

# Geminates and Weight in Amharic<sup>1</sup>

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## 1. Goals

- Characterize the stress system of Amharic
- Describe adjectival reduplication for noun phrase pluralization in Amharic
- Show that the above properties are conditioned by the existence of geminate codas
- Discuss the theoretical implications of Amharic stress and reduplication as aligning to geminates

## 2. Phonological background of Amharic

- All consonants except /h/ have contrastive geminate alternates
- Geminates distinguish both lexical items and grammatical functions
  - Example: mäwărăd ‘to be embarrassed’  
mäwwărăd ‘to embarrass (someone else)’
- Possible syllable types<sup>2,3</sup>
  - a) (C)(C)V(C)(C)
  - b) (C)(C)VG(G)

## 3. Previous literature on Amharic stress

- “Stress is not prominent in Amharic, though main stress of words is typically audible on stems rather than affixes (though the plural suffix may be stressed), but

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<sup>2</sup> C = consonant, V = vowel, G = geminate consonant, DEF = definite, OBJ = object marker, PL = plural, SG = singular, NONPST = non-past tense, GEN = genitive marker, F = feminine, M = masculine, PROG = progressive, PROS = prospective

<sup>3</sup> It’s true that (b) is a subset of (a); however, the distinction is a relevant one in the analysis at hand.

more so on closed rather than open syllables. There is, however, little research on this topic (Hudson 1997).”

- “In general Amharic has an almost even distribution of stress on each syllable. It is safe to state that the last syllable is not stressed (Leslau 2000).”
- “The syllable preceding a geminated syllable is likely to be stressed (Leslau 2000).”

#### 4. Typical stress pattern in Amharic<sup>4</sup>

- Trochaic, binary feet aligned to the left edge of the word
  - **Two-syllable data**
    1. (mät'.fat)  
'to vanish'
    2. (do.ro)  
'chicken'
  - **Three-syllable data**
    3. (mät.räf).räf  
'to overflow'
    4. (k'o.fi).ja  
'hat'
  - **Four-syllable data**
    5. (män.k'ä).(sa.k'äs)  
'to move (your body)'
    6. (mäf.k'ä).(da.däm)  
'to race'
    7. (t'ä.rä).(p'e.za)  
'table'

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<sup>4</sup> Stressed syllables are underlined throughout this handout in order to distinguish the orthographic stress marker from the ejective marker.

- **Five + -syllable data**

8. (as.da).(ka.käl).ku

'I arranged (my schedule)'

9. (jä.tä).(kä.fä).(ta.win) bir

'the open door'

- Stress patterns are concerned with the word as a whole, with no regard for the place of the stem within a word

- **Stress as non-morpheme dependent**

10. (mä.tʃʰuh)

'to yell'

11. (tʃʰu.hät)

'a yell'

12. (ij.jä).(tʃʰu.hä) näw

'he is yelling'

- **Default stress pattern summary**

- Stress is unrelated to whether a syllable is open or closed, as in (8).
- Stress is initial
- In words with an even number of syllables, stress falls on every other syllable (as expected by binary, trochaic feet)
- In words with an odd number of syllables, the final syllable is extrametrical and we see lapse

## 5. Exceptions to the typical Amharic stress pattern

- Syllables closed by a geminate consonant (either the first or both G's in a GG sequence) attract stress no matter where they fall within a word

- **Geminates attracting stress data**

13. sej.(totʃʃ)

'women'

14. mä.(tʃʃäm.mär)

'to add an ingredient to something'

15. (wiʃ.ʃa).(otʃʃ)

'dogs'

16. (t̥i.säb).(ral.lit̥ʃ)  
'she breaks chairs'
17. tä.(gag.ga).(rat̥ʃ.t̥ʃä).(wal.lit̥ʃ)  
'she will bake them'

- In a constraint-based analysis, we would expect something like the WSP to be undominated:

WSP (WEIGHT-TO-STRESS PRINCIPLE) (Prince 1990):

Assign one violation for every heavy syllable that is not stressed

- Heavy syllables are those containing more than one mora (Hyman 1985, and others)

- **CLASH**

18. (bäl).(lat̥ʃ.t̥ʃih<sup>w</sup>)  
'y'all ate'
19. (ij.jä).(tät).(t'al).(lal).(lat̥ʃ.t̥ʃih<sup>w</sup>)                      näw  
PROG.2.PL.REFL.hate.PSTEM.ALL.2.PL                      AUX  
'y'all are hating each other'
20. (läm).(min).(nät.tä).(mam.mä).(näb.bät)  
'to the one (m) that we trust/believe in'

- **Lapse**

21. as.(däk.kam).wä.(tall)  
'he made her tired'
22. (ij.jä).hej.(dät̥ʃ.t̥ʃih<sup>w</sup>)                      näw  
'y'all are going up (stairs)'  
*as compared to*
23. (ij.jä).(hej.dit̥ʃ)                      näw  
'she is going up (stairs)'

- **Final stress**

24. (tʃ̣a.räs).(wall)  
'he finished'

*as compared to*

25. (tʃ̣a.rä).sätʃ̣  
'she finished'

- **No initial stress**

26. as.(gag.gä).rat  
'he made her bake'

- In a word like  $\sigma.\sigma.\sigma.\sigma_G$ , we'd expect  $(\underline{\sigma}.\sigma).\sigma.(\sigma_G)$ , but instead:

27. ji.(säb.ra).(wall)  
'he will break (the chair)'

28. k'o.(fi.ja.)-(otʃ̣tʃ̣)  
hat-PL  
'hats'

29. a.(zä.ni).(tal.la).hu  
'I will decorate'

30. kä.(gag.gä).(rä.tʃ̣i).läp  
'if she baked for me'

- So, when there is one geminate in a word, feet align to the foot containing that syllable

- Or perhaps a constraint requiring lapses to occur at word edges

- **But when there is more than one geminate in a word:**

31. tä.(gag.gä).rä.(wal.litʃ̣)  
'she will bake it'

32. i.(fäl.li).ga.(tal.la).hu  
'she needs me'

- Foot-formation begins at all geminates simultaneously, moving outward from them and forming trochees

- When no further binary, trochaic feet can be formed, geminateless syllables are left unparsed, and those closed by a geminate form a single-syllable foot

## 6. Summarizing Amharic stress

- Default left-aligned, trochaic, binary feet with no final stress
- Exceptions when heavy syllables, (C)VG(G), are present
  - Heavy syllables are always stressed, even if the result is clash, lapse, final stress, or the lack of initial stress

## 7. Previous literature on Amharic reduplication

- Leslau (1995) describes a partial reduplication pattern that occurs in some adjectives in Amharic:
 

“In the adjectives the 2d radical may be reduplicated and geminated”
- He correctly says that the reduplication denotes a plural noun phrase, but provides no generalization of which words can undergo this reduplication
- Rose (2003) discussed a similar reduplication pattern in verbs, but does not mention adjectival reduplication

### Describing adjectival reduplication in Amharic

- Adjectives agree in number with nouns
- Adjectives are normally inflected with the plural marker when the noun phrase is plural

33. takat̪            sau  
       lazy            person  
       ‘lazy person’

34. takat̪-ot̪t̪      sau-ot̪t̪  
       lazy-PL        person-PL  
       ‘lazy people’

- Adjectives that contain a geminate can additionally use reduplication to mark the plural. Words that do not contain a geminate cannot undergo this type of reduplication

35. rāḍ̣̣ḍ̣̣im sau  
tall person  
'tall person'

36. rä~ḍ̣̣~aḍ̣̣ḍ̣̣im sau-oṭ̣̣ṭ̣̣  
~PL~tall person-PL  
'tall person'

- Words without a geminate cannot use this type of reduplication to mark the plural

37. k'onḍ̣̣o sau  
beautiful person  
'beautiful person'

38. \*k'o~n~anḍ̣̣o sau(-oṭ̣̣ṭ̣̣)

39.	rāḍ̣̣ḍ̣̣im	'tall'	rä~ḍ̣̣~aḍ̣̣ḍ̣̣im	'tall (PL)'
	aṭ̣̣ṭ̣̣'ir	'short'	a~ṭ̣̣~aṭ̣̣ṭ̣̣'ir	'short (PL)'
	tillik'	'big'	ti~l~illik'	'big (PL)'
	tinnif	'small'	ti~n~innif	'small (PL)'
	wuffräm	'fat'	wu~f~affräm	'fat (PL)'
	saffi	'wide'	sa~f~affi	'wide (PL)'
	k'aṭ̣̣ṭ̣̣'in	'skinny'	k'a~ṭ̣̣~aṭ̣̣ṭ̣̣'in	'skinny (PL)'
	addis	'new'	a~d~addis	'new (PL)'
	demmak'	'bright'	de~m~ammak'	'bright (PL)'
	kabbad	'difficult'	ka~b~abbad	'difficult (PL)'
	hajjal	'powerful'	ha~j~ajjal	'powerful (PL)'
	tallak'	'older'	ta~l~allak'	'older (PL)'
	tannaḥ	'younger'	ta~n~annaḥ	'younger (PL)'

## 8. Reduplication summary

- One means of plural agreement on adjectives is internal reduplication of the second radical (root consonant)

- Crucially, only adjectives containing a geminate are allowed to reduplicate, however, the reduplicated radical surfaces as a singleton.
- In other words, geminate codas license reduplication of that syllable

## 9. Possible analyses

- Template analysis: Perhaps the template for plural adjectives is something like  $C_1VC_2VC_2C_2VC_3$ , where  $C_{1,2,3}$  are the root consonants
  - Problem: this template is only attested when the singular form has a geminate  $C_2$
- Syllable reduplication: Ignoring the onset of the first syllable, if there is one, the following VC sequence is reduplicated
  - Problem: this would not account for the difference between adjectives containing a geminate and those that do not
- Segment reduplication: A single (underlyingly moraic) segment is reduplicated.
  - Problem: it is difficult to explain why a segmentally targeted process cares about metric properties like morae
- Mora reduplication: A mora (the geminate coda) is reduplicated and a vowel is inserted between the reduplicated consonant and the base moraic consonant.
  - Problem: this analysis doesn't explain why the reduplicated consonant surfaces as a singleton.

## 10. Theoretical implications

- We can now characterize Amharic stress, and we have added to the literature on Amharic reduplication
- Moraic Theory (McCarthy & Prince 1986; Hayes 1989; Ito 1989) and Weight by Position (Hayes 1989) predict the following:
  - There should be languages where geminates are moraic, making syllables heavy and attracting stress:

“Moraic Theory therefore makes a very strong empirical claim: it predicts that a CVC syllable should always count as heavy if the coda consonant is part of an underlying geminate, even in languages where CVC syllables otherwise count as light (Tranel 1991).”

- This prediction, however, has not been attested in a language (Tranel 1991, Davis 2011)



- Tranel’s Principle of Equal Weight for Codas claims, “Coda portions of geminate consonants behave in the same way as other coda consonants with respect to syllable weight (1991).”

[CVG] [CVC]	Moraic Theory	Principle of Equal Weight for Codas
Heavy Heavy	yes	yes
Light Light	no	yes
<b>HeavyLight</b>	<b>yes</b>	<b>no</b>
Light Heavy	no	no

- However, Amharic is an attested language where geminates act as heavy while other codas do not
  - This evidence is in support of Moraic Theory and not the Principle of Equal Weight for Codas
- This is not to say Moraic Theory is flawless, because in many languages with singleton/geminate distinctions stress and reduplication are not attracted to geminates (Tranel 1991, Davis 2011)
- Perhaps a model like Hyman’s (1985) Weight-Unit Theory best characterizes patterns of syllable weight in the world’s languages
  - Consonants as underlyingly containing a weight unit, while language-specific principles determine whether that weight unit is retained in pronunciation

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