307–357.

Goldsmith, John Anton. 1976. Autosegmental phonology. Doctoral Dissertation, Massachusetts Institute of Technology.

Haugen, Jason D. 2011. Reduplication in distributed morphology. In *Coyote Papers (University of Arizona Working Papers in Linguistics) – Proceedings of the 4th Arizona Linguistics Circle Conference (ALC 4)*. Tuscon, Ariz.: Coyote Working Papers in Linguistics.

Katamba, Francis. 1993. *Morphology*. New York: St. Martin's Press.

Kimper, Wendell. 2008. Syntactic reduplication and the spell-out of movement chains. Generals paper, University of Massachusetts Amherst.

Marantz, Alec. 1982. Re reduplicaton. *Linguistic Inquiry* 13:435–482i.

McCarthy, John J., and Alan Prince. 1993. Generalized alignment. In *Yearbook of morphology*, ed. Geert Booij and Jaap van Marle, 79–153. Dordrecht: Kluwer.

McCarthy, John J., and Alan Prince. 1995. Faithfulness and reduplicative identity. In *Massachusetts occasional papers in linguistics*, ed. J. Beckman, L. W. Dickey, and S. Urbanczyk, 249–384. GLSA Publications.

McCarthy, John J., and Alan Prince. 1999. Faithfulness and identity in prosodic morphology. In *The prosody-morphology interface*, ed. René Kager, Harry van der Hulst, and Wim Zonneveld, 218–309. Cambridge: Cambridge University Press.

McCarthy, John J., and Alan S. Prince. 1986/1996. Prosodic morphology. Technical report, Rutgers University Center for Cognitive Science.

Moravcsik, Edith A. 1978. Reduplicative constructions. In *Universals of human language*, ed. Joseph Greenberg, volume 3, 297–334. Stanford, Calif.: Stanford University Press.

Poser, William J. 1991. 'Ma'. In *Interdisciplinary approaches to language*, ed. Carol Georgopoulos and Roberta Ishihara, 449–458. Dordrecht: Kluwer Academic Publishers.

Travis, Lisa deMena. 2003. Reduplication feeding syntactic movement. In *Actes du congrès annuel de l'association canadienne de linguistique 2003 / proceedings of the 2003 annual conference of the canadian linguistic association*, ed. Sophie Burelle and Stanca Somesfalean, 236–247. Université du Québec à Montréal, Département de linguistique et de didactique des langues. URL http://homes.chass.utoronto.ca/~cla-acl/2003/Travis.pdf.

Yu, Alan. 2004. Reduplication in english homeric infixation. In *The proceedings of the 34th meeting of the north east linguistic society*, ed. Keir Moulton and Matthew Wolf. Amherst, Mass.: GLSA Publications.