Internal Reduplication in Tigre
(Rose 2003)

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Seminar
“The Segmental Phonology of Ethiopian Semitic Languages”
Phenomenon

Reduplication in Tigre frequentative verbs:
- Reduplication of exactly one consonant
- Affects the template of the verb
- Can be applied recursively up to three times

Outlook

Analysis: Frequentative is an infix accompanied by output requirements
1. Introduction

2. The Data
   - Intensive Verbs
   - The Frequentative

3. The Analysis
   - Precursor 1: Infix Hypothesis
   - Precursor 2: Template Hypothesis
   - Enriched Infixation
   - Further Restrictions

4. Examples

5. Conclusion
   - Summary
   - How Problems Were Resolved
Observation

Intensive verbs have the same shape as type C verbs: \((C\varepsilon)C_\alpha:C\varepsilon C\)

(1) A: məsəl-aː ‘resemble’ \(\rightarrow\) maːsəl-aː ‘resemble many people’
B: məssəl-aː ‘give examples’ \(\rightarrow\) maːsəl-aː ‘give many examples’
C: maːsəl-aː ‘be diplomatic’ \(\rightarrow\) *

Note

Type C verbs are excluded from this process.
Observation 1

In addition to a shape very similar to the intensive the frequentative involves reduplication of the penultimate consonant.

(2) kətb-əː ‘write’ → kətaːtəb-əː ‘write a little’

wəlləb-əː ‘glance around’ → wəlaːləb-əː ‘glance around once in a while’

Note

This form encodes diminutive, but is called ‘frequentative’, because the same form expresses frequentative in other Ethiopian Semitic languages.
Observation II

The frequentative can be applied to a very wide range of different verbs.

(3) Type C:

<table>
<thead>
<tr>
<th>Biliteral root:</th>
<th>Quadliteral root:</th>
</tr>
</thead>
<tbody>
<tr>
<td>baːrək ‘bless’ → bəraːrək-aː ‘bless a little’</td>
<td>dəŋəgeʃəs’-aː ‘become scared’ → dəngegəʃəs’-aː ‘become slightly scared’</td>
</tr>
<tr>
<td>ɿəff-aː ‘pass by’ → ləfaːfəf-aː ‘pass back and forth’</td>
<td></td>
</tr>
<tr>
<td>Root with glide:</td>
<td>Reduplicated root:</td>
</tr>
<tr>
<td>los-aː ‘mix’ → ləwaːwəs-aː ‘mix a little’</td>
<td>nəknək-aː ‘shake in hysterics’ → nəkənaːnək-aː ‘shake a little’</td>
</tr>
</tbody>
</table>
Observation III

In Tigre this reduplication process can be applied up to three times within the same root.

(4)  
\[ \text{dəgм-aː} \]  \( \rightarrow \) ‘tell, relate’
\[ \text{dəgaːɡəm-aː} \]  \( \rightarrow \) ‘tell stories occasionally’
\[ \text{dəgaːgaːɡəm-aː} \]  \( \rightarrow \) ‘tell stories very occasionally’
\[ \text{dəgaːgaːgaːɡəm-aː} \]  \( \rightarrow \) ‘tell stories infrequently’

Note

- Other Ethiopian Semitic languages have multiple reduplications with different morphemes; Muher and Chaha not at all.

\[ \rightarrow \]  Rose (2003) attributes this to different rankings of the INTEGRITY constraint.

(5)  
INTEGRITY—“No Breaking”  \( \quad \text{(McCarthy and Prince 1995: 124)} \)
No element in \( S_1 \) has multiple correspondents in \( S_2 \).
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Hypothesis

The frequentative is an infix [-Ca:-].
Problem

This hypothesis cannot derive that all frequentatives follow the same template:

\[(6) \quad \text{dəgm-aɨ} \rightarrow \text{dəgaːgəm-aɨ} \quad (*\text{dəgaːgma-aɨ}) \quad \text{‘tell’}\]
\[\text{wələb-aɨ} \rightarrow \text{wəlaːləb-aɨ} \quad (*\text{wəlaːlləb-aɨ}) \quad \text{‘look both ways’}\]
\[\text{baːrək-aɨ} \rightarrow \text{bəraːrək-aɨ} \quad (*\text{baːraːrək-aɨ}) \quad \text{‘bless’}\]
Hypothesis
The frequentative has its own ‘Type D’ template.
The Analysis
Precursor 2: Template Hypothesis

Problem I
The frequentative template looks very similar to the template of quadliteral roots. This pattern would be just accidental.

(7)  
Quadliteral: məskər-ə:  li-məskitr
Frequentative: dəgərəm-ə:  li-dəgresm

Problem II
One would need separate templates for triliteral and quadliteral roots:

(8)  
Triliteral: CəCja:CjəC-
Quadliteral: CəCj;a:CjəC-

Problem III
It would be very difficult to account for the repetition of reduplication.
Hypothesis

The frequentative is an infix in the regular verb. The output form must meet the following requirements:

(9) a. Template match  
b. Root realisation  
c. Frequentative realisation

Note

This rule refers to the regular verb as opposed to the root, so that other processes such as other reduplications can apply beforehand.

(10) a. /nk/ (underlying)  
b. nəkənək (total reduplication)  
c. nəkəna:nək (frequentative)


Template Match

The output of a frequentative must conform to the following shape:

(11)  

Perfective: \( C\oplus CC\oplus C \)

Imperfective/jussive: \( C\oplus CC\ddagger C \)

Question

Where does the template come from?

Answer

- There is no explicit ‘frequentative template’
- ‘The frequentative makes use of pre-existing templates used for other verb forms’ (Rose 2003: 120)
- The choice of template is based on the number of consonants in the root.
Root Realisation

All root consonants must be present in the frequentative.

(12) Regular Frequentative

/dwr/  dor-aː  dəwaːwər-aː
Frequentative Realisation

Realise the reduplication so that frequentative can be distinguished from intensive forms:

(13)  dəŋəs’ ‘become scared’  →  dənaːɡəs’ ‘become very scared’
     →  dənəɡaːɡəs’ ‘become slightly scared’
Question I
Why does the frequentative reduplicate only one consonant?

Answer
There are OT constraints penalising word-internal reduplication:

(14)  a. **CONTIGUITY**
      The root forms a contiguous string.
    b. **MORPHOLOGICAL EXPRESSION**
      Reduplication must be realised.
    c. **MAX_{B−R}**
      Every segment in the base has a correspondent in the reduplicant.
### Example

<table>
<thead>
<tr>
<th>I: gərəf</th>
<th>RED+a:</th>
<th>MORPHEXP</th>
<th>CONTIG</th>
<th>MAX&lt;sub&gt;B−R&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. gərəːrəf</td>
<td></td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. gərfaːrəf</td>
<td></td>
<td>***!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. gərəfərəf</td>
<td></td>
<td>**<em>!</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. gaːrəf</td>
<td>!</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
</tbody>
</table>
Question II

How do we know that reduplication is leftwards?

Answer

- Rightward reduplication would involve infixation of a non-syllable [aːC] before the final vowel.
- There are hints in the behaviour of other Ethiopian Semitic languages.

(15) a. Tigrinya gemination: bəddəl-ə → bəddaddəl-ə
    b. Chaha devoicing: səβəpəɾə → səβəpəɾə
Observation I

Two glottural consonants may not co-occur if they are separated by just a vowel:

(16) Type A Causative

a. k’ətla: ?a-k’ətla: ‘cause to kill’
b. ḥadga: ?aṭ-ḥadəga: ‘make leave’

Observation II

Reduplication in Frequentatives is not affected by this:

(17) baʔasa: ‘fight’ → baʔaʔa:ʔa: ‘fight a little’
     → baʔa:ʔa:
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(18) /gərəf RED+aː/ | Template Match | Root Realisation | Frequentative Realisation
--- | --- | --- | ---
✓ a. ərəaːɾəf | ✓ | ✓ | ✓
b. ərəaːrrəf | * | ✓ | ✓
c. əʔaːɾəf | ✓ | ✓ | *
d. ərəaf | * | * | ✓
(19) \(/\text{dëngës'}/\text{ RED}+a:/\)

<table>
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<tr>
<th>Template Match</th>
<th>Root Realisation</th>
<th>Frequentative Realisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ a. dënegâgies’</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>b. dënaiges’</td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>c. dëna:nëgës’</td>
<td>*</td>
<td>*</td>
</tr>
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Data

(20) a. Reduplication: \( \text{baːɾək} \rightarrow \text{bəɾaːɾək} \)
b. Similarity to intensive: \( \text{dəŋəs’} \rightarrow \text{dənaːɡəs’} \)
c. Changing template: \( \text{kətəb} \rightarrow \text{kətaːtəb} \)
d. Recursive application: \( \text{kətaːtəb} \rightarrow \text{kətaːtaːtəb} \)

Analysis

- There is a [Caː] infix
- The infix imposes extra requirements onto the surface form
- The reduplication is aware of the regular form of the verb
Conclusion How Problems Were Resolved

Infix Problem: The Verb Templates
Solution: The Template Match requirement overrides the verb template

Template Problem I: Similarity of Frequentatives with Quadliterals
Solution: ‘The frequentative makes use of pre-existing templates used for other verb forms’ (Rose 2003: 120)

Template Problem II: Multiple Templates for One Form
Solution: All verbs use the same mechanism for choosing templates.

Template Problem III: Recursive Reduplication
Solution: The whole infixation-reduplication cycle is simply repeated.