Geminates and Weight in Amharic
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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: mäwäräd ‘to be embarrassed’
  - mäwwäräd ‘to embarrass (someone else)’
- Possible syllable types\(^3\)
  - 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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2 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

3 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

• Trochaic, binary feet aligned to the left edge of the word

  • Two-syllable data
    1. (mät'.fat)
       'to vanish'
    2. (dö.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.käs)
       'to move (your body)'
    6. (mäf.k'ä).(da.däm)
       'to race'
    7. (t'ä.rä).(p'e.za)
       ‘table’

4 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.tʃ'uh)
        'to yell'
    11. (ʃu.hät)
        ‘a yell’
    12. (iːjä).(ʃu.hä) näw
        'he is yelling'

• **Default stress pattern summary**
  o Stress is unrelated to whether a syllable is open or closed, as in (8).
  o Stress is initial
    o In words with an even number of syllables, stress falls on every other syllable (as expected by binary, trochaic feet)
    o 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.(tʃʃtʃʃ)
        ‘women’
    14. mä.(ʃʃ âm.mär)
        'to add an ingredient to something'
    15. (wif.fa).(otʃʃ)
        ‘dogs’
16. (ti.şäb).(ral.lij])
   'she breaks chairs'
17. tä.(gag.ga).(rät].tjä).(wal.lij])
   '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)

  o **Clash**
  18. (bäl).(lat].tjih")
      ‘y’all ate’
  19. (ij.jä).(tät).(t'al).(lal).(lat].tjih")
      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’

  o **Lapse**
  21. as.(däk.kam).wä.(tall)
      ‘he made her tired’
  22. (ij.jä).hej.(dät].t]ih")
      näw
      'y'all are going up (stairs)'
      as compared to
  23. (ij.jä).(hej.dit])
      näw
      'she is going up (stairs)’
• **Final stress**
  24. (ʧ’a.räs).(wall)
      ‘he finished’
      *as compared to*
  25. (ʧ’a.rä).sätʃ
      ‘she finished’

• **No initial stress**
  26. as.(gag.gä).rat
      ‘he made her bake’

- In a word like σ.σ.σ.σ, we’d expect (σ.σ.σ.σ), but instead:
  27. ji.(säb.ra).(wall)
      ‘he will break (the chair)’
  28. k’o.(fi.ja.)-(otʃʃ)
      hat-PL
      ‘hats’
  29. a.(zä.ni).(tal.la).hu
      ‘I will decorate’
  30. kä.(gag.gä).(rätʃi).län
      ‘if she baked for me’

• So, when there is one geminate in a word, feet align to the foot containing that syllable
  o 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.litʃ)
      ‘she will bake it’
  32. i.(fal.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. takatʃ sau
    lazy person
    ‘lazy person’

34. takatʃ-oʃtʃ sau-oʃtʃ
    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. rādʒim sau
   tall person
   ‘tall person’

36. rā~dʒ~adʒim sau-otʃʃ
   ~PL~tall person-PL
   ‘tall person’

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

37. k'onadʒo sau
    beautiful person
    ‘beautiful person’

38. *k'o~n~andʒo sau(-otʃʃ)

39. rādʒim ‘tall’
    a~tʃʃ ‘short’
    ti~l~ilik ‘big’
    ti~n~inn ‘small’
    wu~f~aff ‘fat’
    sa~f~aff ‘wide’
    k’atʃʃ ‘skinny’
    a~d~add ‘new’
    de~m~amm ‘bright’
    ka~b~abb ‘difficult’
    ha~j~ajj ‘powerful’
    ta~l~all ‘older’
    ta~n~anna ‘younger’

   rā~dʒ~adʒim ‘tall (PL)’
   a~tʃʃ ‘short (PL)’
   ti~l~ilik ‘big (PL)’
   ti~n~inn ‘small (PL)’
   wu~f~aff ‘fat (PL)’
   sa~f~aff ‘wide (PL)’
   k’atʃʃ ‘skinny (PL)’
   a~d~add ‘new (PL)’
   de~m~amm ‘bright (PL)’
   ka~b~abb ‘difficult (PL)’
   ha~j~ajj ‘powerful (PL)’
   ta~l~all ‘older (PL)’
   ta~n~anna ‘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 C₁VC₂VC₂C₂VC₃, where C₁,2,3 are the root consonants.
  o Problem: this template is only attested when the singular form has a geminate C₂.
• Syllable reduplication: Ignoring the onset of the first syllable, if there is one, the following VC sequence is reduplicated.
  o 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.
  o 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.
  o 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 (McCarty & Prince 1986; Hayes 1989; Ito 1989) and Weight by Postion (Hayes 1989) predict the following:
  o 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).”

<table>
<thead>
<tr>
<th>[CVG] [CVC]</th>
<th>Moraic Theory</th>
<th>Principle of Equal Weight for Codas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Heavy</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Light Light</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Heavy Light</strong></td>
<td><strong>yes</strong></td>
<td><strong>no</strong></td>
</tr>
<tr>
<td>Light Heavy</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

- 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

**References**


