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**A DESCRIPTIVE ANALYSIS OF THE NATURE AND FORMATION OF
AMHARIC INTERNAL REDUPLICATION**

A Copy and Association Model

WONDWOSEN KUMSA SORESSA

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GLOSSING ABBREVIATIONS AND SIGNS

AUX-Auxiliary

CONJ-Conjunctive

CONT-Continuous

DEF-Definite

DISTR-Distributive

FUT-Future

IMP-Imperative

INT-intensive

IPFV-Imperfective

ITR-Iterative, Repetitive

JUS-Jussive

NMLZ-Nominalizer/Nominalization

PART-Particle

PASS-Passive

PL-plural

POSS-possessive

PRCS-Process

PREP-Preposition

PRF-Perfective

PROG-progressive

PRS-present

RECP-reciprocal

SGF-Singular Feminine

SGM-Singular Masculine

VN-Verbal Noun/Nominalizer

VN-Verbal Noun

SIGNS

→- **Unmarked left to right association**

←- **Marked right to left Association**

↑- **Skeleton-driven linking**

↓- **Phoneme-driven linking**

DEFINITION OF KEY TERMS

BASE – *part of the stem which provides the phonemic material for association with the CV template skeleton. In the Amharic case, this is the part that is found immediately to the right of the infixed CV template skeleton or the coda of the closed syllable (i.e. both a heavy or light) of the phonemic copy.*

CLOSED SYLLABLES – *a syllable with a coda*

CONDITION – *A set of rules governing the principle of linking or associating a phonemic melody from the phonemic copy of the stem to the CV skeleton template.*

HEAVY SYLLABLE – *This is a syllable with branching rhyme. All syllables with a branching nucleus (long vowels) and geminated codas are considered heavy. Amharic /CVC.C/ is considered heavy.*

INFIXATION – *A word formation process of inserting morphophonological material inside the stem. The term internal reduplication is used in this thesis to refer to infixation process.*

INPUT- *The nonreduplicated, regular or plain nominal or verbal stem.*

LANDING SITE – *The split rhyme of the closed syllable (either heavy or light) of the stem where the CV template skeleton is infixed.*

LIGHT SYLLABLE - *This is a syllable with non-branching rhyme (a short vowel) or a singleton coda. Amharic /CVC/ is light.*

LINKING – *The process of associating a phonemic melody from the phonemic copy of the stem to the empty CV template skeleton based on certain conditions.*

MARKED – *Indicates a direction of linking where phonemic melodies from the phonemic copy of the stem are linked non-conventionally. The conventional direction of linking is from leftmost melody to the rightmost for prefixes and from the rightmost to the left for suffixes. When the linking becomes from the leftmost to the right for suffixes and from the rightmost to the left for prefixes, it become marked linking.*

NORMAL APPLICATION – *The application of phonological rules in their expected, natural environment.*

OPEN SYLLABLE – *a syllable without a coda.*

OVERAPPLICATION – *the application of phonological processes outside of morphophonological context.*

PARTIAL REDUPLICATION – *The process of copying part of the stem to express different grammatical contrasts.*

PHONEMIC COPY – *The whole part of the stem excluding the part to the left of the infixed CV template skeleton which is the source for all the phonemic material for linking and association. This part of the stem may contain heavy or light syllables.*

PHONEMIC MELODY- *This is a phoneme with [+or-] syllabic characteristic in the phonemic copy of the stem which is linked and associated by the CV templatic skeleton.*

REDUPLICANT – *this is the reduplicated or copied, either partly or totally, segment of the stem having its own templatic shape and affixed to the stem expressing grammatical contrasts. This, in the case of Amharic, is the CV reduplicant: a linked [-SYLLBIC] phonemic melody and a prespecified [+LOW] vowel, /a/.*

REDUPLICATION – *A morphophonological process of copying part or whole of the stem to express certain grammatical contrasts.*

SYLLABIC – *distinctive feature of phonetic segments which differentiates their role as constituting a syllable peak or taking the place of a nucleus or not. Thus, Consonants are [-SYLLBIC], while vowels are [+SYLLABIC]*

TEMPLATE SKELETON - *A CV template which is infixed to the stem and later associates or links phonemic melodies and forms a full-fledged morphophonological element. This, in the case of Amharic, is an empty skeleton with a CV shape and is infixed to the left of the base.*

UNDERAPPLICATION - *the failure to apply of phonological processes in their morphophonological context.*

UNMARKED – *A conventional direction of linking phonemic melodies from the phonemic copy to the reduplicant skeleton template (refer to Marked above).*

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ABSTRACT

The study analyzed and tested the nature and formal structure of Amharic (an Ethio-semitic language) internal reduplication against Copy and Association model (CAM). (Marantz,1982) Amharic is the official working language of the country and the de facto lingua franca for trade and communication between different communities of the country. A systematic and theory based analysis of the formation of Amharic internal reduplication, which is a morphophonological process of copying part or whole of the stem to mark grammatical or semantic contrast, is not conducted in this language. This study can be considered the first of its kind with respect to its approach of testing the formal structure of Amharic reduplication against a model. The corpus was collected mainly from grammatical, lexicographic, ethnographic and literary (i.e. primarily novels) texts. The study employed Alec Marantz`s “Template Association” model which specifies that reduplication is an affixation process with its own templatic skeleton. The only thing unique about it is the copy and linking of phonemic melodies from the copied syllable of the stem to the reduplicant skeleton. (Marantz, 1982) He introduced four conditions governing the proper association of phonemic melodies from the phonemic copy of the stem. Based on this assumption, the study has analyzed Amharic internal reduplication and draw the following conclusions: Amharic internal reduplication is an infixation process with a distinct template skeleton of /CV/ structure; the CV reduplicant skeleton template is infixated to the left of the base and uses the rhyme of closed syllables (both heavy and light, but usually heavy ones) as a landing site and the CV template skeleton, using the four Conditions in Marantz (1982), associates a [-SYLLABIC] phonemic melody from the phonemic copy of the stem to the C slot of the template skeleton and every unassociated phonemic melodies from the phonemic copy of the stem are discarded; the peculiar feature of this CV skeleton template in Amharic is the prespecification of the [+SYLLABIC] phonemic melody where the V slot is always occupied by a [+LOW] phonemic melody, /a/, which takes priority over other phonemic melodies in the stem.

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CHAPTER ONE: INTRODUCTION

The Language

Amharic, which is one of the most important languages of Ethiopia, belongs to Transversal South-Ethio-semitic group of the Afro-Asiatic language phylum. According to the 2007 population census Census (2008) report¹, there are around 22 million Amharic native speakers and an additional 7 million second language speakers (Grimes, 2003). Amharic has the greatest number of speakers, only second to Arabic, among the Semitic languages of the world. (Hayward, 1999) It is the official working language of the federal government and the de facto lingua franca of the country. (Meyer & Richter, 2003)

The investigation of the major dialectal variations and isoglosses of Amharic are scanty. The available literature identifies four major dialects of Amharic: Gojjam, Gonder, Shewa and Wollo. Although the isoglosses and internal dialectal variations are hitherto not clearly established, the literature agrees on the mutual intelligibility among the dialects of this language. (Baye, 2016)

The first written attestation of Amharic (using the ancient Ethiopic script) goes back to the 13th century royal praise songs, or “panegyrics”, composed for Emperor Yikuno Amlak. (Meyer, 2006) Since Ludolf (1698), which is the first grammatical exposition on Amharic, and especially from the middle of 19th century onwards, European scholars like Isenberg (1841), Cohen (1939), Bender (1974), Praetorius (1970) and in middle and late 20th century scholars like Bender and Fulass (1978), Olga (1988) (1994), Baye (1995) and Leslau (1995) have contributed to the documentation and description of Amharic.

¹ The numbers of native speakers are the results of the 2007 national census report published by the central statistical agency, but unofficial and unconfirmed international economic and other reports published since then put the number of native speakers of Amharic up to 25 million.

Problem and hypothesis

The amount and depth of linguistic literature investigating the grammatical and semantic contrasts expressed by reduplication in Amharic is far from satisfactory. Most of the descriptions (i.e. Rose, (2003); Unseth, (2002); Sande, (2014, 2015)) are too limited and specific to count. This study can be considered the first of its kind in its approach to a theory guided descriptive analysis of the formal structure of reduplication where it hypothesizes, following Marantz (1982), that reduplication formation is just an affixation process.

Objectives and scope of the study

This study attempts to investigate the nature and structural formation of partial reduplication in Amharic. Thus, a specific semantic category or grammatical function of reduplication is not singled out for the analysis. Alec Marantz (Marantz) sees reduplication as a simple affixation process, which is not different from other morphological word formation processes. He illustrated the linking of phonemic melodies from the stem through four conditions and the under- and overapplication of phonological rules. These under- and overapplication of phonological rules in reduplication formation are not problematic in Amharic, for I did not recognize any specific phonological rules being under- or overapplied on the reduplicated word from which is a part or not a part of the regular morphophonological rule of the language. Thus, the following study exclusively attempts to use these four conditions against the Amharic data and test whether reduplication is a simple affixation process or not and show that the four conditions capture the copying and linking of phoneme melodies in Amharic.

The type of lexical stems (i.e. verbal and nominal, mainly adjectives) which are employed for this study are those stems which either allow or don't allow gemination of their medial or final radical. Thus, both stems having heavy syllables and those which don't are of concern here. The latter are considered relevant for this study since they still undergo an internal or infixing CV reduplication process without possessing a geminate radical. The forms of the verbal stems can be perfective or imperfective or verbal nouns, but they are usually the third person singular feminine or masculine form of their perfective stem (i.e. which in this case is the default citation form) and nominative singular forms of the nominal stems will be used. Though gemination, weight and reduplication are very much interconnected in Amharic which consequently makes a geminated syllable a stressed one, the default stress pattern of the language apply to those without gemination (refer to The phenomenon of stress as analyzed by various scholars for detailed discussion on Amharic stress)

Significance

I hope the current study will contribute in many aspects. It can be taken as a documentation and description of grammatical information on reduplication in this language. It can stimulate further research on the topic and also be of use for future comparative studies for typologists who are interested in the general and specific nature of reduplication formation in the Ethiopian linguistic area.

CHAPTER TWO: MORPHOPHONOLOGY OF AMHARIC

This section of the thesis will present a brief and introductory description of the general grammatical description of the language.

Phonology of Amharic

Phoneme Inventory of Amharic

Amharic has 27 consonants and 7 vowel phonemes. Mulugeta (2014) The occurrence of /p/, /pʰ/ and /v/ are restricted to loan words from the European languages, particularly Greek and English. The labialization of velars, alveolars and labials is a typical Ethio-Semitic feature observed in Amharic as well like for instance, [kʷ]² in [kʷätt`ärä] “count”, the [tʷ] in [tʷat] “morning” and the [bʷ] in [bʷambʷa] “plumb”. The following table will present the consonant phonemes of Amharic:

	Labial	Labio-dental	alveolar	Post al-veolar	Palatal	Velar	Glottal
Obstruent							
Plosive	(p) ³ b		t d		tʃ dʒ	k g	ʔ
Ejective	(pʰ)		tʰ		tʃʰ	kʰ	
Fricative		f (v)	s z	ʃ ʒ			h
Sonorant							
Nasal	m		n		ɲ		
Tap			r				
Lateral			l				
Glide	w				y		

Table 2 1: Consonant phonemes of Amharic

Vowel length is not phonemic in Amharic although it can arise morphophonemically, i.e. across morpheme boundaries. (Meyer, 2012) (Leslau, 1995) For instance:

² The representation used in this thesis is predominantly phonemic and they will be presented normally without double slashes (/ /), except when examples are cited as part of a text or a paragraph. When the necessity arises to describe certain allophonic details, a phonetic representation will also be employed, and they will be presented with an open bracket ([])

³ The phonemes in the parentheses are found in loan words.

(1)

- | | |
|---|---|
| a. [näyi-a] näyaa ⁴
Come-3 rd SGF
“come” | b. [biy-i indzi] biy <i>i</i> indzi
eat-3 rd SGF PART
“eat” (to remind a guest his/her feast) |
|---|---|

The vowels written /i/ and /ə/ are often represented by the symbols /ɨ/ and /ä/, respectively. Scholars like (Leslau, 1995) employs /ə/; Baye (2006) /ɪ/, Sande (2014); Mulugeta (2014) and Meyer (2012) /i/ for the close, central unrounded vowel. And in most literature (like in (Baye, 2006); (Leslau, 1995); Meyer (2012) the symbol for the close-mid, central unrounded vowel is /ä/. Still there are others like Mulugeta (2014) who use the symbol /ə/ for this vowel. But here I use /i/ for the high, central unrounded and /ä/ for the mid, central unrounded vowel (i.e. the schwa). I will not employ the vowel symbols /ɨ/ and /ə/ unless only in direct quotations from other sources. The mid central vowel /ä/ and the high central /i/ have a very restricted distribution. The first one occurring medially and finally and the latter initially and medially. The high central vowel, i.e. /i/ functions as an epenthetic vowel. Look at the following example for instance:

(2)

- | | |
|--|------------------------|
| a. b(i)l-a
eat:PRF-3 rd SGM
“eat” | b. (i)sport
“sport” |
|--|------------------------|

⁴ I will employ the Leipzig standard glossing rules for representing grammatical information which was last updated in May 31, 2015. The glossing is an interlinear morpheme by morpheme correspondence. The glossing convention is not used for data cited from other authors. (use the following link for easy access of the symbols: <https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf>)

The following table will present the vowel phonemes of Amharic.

	Front	Central	Back
High	i	ɨ	u
Mid	e	ä	o
Low		a	

Table 2 2: Vowel phonemes of Amharic

Gemination

Gemination is a very common process in Amharic both lexically and grammatically. Sande (2014) for instance, in example 3 below, demonstrates the grammatical function of gemination:

(3)

Verbal nouns	Translation
a. mämtat (Active)	“to hit something or someone”
b. mämmätat (Passive)	“to be hit by someone or something”
c. mäblat (Active)	“to eat”
d. mäbbälat (Passive)	“to be eaten”

The writing system of Amharic (i.e. Ge`ez Script) does not represent gemination. Thus, readers must rely on grammatical and contextual clues. All the consonant phonemes, except the glottal stop /ʔ/ and fricative /h/, can be geminated. (Leslau, 1995; Sande, 2015) Moreover, word initial gemination is not observed in the language though word final geminations are allowed (look at example 4 below). This is both the case when the stem is mono- or polysyllabic and when it occurs stem medially, the syllabification rule forces it to break into two syllables (i.e. the preceding and following). For instance:

(4)

Word final gemination

- a. idʒdʒ⁵
hand
“hand”

⁵ Vowels are part of nominal stems in Amharic and in most of the Semitic languages.

- b. set-oçç
 woman-3rd.PL
 “women”

from (Sande (2014, p. 4)

Syllable final geminations or geminated codas can sometimes be optional, due mainly to stylistic preferences and phonological rules (mainly assimilation with the following consonant), like for example the phrase “you will not break” can be alternatively uttered as [att.(i)⁶säb.rim] or /ass.äb.rim/ or /at.säb.rim/. Moreover, Gemination is contrastive (phonemic) in the sense that minimal pairs can be distinguished. The contrastive gemination can be either word medial or final, but not initial. For instance:

(5)

Minimal Pairs

- | | | |
|--------------------------|----|----------------------------|
| a. gä.na “not yet” | vs | gän.na “christmas” |
| b. wa.na “swimming” | vs | wan.na “chief” |
| c. a.lä “he said” | vs | al.lä “there is” |
| d. näç` “one who plucks” | vs | näçç` “white” ⁷ |

Gemination is also a major criterion for determining verbal types in Amharic. Thus, based on the presence and absence of gemination of the penultimate or antepenultimate root radicals, Amharic distinguishes four types of verbs: Type A, B, C and D. For instance, Type A verbs have a geminated radical only in the perfective, but Type B verbs in all their conjugation patterns (i.e. Perfective, Imperfective and Imperative/Jussive). Many of the bi- and triradical verbal roots of Amharic belong to these two verb types (this will be discussed further below in Amharic Morphology)

⁶ An epenthetic vowel

⁷ This is the only minimal pair I came up with having a geminated and singleton syllable final contrast.

Syllable and Syllabification in Amharic

The minimal syllable in Amharic has a (C)V structure. For instance:

(6)

(ʔ)a.l-ä

say:PRF-3rd.SG.M

“he said”

Amharic syllable structure can be represented as follows: (C)V(CC).

(Leslau, (1995, p. 41); (Sande (2014))

The consonant in the coda can represent a single (/lidʒ/, “child”) or geminated (/idʒdʒ/, “hand”) or a cluster of consonants (/birkʔ/, “unique”) arranged according to the sonority hierarchy where the following consonant in a coda is always less sonorous than the preceding or in some occasions equally sonorous with the preceding. (Meyer (2012)). Though, syllable initial consonant clusters like /bla/, “eat :IMP” and /gza/, “buy :IMP” exist in Amharic, they only surface in rapid casual and informal speech and the epenthetic high central vowel (i.e. /i/) in all other cases dissolve the sequence.

Amharic words can be comprised of only a single syllable or multiple syllables. The syllabification rule does not allow two identical consonant phonemes (geminate)⁸ to occur in the same syllable, unless and otherwise it appears word finally. Thus, when a gemination occurs word medially, the second half of the geminated consonant phoneme must be syllabified with the following syllable resulting a CVC syllable structure in the preceding syllable.

⁸ The language, however, do not distinguish long vowels at all. But, vowel length can relate to special intonation (Leslau, 1995) for instance, a focus in “doing” in the following statement :

sira-n bāʔagbaβu mä**sraat**
Job:ACC Properly to work:VN
“DOING a job properly”

General Observation on Amharic Stress

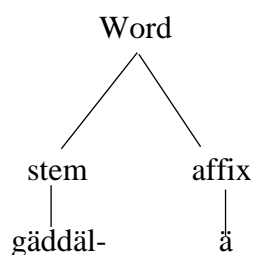
Before presenting the analysis of stress in Amharic by different scholars, the following section will introduce few points on the different use of terminologies, syllabification strategies and method of analysis of stress employed by various scholars.

The phenomenon of stress as analyzed by various scholars

Let me first point out the various terms employed to refer to stress and the different approach of analyzing stress. Alemayehu seems to interchange “High pitch” and “accent” to describe stress in Amharic. He implies a significant similarity of usage between the two terms when he stipulates, “... if we assume accent to be expressed in terms of high pitch...” Alemayehu (1987, p. 23) Leslau (1995) and Ullendorf (1955) has used the term “accent” and “stress” interchangeably and Leslau (1995) never mentions pitch when discussing lexical stress. However, Sande and Hedding (2014 and 2015) used consistently the word stress throughout their analysis of lexical stress in Amharic. Thus, note that whenever I use these terms in the following paragraphs, it is meant to reproduce what the authors have used.

Alemayehu (1987) employed Selkirk’s (1982) notion of “*the syntax of words*”⁹ to classify the verb into its constituents. In this framework, words are treated in the same way as phrases (or sentences). Alemayehu’s specific strategy to codify Amharic words and analyze stress is to make a distinction between the stem and its affixes, specifically prefixes and suffixes. Since, Alemayehu (1987) believes affixes are extrametrical and don’t participate in stress alignment, he used the stem as a basis for analysis of stress, and therefore the exclusion of affixes from his syllabification follows from this assumption. It is at this particular juncture that his syllabification strategy differs fundamentally from Leslau’s (1995), Sande and Hedding (2014 and 2015) and mine. The following example will demonstrate the above observation:

Let me take the stem /gäddälä/ and show how Selkirk’s “*the syntax of words*” is used by Alemayehu:



⁹ This is also the title of the book by Selkirk (1982)

(7)

gäd.däl-ä

kill:PRF-3rd.SG.M

He killed

Alemayehu syllabifies this stem as /gäd.däl-ä/ which in his case is a bisyllabic stem (note that: the person and gender marking morpheme is not syllabified) whereas I syllabify this stem as /gäd.dä.lä/, which now essentially is a trisyllabic stem. Thus, his generalization concerning the position of stress in Amharic verb stems should be considered on this assumption. Hence, what he refers to as a “penultimate will be an “antepenultimate” in my and Sande and Hedding`s (2015) syllabification.

The style of syllabification and representation of stress among these sources (i.e. Alemayehu (1987), Sande and Hedding (2014 and 2015)) are fundamentally different. Alemayehu uses a conventional acute accent (´) sign on the vowel of the stressed syllable while Sande and Hedding prefer to underline the whole stressed syllable.

Let me now start my review of lexical stress in Amharic.

Stress in Amharic

Amharic is not a tone language in a sense that tone is not used to distinguish lexical and grammatical meaning. Nor it is a pitch-accent language, for the prominence of a syllable can be modified by intonational patterns and it does not have morphologically specified syllable ultimately linked with prominence (Alemayehu, 1987) . According to the same source, Amharic can be characterized as intonational (or stress accent) language since it allows only for one prominent syllable per-word or per-accentual unit and it is syntagmatically contrasted as, “... there are no words with adjacent prominent syllables at all” (1987, p. 22)

Stress in Amharic is indicated phonetically by a high pitch (Alemayehu, 1987) (Sande & Hedding, 2014) and intensity (Sande & Hedding, 2014). It is connected with the stem, not with any of the affixes (Leslau (1995); Alemayehu (1987); Sande and Hedding (2014)) . Thus, affixes are stress neutral (i.e. inherently unstressed) in Amharic (Alemayehu (1987, p. 29))

Nature and Position of Stress

Amharic does not have a morphologically specified syllable which is connected with stress (Alemayehu (1987); Ullendorf (1955)) although segmental features like syllable final gemination are determinants of stress in Amharic stems. This is further complicated by the nature of pitch pattern in Amharic which is altered by intonational patterns. When a typical trisyllabic word is used with a single type of yes/no question intonation, the stress falls on the penultimate syllable, but when the same word is used in a listing or series, the stress falls on the ultimate syllable. This is further attested in Ullendorf (1955) who observed the instability of the position of accent on Amharic stems.

Despite the above listed problems in identifying the position of stressed syllable, we can determine its location by considering a citation form of the stem. Although scholars differ in their identification of the location for stress (see discussion below). Amharic, according to Alemayehu (1987), has a one-prominence per word restriction and the location of the prominent syllable is predictable.

Nominal Stems¹⁰

Though the literature do not agree in locating the stress in bisyllabic and polysyllabic stems, the following seems an accepted pattern.

Bisyllabic

Alemayehu (1987) and Leslau (1995) agree on the assertion that the location of stress in disyllabic nominal stems is on their penultimate syllable.

For instance:

(8)

- a. 'dab.bo “bread”
- b. 'mäs.kot “window”
- c. 'wäm.bär “chair” (from Alemayehu, (1987) and Leslau, (1995))

¹⁰ The nominal (adjectives and nouns) stems used in this thesis are those which are in their nominative forms and are listed as lexical entries in the basic dictionaries of the language.

Polysyllabic Stems

But the two authorities differ in their location of stress on trisyllabic and quadrisyllabic stems. Alemayehu (1987) places stress on the antepenultimate syllable for tri- and quadrisyllabic stems. In contrast, Leslau (1995) after invoking the difficulty of determining a specific location for trisyllabic stems as the position varies, he places the stress on the penultimate syllable of quadrisyllabic stems. Let me use examples from both authorities:

	Trisyllabic Stems	Meaning	Quadrisyllabic Stems	Meaning
Alemayehu (1987)	/ˈsa.mu.na/ «soap»	“soap”	/zä. ˈnä.zä.na/ “pestle”	“pestle”
Leslau (1995)	/ˈsa. mu.na/ “soap”	“soap”	/zä. nä. ˈzä.na/ “pestle”	“pestle”
	/tä. ˈrä.käz/ “toe”	“toe”		

Table 2 3: Position of stress in Amharic nominal stems

Verbal stems¹¹

Leslau (1995) has said little about the location of stress in verbal stems, except stressing the fact that syllables¹² preceding a geminated syllable gets stressed and reassignment of stress triggered by particles and clitics Leslau (1995). Alemayehu (1987), in contrast, has attempted to locate the position of stressed syllables in verbal stems. Let me present these distinctions of stress locations:¹³

¹¹ Most of the verb stems under investigation are those which allow gemination of their root radicals in their perfective forms (i.e. type A, B and C), but also those which don’t allow it, but still undertake internal reduplication are of concern. This thesis will specifically employ forms of verbal stems that are default or citation forms of the perfective 3rd SG.M. These forms are derivative of the root radical by infixing vowels carrying aspectual information and a suffix with other inflectional categories.

¹² Note that his syllabification of verbal stems seems to be different from what Sande (2014) and the one used in this thesis. For instance, he indicated the stress on the rhyme vowel just preceding the geminated coda, /fəlləgə/, when reduplicated as /fəlləlləgə/. Thus, it seems the antepenultimate syllable, which is the landing site for my study and for Sande (2014) as well, is an open syllable syllabified as: CV.CCV.CV. But, for the current study this syllable is a closed one and is syllabified as: CVC.CV.CV. Leslau has used a bold sign on the vowels to indicate stress.

¹³ Note that: for the discordance of the rendition of the terms penultimate and antepenultimate by Alemayehu (1987), Sande and Hedding (2014) and me refer to the discussion in The phenomenon of stress as analyzed by various scholars

Bisyllabic stem (Perfective and Imperfective)

The penultimate syllable carries the stress. This works for the active and passive distinction as well. For instance:

(9)

Active	Passive ¹⁴
a. 'gäd.däl-ä kill:PRF-3 rd .SG.M “he killed”	tä-'gäd.däl-ä PASS-kill-3 rd .SG.M “he was killed”
b. 'fäl.läg-ä want:PRF-3 rd .SG.M “he wanted”	tä-'fäl.läg-ä PASS-want-3 rd .SG.M “he was wanted”

Alemayehu has stipulated also that inflectional morphemes do not alter the location of stress in these verbal stems for instance:

(10)

ti-'fäl.lig-al-äçç
PRS-want-AUX-3rd.SG.F
“She wants”. (Ibid,1987)

Trisyllabic (perfective and imperfective stems)

The trisyllabic stems assign the stress on the penultimate syllable. This distinction, like the above verb stem, works both for active and passive. For instance:

(11)

a. Gä.'läb.bät'-ä overturn:PRF-3 rd .SG.M “it/he overturned”	tä-gä.'läb.bät'-ä PASS-overturn-3 rd .SG.M “it/he was overturned”
---	--

The addition of prefix and suffix morphemes does not alter the location of stress in these stems. Look the following example, for instance:

¹⁴ The distinction as active and passive is used to show the stress neutral effect of affixes in Amharic.

(12)

tig-gä. 'läb.bät'-all-äçç

FUT-overturn-AUX-3rd.SG.F

“she will be overturned”

Though prefix and suffixes appear to be neutral in reassignment of stress in verbal stems, the same cannot be attested for infixes. Alemayehu (1987, p. 29):

Root	Stem	Infix
√abbr	'säb.bär-ä break:PRF-3 rd .SG.M “he broke into pieces”	sä~'ba-b.bär-ä break:PRF~INT-3 rd .SG.M “he broke several times”
√mnzr	mä.'näz.zär-ä change:PRF-3 rd .SG.M “he changed”	mä.nä~'za-z.zär-ä change:PRF-INT-3 rd .SG.M “he changed all”

Table 2 4: Stress reassignment in Amharic

The explanation provided for the stress neutrality¹⁵ of prefixes and suffixes according to Alemayehu (1987) is because the stress assigning rule does not include prefixes and suffixes as part of the stem proper in its computation while it does for infixes. (Ibid:29) Thus, he located the stress as “... invariably in the penultimate syllable”.¹⁶ (Ibid,1987:29) He added that in mono-syllabic stems, the stress is assigned to the only syllable. (Ibid,1987:37) Most literature agree on the fact that the final or ultimate (i.e. the first from the end) syllables of Amharic stems are unstressed. (Leslau (1995); Alemayehu (1987); Sande (2014))

¹⁵ In contrast to Alemayehu, Leslau (1995) has identified reassignment of stress triggered by derivational suffixes like for instance: /'däf.fä.-räçç/ “she got intrepid and /däf.fä.'rin.nät/, “intrepidness”

¹⁶ Note again the information under footnote 12 and the discussion at The phenomenon of stress as analyzed by various scholars for the different use of the terms “penultimate” and “antepenultimate”.

Stress and Weight in Amharic

The literature is very much scanty when discussing particularly on primary and secondary stress assignment on the stem. Though this distinction bears not very much importance for the discussion at hand, I will try to present the position of a few scholars on this topic. Sande (2015) takes, "... all stress as primary, because there is no obvious phonetic or impressionistic reason to distinguish primary from secondary stress" (Ibid:185) Alemayehu`s (1987:21) assumption of a one-prominence-per-word distinction relegates the phonetic and grammatical realization of secondary stress as non-salient and irrelevant. As to my understanding, lexical primary stress is grammatically and semantically insignificant in Amharic phonology unlike languages like English where it plays a crucial role in distinguishing grammatical word categories. Thus, not only for this study, but the use of secondary stress has a very peripheral importance in the language. I think further experimental studies involving phonetic tools like Praat are necessary to analyze the structural and functional saliency of secondary stress.

According to Alemayehu (Ibid), stress assignment in Amharic stems does not depend on syllable weight or vowel quality. This is in sharp contrast with the approach in Sande and Hedding (2015) who reported that Amharic supports coda-consonant syllable weight systems predicted by Hayes (1989) "moraic theory". According to Sande and Hedding, Amharic classifies CVC syllables as light unless the coda is a geminate or CVG¹⁷ which in this case is "moraic". (Sande, 2015)

This means that syllables closed by geminates attract stress while other closed syllables do not. Thus, non-geminate codas are not moraic. (Ibid.) I agree with Sande and Hedding`s observation that syllable weight, which in the case of Amharic is defined by a geminate coda, can in fact influence stress placement in a stem. This is supported by my data where all the perfective stem syllables with a geminate coda (i.e. a heavy syllable) are stressed. That does not mean stems without gemination cannot be stressed. Rather a syllable in a stem with a geminated coda can potentially attract stress.

According to Sande and Hedding, the basic or default stress pattern in Amharic operates by alternating an odd-numbered syllables stress. (Ibid, (2014)) Sande and Hedding described this pattern with a "binary, trochaic feet aligned to the left edge of a word with no final stress" (Ibid, (2014, p. 4))

¹⁷ G stands for gemination

This default stress pattern holds for every open and closed syllable in a word. In this default stress pattern, moreover, Sande and Hedding added that, “final odd-parity syllables are unfooted, resulting in word-final lapse”. (Ibid, (2014, p. 6)) I will present this default stress pattern with examples from Sande and Hedding (2014) below:

Note that: stress is marked by underlining the stressed syllable, feet with parenthesis and syllables with dots.

(13)

A. *Even syllable words*

- i. ('mät. fat) ‘to vanish’
- ii. ('do. ro) ‘chicken’

B. *Three syllable words*

- i. ('mät. räf). räf ‘to overflow’ (this word is a lexical reduplication not grammatical)
- ii. ('k'o.fi). ja¹⁸ ‘hat’

C. *Four syllable words*

- i. (mäf. k`ä).(da. däm) ¹⁹ ‘to race’
- ii. (t`ä.rä).(p`e.za) ‘table’

D. *Five + syllable words*

- i. (as. da). (ka. käl).ku ‘I arranged it’
- ii. (yä. tä). (kä. fä).(ta.win) bir ‘the opened door’

¹⁸ Here the glottalized IPA symbol is reproduced here only for faithful representation, for the correct transcription is with unglottalized velar /k(ko. fi). ja/, “hat”. The same holds true for example Di where the second syllable of the first feet is /-tä/ not /-da/ and also in (Dii) where the first syllable of the third feet and the vowel of the extra-metrical syllable are /-tä-/ not /-ta-/ and /-bär/ not /-bir/, respectively.

¹⁹ Note here that though the stressed syllables are multiple, they are not consecutive like in stems with multiple consecutive syllables with geminated coda.

This default stress pattern does not hold when the stem syllables have a geminated coda. As stated in Sande and Hedding (2015), syllables which are closed by a geminated coda are always stressed irrespective of the position of this syllable in the stem. They stipulate that every syllable with a CVG structure are stressed; which may lead to multiple consecutive stressed syllables in a stem, final stress and lack of initial stress; none of which are common to the stress pattern of the language.²⁰ As expressed in Sande and Hedding (2014), “Syllables closed by geminates are heavy, attracting stress even if the result is stress clash, a stressed final syllable, or the lack of initial stress”. Thus, gemination, according to Sande and Hedding (Ibid), seems to override the default stress pattern of the language.

Let me take examples from the same authority and demonstrate how geminates override this pattern:

(14)

a. *Syllables closed by geminates are always stressed*

sej.('tot <u>ft</u>)	b. ('wi <u>f</u> .fa).('ot <u>ft</u>)
women	dogs

b. *Consecutive stressed syllables*

('bäl).('latf.tʃih ^w)	b. (ij.jä).('tät).('a).('lal).('latf.tʃih ^w)
‘you all ate’	“you are hating each other”

c. *Final stress*

('tʃ ^w a.räs).('wall)	b. ('tʃ ^w a.rä).sätf
‘he finished’	‘she finished’

Not only this, but the pattern of default feet alignment from the left edge is overridden, especially in four syllable words, and that “all feet are aligned to the geminate and we get initial rather than medial lapse” (Ibid, (2014, p. 7)) This means when there is a geminate in a word, every alternating or consecutive syllable with a geminate gets stressed and is footed first. (Ibid, 2014). Look, for instance, the following examples where the final, geminated syllable is footed first:

²⁰ This contrasts with the hypothesis that Amharic has a one-prominence per an accentuated or lexical unit, initial stressed syllable and lack of final syllable stress. (cf: Alemayehu, 1987; Leslau, 1995) By One-prominence per accentual unit, he meant Amharic has a fixed or non-phonemic stress where the position of a stressed syllable is completely predictable. (Ibid:23)

(15)

- a. yi.(säb.ra).(wall)
“he will break”
- b. k'o.(fi.ya.)-(occ)
“hats”

This last observation of Sande and Hedding (2014) and (2015) concerning the effect of gemination in the assignment of stress needs to be taken cautiously. I did not use Praat or other phonetic software to analyze these data and reproduce the result, but I, as a native speaker of this language, find the claim that four and more than four consecutive syllables or literally, as claimed in Sande and Hedding (2014, 2015) any syllable with a geminate can be stressed seems impractical. Especially when you consider the claim that secondary stress is irrelevant in Amharic and all the consecutive stresses are primary, then it is nearly impossible to grasp the phonetic realizations and produce the words with an equally prominent primary stress. My impressionistic observation tells me that except for the first two syllables, the prominence of the rest of the syllables is difficult to distinguish in a continuous and fast speech. Unless an independent phonetic experiment is conducted, and the results reproduced to confirm the notions of Sande and Hedding (2014, 2015), this claim of a multiple consecutive stressed syllable is difficult to grasp its phonetic realization and phonological function.

Amharic Morphology

Amharic, like other Ethio-Semitic languages, exhibit a non-concatenative morphology of word formation or a root-and-pattern morphology. The roots are sequences of bare consonants (i.e. typically three) while the patterns are sequences of vowels and consonants with empty slots. (Wintner (2014)) A consonantal root carrying the basic lexical meaning of the root combines with a vocalic segment carrying grammatical meaning of the base. (cf: Schluter (2008)) Look how this morphology is at work in the following example in Amharic:

(16)

/ngs/ “king”

- a. **nigus** “king” b. **nigist** “queen”
b. **nigus-u** king-3rd.SG.M:DEF b. [**nigist**^w-a /ua/]²¹ queen-3rd.SG.F:DEF
“the king” “the queen”

This pattern is typically productive in the formation and conjugation of verbs, but less productive in nominal morphology which have (Meyer (2012)). For instance, look at the following table for conjugation of Amharic nouns:

Conjugation of the Nominal Stem							
		Singular	Plural			Singular	Plural
wänβär “chair”	1 st	wänβär-e chair- POSS:1 st .SG “my chair”	wänbär-atfjn ²² chair- POSS:1 st .PL “our chair”	silk “phone”	1 st	silk-e phone- POSS:1 st .SG “my phone”	silk-atfjn phone- POSS:1 st .PL “our phone”
	2 nd m.	wänbär-ik(h) chair-POSS: 2 nd .SG.M “your chair”	wänbär-atfjihu chair- POSS:2 nd .PL “your chair”		2 nd m.	silk-ih(k) ²³ phone-POSS: 2 nd .SG.M “your phone”	silk-atfj(h)u phone- POSS:2 nd .PL “your phone”
	f.	wänbär-ijf chair- POSS:2 nd .SG.F “your chair”			f.	silk-ijf phone- POSS:2 nd .SG.F “your phone”	

²¹ I used an open bracket here to describe the phonetic details in the stem, especially the labialization.

²² The stop consonant is despirantized or re-voiced because of the suffix /-otfj/ and specifically from the effect of the voiced alveopalatal affricate /-tʃ/.

²³ Spirantization of the voiceless velar stop /k/

	3 rd .m.	wänbär-u chair- POSS:3 rd .SG.M “his chair”	wänβär-atfäw chair-		3 rd .m.	silk-u phone- POSS:3 rd .SG.M “his phone”	silk-atfäw chair- POSS:3 rd .PL “their phone”
	f.	wänβär- ^{wa} ²⁴ chair- POSS:3 rd .SG.F “her chair”	POSS:3 rd .PL “their chair”		f.	silk- ^{wa} phone- POSS:3 rd .SG.M “her phone”	

Table 2 5: Conjugation of nominal stems

The following table presents the marking of other grammatical information like case and number on nominal stem.

Noun Declension			
	Number	Genitive	Definiteness+Accusative case
wänβär	wänbär-otʃʃ chair-PL “chairs”	wänbär-e chair-1 st .SG:POSS “my chair”	wänbär-u-n chair-DEF-ACC “the chair”
silk	silk-otʃʃ Phone-PL “phones”	silk-e Phone-POSS:1 st .SG “my phone”	silk-u-n Phone-DEF-ACC “the Phone”

Table 2 6: Noun declension

The above nominal stems are fully vocalized in a sense that their root and stem forms consist of full internal vowels interposed between the radicals, unlike the verbal roots which is formed only from bare root radicals (i.e. consonants). As the above table shows, their internal shapes are not modified as they are fully or mostly prefix or suffix conjugated.

²⁴ Rounding of the alveolar /r/ caused by the back rounded vowel /u/

The verb in Amharic can be marked for Tense, Aspect and Mood (TAM) and Person and Gender. The default (i.e. citation form) perfective verbal stem consists of a consonantal root (for instance, /sbbr/ “to break”) with, usually, a mid-central vowel /ä/ interposed to form the stem /säbbär-/. The stem then conjugates for mood and Person by affixing (i.e. prefixes, suffixes and circumfixes) inflectional morphemes. Let’s take the verb stem /säbbär-/ “to break”. The following table will illustrate the conjugation process for verbal stems:

		MASCULINE		FEMININE	
		SG	PL	SG	PL
Perfective	1 st	säbbär-ku break-1 st .SG “I broke”	säbbär-(i)n break-1 st .PL “we broke”	säbbär-ku break-1 st .SG “I broke”	säbbär-(i)n break-1 st .PL “we broke”
	2 nd	säbbär-(i)k break-2 nd .SG.M “you broke”	säbbär-aççu break-2 nd .PL “you broke”	säbbär-ijf break-2 nd .SG.F “you broke”	säbbär-aççu break-2 nd .PL “you broke”
	3 rd	säbbär-ä break-3 rd .SG.M “he broke”	säbbär-u break-3 rd .PL “they broke”	säbbär-aç break-3 rd .SG.F “she broke”	säbbär-u break-3 rd .PL “they broke”
Imperfective	1 st	i-säβ(i)r-alä-w FUT-break:IPFV-AUX-1 st .SG “I will break”	in(n)-säβ(i)r-alä-n FUT-break:IPFV-AUX-1 st .PL “We will break”	i-säβ(i)r-alä-hu/w FUT-break:IPFV-AUX-1 st .SG “I will break”	in(n)-säβ(i)r-alä-n FUT-break:IPFV-AUX-1 st .PL “we will break”
	2 nd	ti-säβ(i)r-alä-h/k FUT-break:IPFV-AUX-2 nd .SG.M “you will break”	ti-säβ(i)r-alaç-u FUT-break:IPFV-AUX-2 nd .PL “you will break”	ti-säβ(i)r-i-alä-ƒ FUT-break:IPFV-AUX-2 nd .SG.F “You will break”	ti-säβ(i)r-alaç-u FUT-break:IPFV-AUX-2 nd .PL “you will break”
	3 rd	yi-säβ(i)r-al-Ø FUT-break:IPFV-AUX-3 rd .SG.M “he will break”	yi-säβ(i)r-al-u FUT-break:IPFV-AUX-3 rd .PL “they will break”	ti-säβ(i)r-alä-ç FUT-break:IPFV-AUX-3 rd .SG.F “she will break”	yi-säβ(i)r-al-u FUT-break:IPFV-AUX-3 rd .PL “they will break”

Mood	1 st	li-sβär JUS:1 st .SG-break “let me break”	ini-sβär JUS:1 st .PL-break “let us break”	li-sβär JUS:1 st .SG-break “let me break”	inni-sβär JUSS:1 st .SG-break “let us break”
	2 nd	s(i)βär-Ø break:IMP-2 nd .SG.M “break”	s(i)βär-u break:IMP-2 nd .PL “break”	s(i)βär-i Break:IMP-2 nd .SG.M “break”	s(i)βär-u break:IMP-2 nd .PL “break”
	3 rd	yi-sβär JUSS:3 rd .SG.M-break “let him break”	yi-sβär-u JUSS-break-3 rd .PL “let them break”	ti-sβär JUSS:3 rd .SG.F-break “let her break”	yi-sβär-u JUSS:3 rd .PL-break- 3 rd .PL “let them break”

Table 2 7 : Conjugation of verbal stems

The perfective transitive and intransitive verbs are suffix-conjugated for TAM and Person. Though first person singular and plural are prefix conjugated and the imperative forms which are suffix-conjugated, the imperfective forms and the 3rdPL of the jussive are inflectional circumfixes, i.e. both prefix and suffix conjugated. (Leslau (1995))

Gemination of root consonants is an important classificatory factor of verbs in Amharic. Thus, based on gemination of the penultimate radical, four types of verbal roots are distinguished. (cf: Leslau (1995)) In type A verbs, gemination occur only in the perfective, but in type B verbs all the conjugation patterns (i.e. Perfective, Imperfective and Imperative/Jussive) take gemination. Most of the bi-and triradical verbal roots of Amharic belong to these two verb types. Types C verbs take gemination only in the perfective and imperfective, but not in the Imperative/Jussive. Amharic verb roots with four radicals, reduced quadriradical roots and three radicals with the vowel /a/ after the first radical belong to this type C verb category. (Meyer (2012)) The verbs in the last category (i.e. D) don't take gemination at all. Let me use the following table to represent the aforementioned verbal categories of Amharic.

	Root	Perfect	Imperfect	Imperative	Jussive
Type A	/gddl/ “to kill”	gäddäl-ä kill:PRF- 3 rd .SG.M “he killed”	yi-gädl-al FUT-kill:IPFV- AUX:3 rd .SG.M “He will kill”	g(i)däl-Ø kill:IMP- 2 nd .SG.M “kill”	yi-gdäl-Ø JUS-kill-3 rd .SG.M “let him kill”
	/k'rrt`/ “to cut”	k'orrät'-ä cut:PRF- 3 rd .SG.M “he cut”	yi-k'ort'-al FUT-cut:IPFV-AUX:3 rd .SG.M “he will cut”	k'urät'-Ø cut:IMP- 2 nd .SG.M “cut!”	yi-k'urät'-Ø JUS-cut-3 rd .SG.M “let him cut”
Type B	/fllg/ “to search”	fälläg-ä search:PRF- 3 rd .SG.M “he searched”	yi-fällig-al FUT-search:IPFV- AUX:3 rd .SG.M “he will search”	fällig-Ø search:IMP- 2 nd .SG.M “search”	yi-fällig-Ø JUS-search- 3 rd .SG.M “let him search”
	/mrrk`/ “to bless”	marräk'-ä bless:PRF- 3 rd .SG.M “he blessed”	yi-märrik'-al FUT-bless:IPFV- AUX:3 rd .SG.M “he will bless”	märrik'-Ø bless:IMP- 2 nd .SG.M “bless”	yi-märrik'-Ø JUS-bless-3 rd .SG.M “let him bless”
Type C	/mnzzr/ “to change”	mänäzzär-ä change:PRF- 3 rd .SG.M “he changed”	yi-mänäzzir-al FUT-change:IPFV- AUX:3 rd .SG.M “he will change”	mänzir-Ø change:IMP- 2 nd .SG.M “change”	yi-mänzir-Ø JUS-change- 3 rd .SG.M “let him change”
	/brrk`/ “to burst”	barräk'-ä burst:PRF- 3 rd .SG.M “it exploded”	yi-bärrik'-al FUT-burst:IPFV-AUX:3 rd .SG.M “it will explode”	bark'-Ø burst:IMP- 2 nd .SG.M “explode”	yi-bär(i)k'-Ø JUS-burst-3 rd .SG.M “let it burst”
Type D	/ft`/ “to sell”	fät'-ä sell:PRF- 3 rd .SG.M “he sold”	yi-fät'-al FUT-sell:IPFV- AUX:3 rd .SG.M “he will sell”	fīt'-Ø sell:IMP- 2 nd .SG.M “sell”	yi-fīt'-Ø JUS-sell-3 rd .SG.M “let him sell”

	/k'm/ “to stand”	k'om-ä sell:PRF- 3 rd .SG.M “he stood”	yi-k'om-al FUT-sell:IPFV- AUX:3 rd .SG.M “he will stand”	k'um-Ø sell:IMP- 2 nd .SG.M “stand”	yi-k'um-Ø JUS-sell-3 rd .SG.M “let him stand”
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Table 2 8: Types of verbal stems in Amharic based on gemination of root radicals

As I mentioned it earlier, Amharic nominals involve fully developed vocalized stems. The nominals in Amharic include adjectives and adverbs, for the function of some adjectives can only be identified by morphosyntactic contexts (Cf: Meyer (2012))

The expression of grammatical or semantic information on the stem involves all forms of prefix conjugation, infixing (though it is restricted to the formation of an absolutive form of the stems out of a consonantal roots) and suffix conjugation. Nouns in Amharic can also inflect for number and possession (17a) and gender and definiteness (17b). Look at the following examples:

(17)

- a. yä-set-oçç bet
 POSS-woman-PL house
 The womens` house
- b. liḅ-u-(i)na-liḅi-t-wa met` t`-u
 boy-DEF:3rd.SG.M-CONJ-girl-3rd.SG.F-DEF come:PRF-3rd.PL
 “The boy and the girl came”

CHAPTER THREE: CORPUS AND RESEARCH METHODOLOGY

In this section, I will introduce the general linguistic nature, method and the data collection procedure employed.

The Method

The present study is a synchronic descriptive analysis testing the formation of Amharic internal reduplication in Amharic against Copy and Association Model (CAM) of Alec Marantz (1982) (see its description under CHAPTER FOUR: THEORETICAL FRAMEWORK, below). The data was collected through a field work conducted in the summer of 2016 in Ethiopia. The current work is solely concerned with the general formation of Amharic internal partial reduplication and its morphophonemic shape as it doesn't attempt to elucidate a specific grammatical or semantic contrast.

The Data

Nature of the Field work and the Research Setting

The data collection did not concern itself with a specific variety of Amharic. Neither does the language have a standard variety. The standardization for Amharic is still in progress, but the variety of Amharic (Baye (2016)) spoken in Addis Ababa (i.e. the capital) is the de facto standard variety. Since the nature of the current study is a descriptive analysis, diachronic developments are not the concern here. Thus, the fieldwork concerned itself on the vernaculars of Amharic spoken in cities and towns, which are of typical multilingual settings.

Source of the Corpus

The data for Amharic was entirely collected from lexicographic, literary, ethnographic and grammatical materials cross checked through the researcher's introspective metalinguistic knowledge as he is a native speaker of the language. The dictionaries and the ethnographic materials used, which provided a large and diverse source of forms relevant for the study, are not based on a single variety, nor do they restrict themselves to one variety to the language.

Data collection

A survey of reduplication in linguistic resources like lexicographic materials (i.e. dictionaries of a mono and bilingual, pedagogical and grammatical nature, for instance Isenberg`s (1841) and Leslau`s (1976) grammatical works, for instance Leslau (1995) and literary materials (i.e. Amharic novels like “*imamat(i)na Bägäna*”, “sufferings and harp” and “*yäsiniibbit k’älämat*”, “colors of farewell” by Adam Reta, “*yätizita fäläg*”, “traces of memory” by Assefa Chabo); and ethnographic texts written on the language were used. I have worked on the forms, contemporary usage and acceptance of those lexical items used in the earlier dictionaries and ethnographic texts and found that they are still valid and used widely by the speech community.

Compilation and data organization

After cases of reduplications were collected, they were subjected to triangulation for validity of their contemporary usage across different sources. Then, they were transcribed using IPA symbols. The input (Nonreduplicated) stem was identified from the reduplicated stem, they were categorized based on their parts of speech, conjugation pattern and types and nature of the stem (i.e. bi-, tri- or quadriradical stems) or the reduplication (i.e. partial and full) and according to their grammatical function or meaning (i.e. based on their specific grammatical and semantic contrast). The next task was to compare the plain forms with the reduplicated and observe and describe the linguistic processes in the formation of reduplication and structural patterns and test them against the conditions stipulated by the Copy and association model (CAM) of Marantz (1982) to see if a general compatible pattern with the hypothesis of the model arises.

CHAPTER FOUR: THEORETICAL FRAMEWORK

Here I will present a brief review of the model and its four conditions used for the testing of the Amharic data.

Copy and association model (template-matching theory)

Marantz (1982) developed his “skeletal” templatic model (aka: copy and association model) motivated by the analysis of “Arabic verbal system” by McCarthy’s (1979) in his famous work titled “formal problems in Semitic phonology and morphology”. Reduplication is defined by Marantz as “... the affixation of a C-V²⁵ skeletal morpheme to a stem” (ibid, (1982, p. 446)). According to this assumption, “...each reduplicating process can be characterized by a skeleton”. (Ibid, 1982:445) Further, following the generalization of Moravcsik’s (1978) he concludes that reduplication is “the affixation of a C-V skeletal morpheme to a stem and the association of a copy of the stem's phonemic melody with the affixed skeleton” (ibid, (1982, p. 440))

He further noted that, despite the inadequacy of his survey, internal reduplication or infixing reduplication (i.e. the kind of reduplication which is prevalent in Amharic and is the focus of the current study) can be explained by this theory, the only problem being syllabification (i.e. “... how to specify where in the stem the infix belongs” (Marantz, (1982, p. 453)) as he put it, “just as I claimed that initial and final reduplication are the prefixation and suffixation, respectively, of a C-V skeletal morpheme, so I would claim that internal reduplication is the infixation of a C-V skeletal morpheme” (Marantz, (1982, p. 453))

For Marantz (1982), reduplication is just a special type of affixation. The peculiarity of reduplication is that instead of a fully phonologically specified morpheme, a skeletal morpheme, i.e. a *segmentally empty template*, is attached to the stem or to use his terms, it is peculiar since “... the phonemic melody of a reduplicating affix is dependent on the phonemic melody of the stem to which it attaches” (Marantz, (1982, p. 445)). This skeleton, which can be defined by *C* and *V* slots, or by syllabic shapes, is then filled (“associated”) with *melodic content* which is copied as a *string of segments* from the base. The same assumption is held in Moravcsik (1978, p. 440) who describes reduplication as an “... affixation of a C-V skeleton to a stem, the C-V skeleton borrowing phonemes from the phonemic melody of the stem to which it attaches”.

²⁵ Here both Marantz and the present thesis don’t intend to exclude other skeletal morphemes with syllable shapes like CVC rather it is for sample representation of the skeleton template.

The filling of the skeleton is explained by autosegmental spreading and templatic phonology. This means that after the affixation of the CV skeleton, the melody of the base or a part of it is associated to this skeleton and, if necessary, all non-associated elements are deleted, as in the following example from Agta:

(18)

Takki “leg”

t a k k i	→	t a k k i	t a k k i	
				= taktakki “legs”
CVC+ CVCCV		CVC	+ CVCCV	

(Marantz (1982, p. 445)

Figure 4 1. Marantz' illustration of the filling of CV skeletons

He explained that the entire phonemic melody of the stem is copied and then linked to the affixed CV “slots” (Marantz, 1982). Now, following the above generalization, the natural question that follows will be how to make sure that the correct phonemic melody is copied from the base and associated (linked) to the right skeletal (slot). To answer this question, he presented the following four conditions governing the process of linking of phonemic melodies to their CV skeletal (slots) (Marantz, 1982 P.446).

Condition A:

“Unless overridden by a special proviso, feature complexes containing the feature [- syllabic] can be linked only to C slots in the skeleton, and feature complexes containing the feature [+syllabic] can be linked only to V slots in the skeleton.”

As an illustration for the above condition, he used examples from Agta plural reduplication. This language forms plural by initial CVC reduplication and when the stem begins with a vowel, only the initial VC is copied.

(19)

Takki “leg”

t a k k i t a k k i

||| |||| = taktakki “legs”

CVC + CVCCV

Uffu “thigh”

uffu u f f u

u f f u u f f u

\\ |||| = uffuffu “thighs” * ||| |||| = *uffuffu

CVC + VCCV

CVC + VCCV

Figure 4 2: Marantz' Illustration of Condition A using Agta initial CVC reduplication

Condition A prevents the attachment of the /u/ to the C slot, for example, yielding perhaps *wuffuffu. (Marantz, (1982, p. 447))

Condition B:

“After as many phonemes as possible are linked to CV slots one-to-one in accordance with other conditions and principles, extra phonemes and CV slots are discarded. There is no multiple attachment of phonemes to CV slots or of CV slots to phonemes.”

He brought examples from Dakota where the association of the Dakota CCVC reduplicating suffix with the melody /haska/, prohibiting the association of a single phonemic melody to two skeletal slots like for example in the following instances:

Note that : only the final (C)CV of a V-final stem is copied. (Marantz, 1982 p.448)

(20)

haska “be tall”
h a s k a h a s k a
||| | / / / / = haskaska
CVCCV CCVC “be tall, pl.”



Figure 4 3: Marantz' Illustration of Condition B using Dakota CCVC suffix reduplication

Condition C:

“The slots in a CV skeleton may be preattached to distinctive features. Although a vowel from the stem's phonemic melody links to the V slot in the reduplicating prefix..., all of its (i.e the vowels) features are overridden by preattached features” (Marantz,(1982, p. 449))

He demonstrated this point by an example from Akan, the V of the copy in "multiple activity" or "multiples state" formation of the verbs is always a [+high] version of the first stem vowel. (Marantz (1982))

(21)

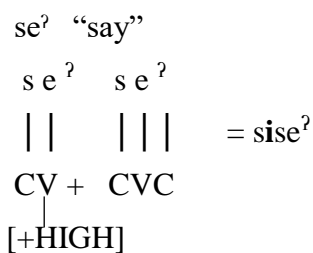


Figure 4 4: Marantz' Illustration of Condition C using Akan CV prefix reduplication

Condition D:

This condition has two sub-conditions where both work in accordance with the previously stated three conditions to give a better form.

Condition Di: Direction of linking

“Linking of the phonemic melody to the reduplicating skeleton (CV slot) either begins with the leftmost phoneme or from the rightmost phoneme. But, in the unmarked case, reduplicating prefixes associate with their melodies from left to right, reduplicating suffixes from right to left.”

²⁶ Note that the association of /a/ to the /C/ slot also violates “Condition A”

Condition Dii: Phoneme-driven linking

“The association of phonemic melodies and CV reduplicating affixes is "phoneme-driven" in a sense that for each phoneme encountered linking from left to right or from right to left, the association procedure scans along the skeleton to find a CV slot eligible for association with the phoneme under Condition A”

This condition also determines which phonemes and CV slots are discarded when there are not enough CV slots to link to all the phonemes or not enough phonemes to link to all the slots. (Marantz, (1982, p. 450)) The following example from Dakota demonstrates condition Di: in the unmarked suffixing reduplication rule, association begins from the rightmost phoneme in the copied phonemic melody and proceeds leftwards.

(22)

h ą s k a	h ą s k a		h ą s k a	h ą s k a	
		= haşkaska			= * haşkahaş
CVCCV	+ CCVC	“be tall, pl”	CVCCV	+ CCVC	

Figure 4 5: Marantz' Illustration of Condition D using Dakota suffix CCVC reduplication

The anomaly of under- and overapplication of phonological rules to reduplicated stems as expressed in Wilbur (1973) are considered “... pseudoproblems and paraparadoxes. Once the grammars of reduplicating languages are examined with care, difficulties surrounding the interaction of reduplication rules with phonological processes disappear.” (Marantz (1982, p. 460).

CHAPTER FIVE: REDUPLICATION IN AMHARIC

Amharic both employs partial and full reduplication. The following section will discuss the two major types of reduplication in Amharic (i.e. partial and full) and the formal (morpho-phonological) structures of internal partial reduplication as presented by different scholars, and discuss the grammatical functions of Amharic internal reduplication. A discussion will also be presented about the interaction of Amharic internal CV reduplication and morphophonological rules of the language. I will present the views of two scholars, (Sande and Hedding, 2014) and (Rose, 2003), on the formation and nature of Amharic internal reduplication, reassert the position of this thesis on the formation of Amharic internal reduplication and finally present stems which were unaccounted for in these scholars' analysis and are going to be part of the current analysis.

Partial Reduplication

Partial reduplication is when only part of the stem is copied and attached or inserted into the stem (i.e. the Amharic case of copying and linking only the [-SYLLABIC] phonemic melody of the phonemic copy of the stem). It is a very productive form of reduplication in Amharic where almost all the semantic contrasts expressed on the verb stem are constructed (my data strongly supports this observation

Structural properties of Amharic Internal Reduplication

Here I will present a very brief note on the general nature of the CV internal reduplication and its relationship with gemination (i.e. heavy syllables). The infixal CV skeleton copies the base and associates its [-SYLLABIC] phonemic melody from the phonemic copy of the stem. For instance:

(23)

	Stem	Reduplication	Syllabification
a.	'rädʒ.dʒim	rä.~'dʒa-dʒ.dʒim tall~PL “tall ones”	rä.'dʒadʒ.dʒim

Stem	Reduplication	Syllabification
b. 'säf.fi	sä.~'fa-f.fi	sä. 'faf.fi
	wide~PL	
	“wide (as in places)”	

(Sande, 2014:192)

Amharic internal CV reduplication targets closed syllables as a landing site and links and associate their phonemic melody. (note that Sande (2014) observed that the CV reduplicant targets only heavy syllables with geminated codas). This can be observed from example 23 above, the CV reduplicant is inserted inside the closed syllable (both heavy and light²⁷).

It is difficult to specifically determine the position of the closed (or the base) syllables. Thus, the task of determining a specific position of the base and landing site for the CV reduplicant is difficult as it alternates between penultimate and antepenultimate in the stem and this makes the position of stress unpredictable (Cf: Alemayehu, 1987; Ullendorf, 1955; Leslau, 1995). But, the following general patterns about the position of the base and the templates of the reduplicated stem can be observed:

A. Monosyllabic Stems

- The stem itself. (refer to example 24 a below)

	<i>Regular</i>	<i>Output template</i>
Monosyllabic	CVCC	CV~CV-CC ²⁸

B. Bi- and trisyllabic stems

- The penultimate in bisyllabic stems closed by geminated consonant (i.e. heavy) (example 24 b, c). It is difficult to specify a single location of closed syllables in trisyllabic stems, but it is either the penultimate or antepenultimate (Example 24 d below)

²⁷ According to the consensus, Amharic closed syllables with a short vowel and singular coda are light whereas long vowels and geminated coda make the syllable heavy, but all stressed syllables are not heavy and stems with heavy syllables don't always undertake an internal reduplication. This rather entails the fact that syllables with geminated coda (mono-, bi- or poly-) are always stressed, thus attracting a CV infixing reduplicant, but still stems with light closed syllables can undertake internal reduplication.

²⁸ The tilde and hyphen indicate the position of the infixing CV reduplicant to the left of the base.

	<i>Regular</i>	<i>Output template</i>
Bisyllabic	CVCCV	CV~ CV -CCV
	CVCCVC	CV~ CV -CCVC
Trisyllabic	CVCCVCV	CV~ CV -CCVCV or
	CVCVCCV	CVCV~ CV -CCV

C. Quadrisyllabic stems

- The antepenultimate syllable closed by geminated consonants

	<i>Regular</i>	<i>Output template</i>
Quadrisyllabic	CVCVCCVCV	CVCV~ CV -CCVCV

Thus, the singleton [-SYLLABIC] phonemic melody of the penultimate (Example 24b and c) syllable and the antepenultimate syllables (Example 24d and e) of the phonemic copy of the stem can be linked to the C slot of the CV infix skeleton morpheme. (cf: Sande (2015, p. 184); Leslau (1995)) This can be further demonstrated by the following examples:

(24)

	Root	Stem	Reduplication (Stem + C(V)) ²⁹
a.	nāçç`	'nāçç`	nä.~ ça -çç white~PL “white ones”
b.	√zgg	'zä g.g a	zä.~' ga -g.g-a close:PRF~INT-3 rd .SG.M “he closed completely”
c.	wäfram	'wä f .ram	wä.~' fa -f.ram fatty~PL “fatty ones”

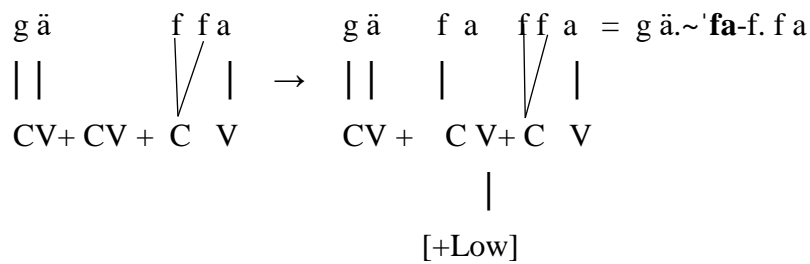
²⁹ The vowel in the parenthesis is used to indicate that it is alien to the stem phonemic melody (See chapter 6.1. under **CONDITION C** for further discussion)

- d. $\sqrt{t'rrg}$ $t'är.rä.gä$ $t'ä.\sim'ra-r.rä.g-ä$
sweep:PRF~ITR-3rd.SG.M
“he swept several times”
- e. $\sqrt{gnnt'1}$ $gä.'nät'.t'ä.lä$ $gä.nä.\sim't'a-t'.t'ä.l-ä$
rip off:PRF~INT-3rd.SG.M
“he ripped off completely”

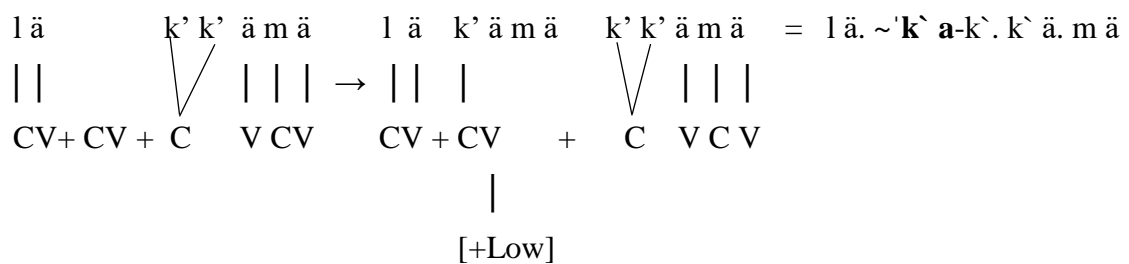
The V slot in the infixing CV skeleton is prespecified for a [+LOW] phonemic melody. This prespecified phonemic feature precedes every other [+SYLLABIC] phonemic feature in the phonemic copy of the stem. In all the semantic and grammatical contrasts in Amharic formed through infixing this CV skeleton template, this (i.e. Condition C) condition is predominately observed. Condition C can be represented autosegmentally as follows with biradical (25a) and triradical stems (25b)

(25)

- a. $'gäf.fä \rightarrow gä.\sim'fa-f.fä$



- b. $'läk'.k'ä.mä \rightarrow lä.\sim'k'a-k'.k'ä.mä$



[+Low] = a low vowel

The [+ SYLLABIC] phonemic melody of the stem is obviously not associated from the phonemic copy, instead an independent vowel is introduced and prespecified to the V Skeleton template. This begs the question what will happen to the unassociated phonemic melodies of the stem. Condition B and Di (refer to CHAPTER FOUR: THEORETICAL FRAMEWORK) dictate phonemic melodies which are unassigned for skeletal slot, which therefore should be discarded.

Partial reduplication may sometimes combine with a prefixed particle /tä-/. For instance, :

(26)

	Root	Stem	Reduplication
a.	√k'rrt'	k'or.r ä.t'ä	tä.-k'o~ ra -r.rä.t'-ä PASS-cut:PRF~ITR-3 rd .SG.M “it was cut into many pieces”
b.	√sbbr	sä b.bä rä	tä.-sä~ βa -b.bä.r-ä PASS-cut:PRF~ITR-3 rd .SG.M “it was broken into many pieces”

Another characteristic feature of the CV skeleton infix in Amharic is that though it as a rule targets heavy syllables ³⁰(i.e. syllables with geminated consonants as a coda), it only associates the singleton from the base. This will be explained by Condition B. The coda of heavy syllable is always geminated, but Condition B constrains the C skeleton template not to link double [-SYLLABIC] phonemic melodies.

Gemination and CV internal reduplication in Amharic

Leslau (1995) observed this about the formal structure of partial verbal reduplication in Amharic that the reduplicative stem consists of , “... the repetition of the 2nd radical. Its form in the triradical verbs is /sä**bbä**rä/ (CV~CV- CCVCV) for types A, B, and C”. (Ibid:362) (Addition of the template is mine) (refer to chapter two on Amharic Morphology for more information on the types of Amharic verbs based on gemination of the second radical).

³⁰ Though stems without heavy syllables still undertake internal reduplication (refer to the section on Amharic stems unaccounted for in Sande (2014) and Rose (2003))

The reason that this statement of Leslau aggregated the template or the form for the three verbal types is because triradical verb stems that belong to one of the three types (i.e. type A, B and C) have a geminated radical in their perfective form, but differ only in the distribution of gemination in different conjugational paradigms of the stem.

It should be noted that reduplication and gemination have very significant interrelationship, albeit indirect, in the sense that gemination is the determinant of syllable weight in Amharic. Thus, a syllable with a geminated coda always attracts stress (Sande and Hedding, 2014 and 2015). Amharic internal CV reduplicants usually, but not always, target heavy syllables (with a geminated coda i.e. CVG) as a landing cite and associate the [-SYLLABIC] phonemic melody of the phonemic copy in a left to right association (refer to **Condition Di: Direction of linking** in chapter six for a discussion of left to right association). Thus, if we take a triradical stem as an example, the reduplicated stem will have a nearly identical template:

Root	Stem and Template	Reduplicated stem	Frequentative Template ³¹
Type A: k'rrt'	k'or.rä.t'-ä CVCCVCV	k'o~ <i>ra</i> -rrät'-ä cut~ITR-3 rd .SG.M “he cut into many pieces”	CV~CV-CCVCV
Type B: mtt'n	mät.t'ä.n-ä CVCCVCV	mä~ <i>t'a</i> -tt'an-ä balance~ITR-3 rd .SG.M “he balanced repeatedly”	CV~CV-CCVCV
Type C: brrk'	bar.rä.k'-ä CVCCVCV	bä~ <i>ra</i> -rräk'ä burst~ITR-3 rd .SG.M “it exploded many times”	CV~CV-CCVCV

Table 5 1: Basic templates of triradical stems of type A, B and C verbs

³¹ The templates here are meant to familiarize the reader with the arguments of Rose (2003) over the different templates of the input and the frequentative outputs of Ethio-semitic verbs in general and Amharic in particular. (see Rose, Sharon (2003) for details) Here the perfective templates of the input and reduplicated stem are identical.

Full Reduplication

Full reduplication is a periphrastic construction (it is a repetition used for emphasis or as a poetic device). Leslau refers to them as “total reduplication” (Leslau, (1995, p. 173) and whenever it is not just a repetition, it is usually accompanied by independent grammaticalized morphemes and particles like /-lä-/ , /-bä-/ or /-iskä-/ forming a compound word.

Look at the following examples:

(27)

Stem	Reduplication
a. dārādʒa ³²	dā.rā.dʒa- bä -dā.rā.dʒa step-PREP~PRCS “gradually”
b. tʼind	tʼind- lä -tʼind pair-PREP~DISTR “being in pair”
c. dar	dar- iskä -dar edge-PREP~INT “everywhere”

Full reduplication is used as an alternative strategy for expressing some grammatical contrasts like iterativity in verbal roots by using a syntactic strategy of “periphrastic construction” with a grammaticalized auxiliary verbs “to say”, /ʔalä/ and/or “to make”, /ʔadärägä/ (i.e. forming an ideophone). For instances,

(28)

Root	Stem	Iterative	
a. √ʔkkk	ak.kä.kä	akäk~akäk	adärägä scratch~ITR make:PRF: 3 rd .SG.M “he scratched slightly but repeatedly”

³² I did not use the root radical sign √, for nouns which are not represented through root radicals. The stems all are use full reduplication and have light syllables. They do not undertake an internal reduplication..

	Root	Stem	Iterative	
b.	√t'bb	t'äbb	t'äb~t'äb	ʔalä
			drop~CONT	say:PRF:3 rd .SG.M
			“it kept dropping continuously”	

Grammatical Function of Reduplication

Reduplication is predominantly used in Amharic to express semantic and grammatical contrasts on the verb stem, but nominal stems are rarely used. Moreover, verbal stems are contrasted semantically for a wide variety of functions like expressing repetitions, intensity, number (plurality), reciprocity, frequency and continuity of an action or a state. Different scholars have attempted to describe these phenomena in Amharic internal reduplication. Among them, Leslau (1995:44) has the following to say about its function, “the reduplicative stem expresses an intensive action, reduplication, repetition, frequency, or attenuated action” (Ibid)

According to another writer, Aziz Ahmad (1982), the verbal reduplication of the semantic feature “reciprocity” in Amharic has “... an accompanied feature of repetition or continuity of action...”, (Ibid, 1982:21). The semantic feature “intensiveness”, in contrary, is characterized as a specific feature of action-process verbs.

In another instance after giving the following example in 29 below and generalizing the first as “intensive aspect” and the latter as “reduplicative intensive aspect”, Ahmad gives the following remark, “the latter appears to denote a higher degree of intensity by specifying the distributiveness of the objects of the action ...” (Aziz, 1982:19). I think both of the following forms in 29 appear to note a higher degree of intensity since /sibirbir/ or /säβabbärä/ and /minzirzir/ or /mänäzazzärä/ is a way of saying completely smashed as /minzirzir/ is equivalent to saying "exchange or change completely". The only difference is in form, where the earlier needs grammaticalized auxiliary verbs (i.e. /ʔalä/ and /ʔadärägä/) and the latter don't, and semantic or emotional emphasis by speakers.

(29)

	Root	Reduplication	Translation
a.	Sibir	sä.~ β a-b.bä.rä or si.bir.bir	ʔalä “break into pieces (smash)”
b.	Minzir	mä.nä.~ z a-z.zä.rä or min.zir. zir	ʔadärägä “change all (like money)”

The Interaction of Reduplication and Morphophonology of Amharic

The following general observations can be made concerning the interaction of the CV infixing reduplication with the syllabification, gemination and stress pattern of the language. First, let me present the characteristics of these morphophonological processes on nonreduplicated stems and the reduplicated stems will follow. Note that except for the degemination of the coda, the remaining process applies to stems without heavy syllables.

Note that: the numbering of the process doesn't imply any hierarchy of importance

A. Nonreduplicated stem

- i. The second half of the geminated consonant occupies the onset position of the next syllable and the first half remains as a coda for the preceding syllable. (cf: Sande, (2015))
- ii. The stress falls on the heavy syllable (i.e. in this case a syllable closed by geminate: CVG) as gemination attracts stress (Sande, (2014); Leslau, (1995))³³. The heavy syllable is the penultimate in biradical and the antepenultimate in triradical and quadriradical stems. Let me demonstrate these two processes by taking examples from my corpus:

(30)

Root	Nonreduplicated stem	Syllabification and stress placement
√wtt'r	wät.t'ä.rä	'wät'.t'ä.rä
		tighten:PRF-3 rd .SG.M
		“he tightened”

³³ When I refer the placement of stress on the heavy syllable, it should be noted that it is because I want to underscore the relationship of gemination, syllable weight and internal partial reduplication. It should also be noted that the concern of this study is CV internal reduplication which copy the base and associates the singleton coda of the phonemic copy and use this very syllable as a landing site. It doesn't mean that all stress in verbal and nominal stem falls on heavy syllables. Note also that all the scholars (refer to General Observation on Amharic Stress) agree on the fact that heavy syllables (CVG) attract stress although they differ on the position of it, the effect of affixes on reassignment of it and the possibility of consecutive multiple stress on a single stem.

iii. It appears that the stems with heavy syllables (i.e. verbal stems with the default perfective 3rd.SG.M form and nominals, especially adjectives, with a nominative absolutive form) which form grammatical or semantic contrast by CV internal reduplication appear to have only one syllable closed by a geminate: (CVG) or “heavy”. Thus, the above nonreduplicated stems (i.e. citation or default forms) have only one heavy syllable (CVG). Though more than one geminated consonant can appear in a single word form (mainly in nominal stems and in phrasal constructions) (Leslau, (1995, p. 11)), (see example (14) under the section Stress and Weight in Amharic under CHAPTER TWO: MORPHOPHONOLOGY OF AMHARIC). These stems don’t reduplicate to form plural or iterative. Look at example (31) below:

(31)	Stem	CV infixing	Suffixing plural morpheme
	wättaddär	* wä.ta t.tad.där	wät.tad.där-oçç
			soldier-PL
			“soldier”

(Taken from Leslau, (1995, pp. 11-12))

B. Reduplicated stem

The Infixal reduplicant in Amharic has a CV template which is inserted to the left of the phonemic copy or more specifically to the base.

- i. **Syllabification of the input:** the syllabification rule of the language breaks the geminated consonant phoneme (this can also be a consonant cluster as shown in 32b) and forces the final half to syllabify as an onset to the following syllable.

For example:

(32)

Nonreduplicated

- a. mär.rät’-ä

choose:PRF-3rd.SG.M

“he chose

- b. wäf.ram

fat:NOM

“fat”

- ii. **Infixation**: The CV skeleton template is infixed to the left of the base and associates the [-SYLLBIC] phonemic melody (i.e. /r/ and /f/ in the example 33 (a) and (b) respectively) of the base or from the phonemic copy of the stem (CV.CV or /rä. t'ä/ in 33 (a) or /CC.VC/ or /f.ram/ in 33 (b) below). The V slot of the CV skeleton template, using the prespecification rule (refer to **CONDITION C** in chapter six below), is occupied by a [+LOW] phonemic melody /a/ (now the CV template of /~**ra**-/ in 33(a) and /~**fa**-/ in 33(b)).

For Example:

(33)

Infixation

a. m ä. ~**r a**-r. r ä. t' ä

|| | | | | | |
CV CV C C V CV

b. w ä~**f a**-f. r a m

|| | | | | | |
CV CV C C V C

- iii. **Resyllabification**: the interposed (infix) CV template together with the degeminated coda or singleton coda of the base becomes a closed syllable, a heavy in the former (34a) and light in the latter (34b) case, with a surface realization of CVG and CVC syllable patterns, respectively. The structure of this syllable is composed of an identical onset and coda [-SYLLABIC] phoneme with a pre-specified [+LOW] phonemic melody. Consequently, the previously closed and heavy syllable (i.e. the part of the stem to the left of the infixed CV reduplicant template or /mä-/ in example 34(a) and the /wä-/ 34(b)) splits its rhyme, loses its coda to the infixed CV template reduplicant (cf: Sande, (2014, p. 192)) (Look example 34 below).

For instance:

(34)

a. **märrät'**ä → **mär.rä.t'**ä → **mä.~rarr-**ä.t'ä

b. **wäfram** → **wäf.ram** → **wä.~faf-**ram

- iv. **Stress shift:** the reduplicated stems, like the nonreduplicated, appears to have only one closed by geminated syllable which carries the stress. When the CV infix is inserted to the left of the base, it takes the geminated coda of the heavy syllable in 34(a) and the singleton coda in 34(b). It, then, is syllabified as CVG or heavy (i.e. the CV /mä~rarr-/ in 34a) and light closed CVC (/wä~faf-/ in 34b): thus, leading to a concomitant effect of stress shift. The previous heavy and light closed syllables become light, unstressed and open.

Stress Shift

The above observation can be further illustrated by the following examples :

(35)

	Root	Stem	Reduplication
a.	ʔaç'. ç'ir	'ʔaç'. ç'ir	ʔa.~ 'ç'a-ç'.ç'ir short~PL “short ones”
b.	tɪl.lɪk'	'tɪl.lɪk'	tɪ.~ 'la-l.lɪk' big~PL “big ones”
c.	√zbrrk'	zä.'bär.räk'ä	zä.bä.~ 'ra-r.räk'-ä rumble:PRF~ITR-3 rd .SG.M “he rambled”

Note that: these observations account for all the bi-, tri- and quadriradical stems except for the monosyllables. Thus, the following can be said about monosyllabic stems :

- A. In single syllable stem, the infixing reduplicant skeleton template interposes into the stem itself by splitting the rhyme, but the process of degeminating the coda consonants and moving them to two different syllables does not occur here.

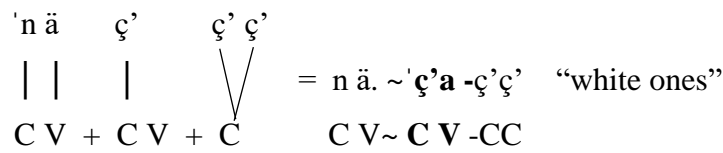
For instance:

(36)

Root	Reduplication
'k'äyy	'k'ä~CV-yy

B. The C slot of the reduplicant template associates the singleton [-SYLLABIC] phonemic melody from its base (look at **CONDITION B** in chapter six).

(37)



C. The stress, like in bi-, tri- and quadriradical stems, move to the heavy syllable (i.e. closed by geminate), which in this case is the ultimate one. Now, the reduplicant morpheme is syllabified as CVCC³⁴ with the geminated coda. In the case of polysyllabic stems, however, the infixing CV morpheme skeleton takes only the singleton and surfaces as a closed syllable.

The following examples make clear this observation:

(38)	Stem	Reduplication	
	'näçç'	nä.~ 'ç'a-çç'	nä. 'ç'açç'
		white~PL	
		“white ones”	

³⁴ The infixing or interposed morpheme is a CV skeleton, but taking the geminated coda of the stem, it syllabifies with it and become itself a heavy syllable attracting stress.

Scholars` view on the formation of Amharic Internal Reduplication

Here I will review the different analyses presented by scholars on the formal nature of Amharic reduplication. The literature which is of interest here is only that deemed relevant for the discussion at hand: the formation of internal reduplication in Amharic. Thus, Sande (2015), Sande and Hedding (2014) and Rose (2003) will be reviewed here. I will present first the discussions of these scholars, and my response to their analysis will immediately follow. I will selectively reproduce the statements of their assertions and hypotheses which directly serve the discussion.

Sande and Hedding (2014, 2015)

Sande (2015, p. 191) have the following to say about internal reduplication in Amharic:

- A. “heavy syllables are the target of infixation in this language, where reduplicative infixes *can only surface in syllables closed by geminates*” (emphasis mine). Verbal or nominal stems which lack this quality, i.e. closed by geminate or heavy syllable, must look for another alternative construction (one of them, as mentioned in Sande (2014/2015) is a full reduplication).

Another statement of Sande (2015) asserts that,

- B. “However, not all verbs have a geminate in the imperfective stem ... Those that do not cannot undergo iterative reduplication in the imperfective.”

The following are my responses to the above points raised in Sande (2014). The first observation (under A) of Sande (especially “heavy syllable as a landing site”) falls short of explaining some reciprocal formations of verbal stems like the following forms in example 39:

(39)

	Root	Stem	Expected	Actual
a.	√ mkkfl	'mä k.ka .fäl	*mä.~ ka - k.kafäl	mäk.kä.~'fa- fäl divide~RECP-VN “to divide for each other”
b.	√ mnng r	'män. na .gär	*mä.~ na - n.na.gär	män.nä.~'ga-gär speak~RECP-VN to speak to one another”

Although Sande`s (2014) analysis focused on Amharic nominal frequentatives and verbal iteratives, the CV skeleton morpheme in the above examples should have landed on the antepenultimate syllables, for they are heavy. Neither this nor the alternative strategy suggested for stems lacking a heavy syllable (i.e. which is a periphrastic construction) work in some Amharic reduplication forms, especially reciprocal. In the examples below, when the coda of the heavy syllable is geminated, it gives a reciprocal and when it degeminates an iterative. The antepenultimate syllables of the reciprocal in 40 (a) and (b) are heavy, but they become light in iterative forms.

Look for instance the examples below:

(40)

	<i>Root</i>	<i>Stem</i>	<i>Reduplication (Reciprocal)</i>	<i>Reduplication (Iteration)</i>
a.	√mngr	'män.na.gär	män.nä.~'ga-gär speak:VN~RECP “to talk to each other”	mä.nä.~'ga-gär speak:VN~ITR “to tell repeatedly”
b.	√mflg	mä.'fäl.läg	mäf.~'fä.-la.läg search:VN~RECP “take care of each other”	mä.~fä.-la.läg serach:VN~ITR “to look for repeatedly”

The above exception is true for some adjectives as well, since all adjectives with geminated stem consonants don't undertake internal reduplication (41a below) and those without do undertake internal reduplication of iteration and pluralization (41b and c below). These are the examples from my corpus:

(41)

	<i>Root</i>	<i>Stem</i>	<i>Expected</i>	<i>Actual</i>
a.	däkkamma	däk.kam.ma	*dä.~ka-k.ka.mma	däk.kam.m-oç: weak-PL “weak ones”
b.	√mkfl	mäk.fäl	No Internal CV	mä.kä.~fa-.fäl divide~ITR-VN “divide into pieces”

c.	wäfram	wäf.ram	*wäf.ram-oç:	wä.~fa-f.ram
				fat~PL
				“fat ones”

The second statement of Sande (2015) (under B) seems to neglect some verbal imperfective stems which lack a geminate, but can still express iterativity employing an infixing reduplication. Look for instance the following example:

(42)

	Root	Stem	Reduplication
a.	√t'rrg	yi. t'är.(i)gal ³⁵	yi.-t'ä.~ra-r.rig.-al FUT-sweep:IPFV~ITR-AUX:3 rd .SG.M “it/he sweeps (will) repeatedly”
b.	√nkk'l	yi. näk'(i).lal	yi.-nä.~k'a.-k'.k'ıl-al FUT-pluck:IPFV~ITR-AUX:3 rd .SG.M “he plucks (will) repeatedly”

In a concluding remark, the approach of Sande and Hedding (2014 and 2015) which entirely focus on heavy syllables as a landing site for internal CV reduplicants and the assumption that verbal stems without heavy syllables (with a geminated coda) cannot undertake internal CV reduplication fails to entertain some verbal stems in Amharic, which even though are light, still undertake internal reduplication and those stems with a heavy syllable don't undertake a CV internal reduplication.

Rose, Sharon (2003)

Rose (2003) in her discussion on the formation of “frequentative” in Ethio-semitic languages argued that, “despite the apparent infixal nature of this word formation, I argue that internal reduplication is not formed simply via infixation to the corresponding regular verb”. (Rose, 2003, p.4). The specific drawbacks raised by Rose (2003) against the infixation hypothesis are the following:

³⁵ The reason why the geminated radical is missing in these stems in these stems is because they are type A verbs which don't take gemination except in their perfective form. the epenthesized central high front vowel /i/ surfaces as a result of the infixed /CV(a)/ skeleton in the imperfective reduplicated form, but in the non-reduplicated imperfective form it is optional.

A. Distinct template of the frequentative or the output

“... no matter the shape of the original verb, the basic frequentative has its own specific template” Rose (2003, p. 4)

B. Violation of identity of the input

“gemination and the vowel pattern of the original verb are not usually maintained in the frequentative” Rose, (2003, p. 04)

She summed up her arguments as follows, “In conclusion, simple infixation of a reduplicative syllable into the regular verb cannot accurately capture all the properties of the frequentative.” And again, arguing that infixation falls short of explaining the process, she presented her alternative approach for the analysis of reduplication formation in Ethio-Semitic which, “... combines word-based morphology with additional templatic constraints as well as crucial reference to the root” Rose (2003, p. 3). In my observation, the Assumptions of Rose (2003) raised concerning linguistic structures of “frequentatives” face the following shortcoming:

- A. Limited Scope: the arguments are limited only to frequentative stems and their usage in the jussives and imperative mood. The perfective and imperfective forms of these verbs were not part of her analysis.

For instance, Sharon has used the following two jussives from Amharic frequentatives:

(43)

	<i>Regular</i>	<i>Actual Frequentative</i>	<i>Predicted Frequentative</i>	<i>Translation</i>
Type A	y _i -sbə̀r	y _i -säbäbir	*y _i -sbäbər	'break'
Type B	y _i -fällig	y _i -fälalig	?y _i -fəlallig	'want'

Rose (2003, p. 05)

Note that: The first example demonstrates my point that even if an imperfective or a jussive stem doesn't have a geminated syllable, it can still undertake a CV internal reduplication (see above under Sande and Hedding (2014/15)).

In the above examples, the regular verb has the following template, CV-CCVC while the reduplicated frequentative has a template CV-CVCVCVC. The only additional templatic feature, except the infixal -CV-, is the epenthetic vowel /-ä-/ which is raised due to phonotactics restrictions of the language /-*sba-/ and the vowel alternation of / ə/ to /ɨ/.

But this is an eligible case of “normal application” where the phonological processes or rules of the language (Amharic) apply where they should as dictated by the phonotactics and segmental (vowel alternation) constraints of the language. Marantz (1982) has explained this process of interaction between phonological processes and reduplication as follows, “... once the grammars of reduplicating languages are examined with care, difficulties surrounding the interaction of reduplication rules with phonological processes disappear.” (Marantz, (1982, p. 460)

B. Identity Faithfulness: the perfective and imperfective templates and forms of the same regular verbs (i.e. stems with the germination of the penultimate syllable) as in example 43(a) above remain intact in their frequentative. Let’s demonstrate this by taking the tri-radical type A verb form /√sbbr/, “break” :

(44)

	Root	Stem	Reduplication	Template
a.	sbbr	sä b .bä.rä (PRF) CVCCVCV	sä.~ βa -b.bär.-ä break:PRF~ITR-3 rd .SG.M “he broke repeatedly”	CV.CVC.CV.CV
b.	ysbr	yī.säβ(i).ral (IMPF) CVCVCVCVC	yī.-sä.~ βa -b.bir-al FUT-break:IPFV~ITR-AUX:3 rd .SG.M “he breaks/will break repeatedly”	CV.CV.CVC.CVC.VC

In the example 44 above, except the introduction of the low, open unrounded vowel (explained by **CONDITION C**) and consonant fortition (β →bb) in example 44 (b), which is explained by the phonological constraints of the language, the template of the frequentative is dependent on the regular stem. As the assumption of Copy and Association model (CAM) has it, the affixed skeleton associates the entire phonemic melody of the regular stem to the skeleton based on certain conditions of linking.

Despite the claim by Rose (2003) that Amharic internal reduplication formation is not an infixation process and the general emphasis of Sande and Hedding (2014 and 2015) on the heavy syllable hypothesis, I postulate that Amharic internal reduplication is indeed an infixation process with a reduplicant CV skeletal template infixing to the left of the base by copying the base of the stem and associating its [-SYLLABIC] phonemic melody from the phonemic copy of the stem, which usually contains a heavy syllable, but not always, and carrying a pre-specified [+SYLLABIC] low vowel /a/. This hypothesis will help eliminate the problems observed above and reiterated here:

- A. The reciprocal forms in Amharic and some verbal and adjective stems are unaccounted for in (refer to Amharic stems unaccounted for in Sande (2014) and Rose (2003) for more information on unaccounted stems) the “heavy syllable” hypothesis of Sande and Hedding (2014,2015). Instead of delimiting the formation of internal reduplication in Amharic for only stems with heavy syllables (i.e. having a geminated coda), this assumption of reduplication as an infixation process will certainly entertain most verbs and adjectives without the need to overstress on stems with heavy syllables and downplay the occurrence of internal reduplication among stems with a light closed syllable.
- B. The template of the reduplicated word from (in example 44 above) is nearly identical with the stem in the case of Amharic internal reduplication. The ungrammaticality of the predicted forms in example (43) above from Rose (2003) for the reduplicated stem simply occurred due to the phonotactic constraints of the language (i.e. they fall as a legible candidate under “Normal application” of phonological rules in reduplication environments). Moreover, without limiting the discussion of a few conjugational stems (like Rose (2003) has done in her entire focus on only imperative and jussive), the simple infixation hypothesis of Marantz (1982), which is reproduced here can handle literally all the conjugation types of verbal and nominal stems.
- C. Though there exist few exceptions to it (like the case with /yi-fällig/ “let him look for it”, /yi fä~la-lg/ “let him look for it repeatedly”), gemination and vowel pattern of the stem are almost entirely preserved in the reduplicated word form. The lost gemination in the imperfective are sometimes recovered in the reduplicative form like in example 44 (b) above. The examples in my corpus and the ones used in this paper demonstrate this fact.

The forms used by Rose (2003) are the exceptions, not the rules concerning the base reduplication identity faithfulness in the process of internal reduplication in Amharic. Furthermore, the first verb, in example (43) and (44) above, belongs to Type A verbs which have gemination only in their perfective forms while the second allows in all the three conjugative forms (perfective, imperfective and Imperative, Jussive).

Amharic stems unaccounted for in Sande (2014) and Rose (2003)

In this section, I will present forms of partial reduplication in Amharic which were unaccounted for in other scholars (especially by Sande and Hedding (2014 and 2015) and Rose (2003)) on the formation of CV internal reduplication which this study aims take into consideration. The common features of these stems lie in one of the following characteristics:

- A. They either don't have a geminate radical, thus lack a heavy syllable and are considered light, according to the characterization of Sande and Hedding (2014 and 2015), but they use partial or internal CV reduplication to express grammatical contrasts on the stem (45a-d) or they have a geminate radical and have a heavy syllable, but don't undergo CV internal reduplication (45e). Here in these categories, a considerable number of nominal stems (especially adjectives) and verbal nouns with an internal CV reduplication are represented.

For instance:

(45)

Stem	Reduplication
a. wäf.ram	wä~ fa -fram fat~PL “fat ones”
b. mäs.lat	mäsä~ la -lat to eat:VN~ITR “to eat repeatedly with urgency”

- c. *mäg.däl* *mägä~da-däl*
to kill:VN~ITR
“to kill repeatedly”
- d. *mäk.fäl* *mäkä~fa-fäl*
to divide:VN~ITR
“to divide several times”
- e. *däk.kam.ma* *däkkamm-oçç* * *däk~ka-kamma*
weak-3rd.PL
“weak ones”

B. They have a heavy syllable (a syllable with a geminate coda) and undertake an internal reduplication, but the CV reduplicant copies the base of a light syllable and associates a phonemic melody from this light syllable and uses the rhyme of this light syllable as a landing site, which is against the claim (refer to the discussion in Sande and Hedding (2014, 2015) in the previous section) by Sande and Hedding (2014) and (2015) (example 46 below).

For instance:

(46)

Stem	Actual	Expected
a. mäk.ka.fäl	<i>mäkkä~fa-fäl</i> to divide:VN~RECP “to divide for each other”	* <i>mä~ka-k.kä.fäl</i>
b. mäb.ba.lat	<i>mäbbä~la-lat</i> eat:VN~RECP “to eat (lit.) each other”	* <i>mä~ba-b.ba.lat</i>

The current study will account for the above forms and test their reduplication formation against the model. (for instance, refer to example 61b on page 68) Having presented my assumption, I will describe, in the next chapter, how the complete process of copying and association of phonemic melodies from the phonemic copy of the stem to the reduplicant CV skeleton template is performed and test them using the four conditions stated in Marantz (1982). The following chapter will proceed with the task of doing this.

CHAPTER SIX: DATA ANALYSIS AND PRESENTATION

In this chapter, I will be analyzing and testing the Amharic data against the four conditions of Marantz (1982). The first part will introduce autosegmental representations on the four syllable types of the Amharic data. Then, the structural formation of Amharic verbal and nominal reduplications will be tested against the four conditions (A-D).

In this thesis, I assume, following Marantz (1982), that reduplication in Amharic is an infixation process with a templatic shape of CV. What is unique about it is the association of only the [-SYLLABIC] or consonantal phonemic melody from the phonemic copy of the stem. As noted in previous chapters, CV Infixal skeleton in Amharic doesn't copy the [+SYLLABIC] from the stem.

Marantz's Autosegmental representation on Amharic corpus

The autosegmental representations introduced here will be used throughout this chapter and in the linking of phonemic melodies to the CV skeleton template. Thus, the representation for monosyllabic, bisyllabic, trisyllabic and, though quite rare, quadrisyllabic stems will be presented. Before I elucidate the process using Marantz representation, I will first present the step by step description of the process, and then a final autosegmental representation explaining all the steps will be presented.

(47)

i. Monosyllabic

Example: k' äyy "red"

Step 1: the CV template of the reduplicant is infixed to the *left* of the base which is always the coda of the closed (i.e. heavy or light) syllable of the phonemic copy of the stem. The base is the coda of the stem in monosyllabic words.

k' ä~CV-yy

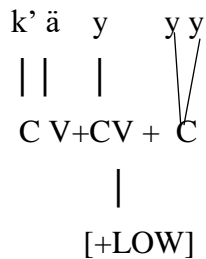
Step 2 : the base is copied from the phonemic copy of the stem.

k' ä~y-yy

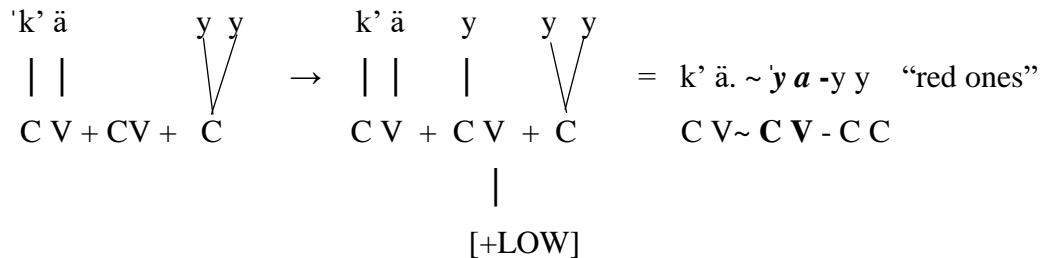
Step 3: the [-SYLLABIC] phonemic melody of the base together with the prespecified [+SYLLABIC] vowel is associated to the C and V slots of the CV skeleton template.

k' ä~ya-yy

Step 4: the [-SYLLABIC] phonemic melody of the base is associated to the C slot starting from *left and proceeding to the right* of the phonemic copy of the stem and the [+SYLLABIC] [+LOW] phonemic melody is pre-specified to the V slot of the template, according to the conditions described in Marantz (1982), and any unassociated phonemic melodies are discarded.



The following autosegmental representation will present the summary of the process described in the above steps:



ii. *Bisyllabic*

Example: aç.ç'ir “short”

Step 1: the CV template of the reduplicant is infixed to the *left* of the base. The base is the coda of the penultimate syllable of the stem.

a~CV-ç.ç'ir

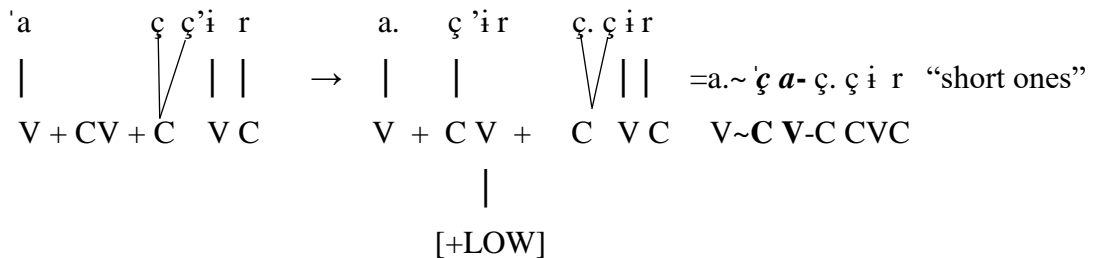
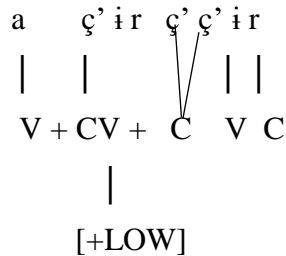
Step 2 : the base is copied from the phonemic copy of the stem.

a~ç'-ç.ç'ir

Step 3: the [-SYLLABIC] phonemic melody of the base and the prespecified [+LOW] vowel is associated to the C and V slots of the CV skeleton template.

a~ç'a-ç.ç'ir

Step 4: the [-SYLLABIC] phonemic melody of the base is associated to the C slot starting from *left and proceeding to the right* of the phonemic copy of the stem and the [+SYLLABIC] [+LOW] phonemic melody is pre-specified to the V slot of the template, according to the conditions described in Marantz (1982), and any unassociated phonemic melodies are discarded.



iii. *Trisyllabic*

Example: mär.rä.t'ä “he choose”

Step 1: the CV template of the reduplicant is infixed to the *left* of the base. The base is the coda of the antepenultimate syllable of the phonemic copy of the stem.

mä~**CV**-r.rä.t'ä

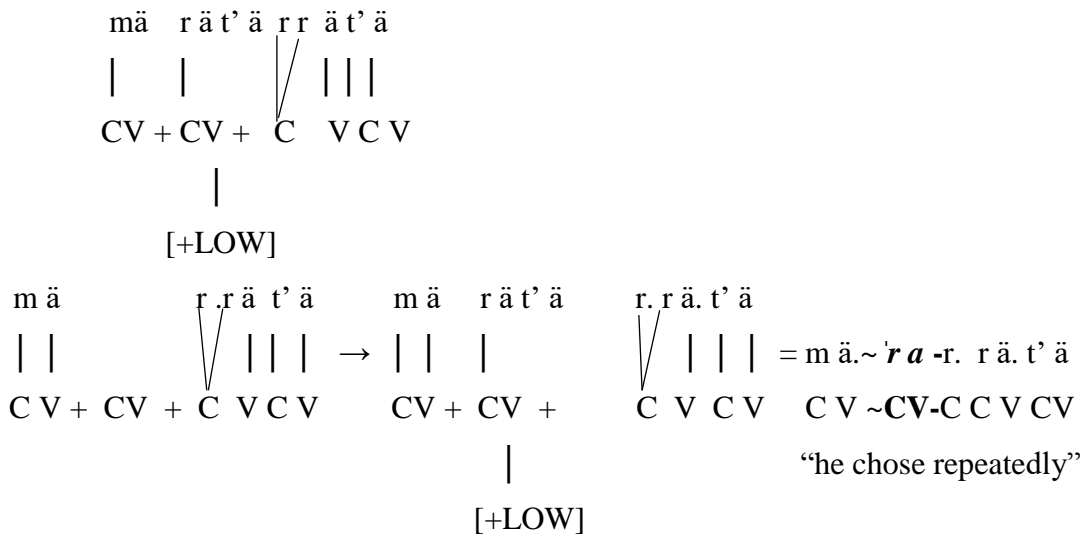
Step 2 : the base is copied from the phonemic copy of the stem.

mä~**r**-r.rä.t'ä

Step 3: the [-SYLLABIC] phonemic melody of the base with the prespecified [+SYLLABIC] phonemic melody is associated to the C and V slots of the CV skeleton template.

mä~**ra**-r.rä.t'ä

Step 4: the [-SYLLABIC] phonemic melody of the base is associated to the C slot starting from *left and proceeding to the right* of the phonemic copy of the stem and the [+SYLLABIC] [+LOW] phonemic melody is pre-specified to the V slot of the template, according to the conditions described in Marantz (1982), and any unassociated phonemic melodies are discarded.



iv. *Quadrisyllabic*

Example: *bä.räg.g ä.dä* “he opened wide”

Step 1: the CV template of the reduplicant is infixed to the *left* of the base. This is the coda of the antepenultimate syllable of the phonemic copy of the stem.

bä.rä~CV-g.gä.dä

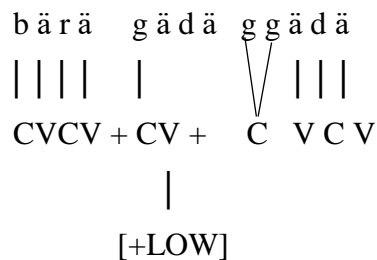
Step 2: The base is copied from the phonemic copy of the stem

bä.r~ga-g.gä.dä

Step 3: the [-SYLLABIC] phonemic melody of the base together with the prespecified [+LOW] vowel is associated to the C and V slots of the CV skeleton template.

bä.rä~ga-g.gä.dä

Step 4: the [-SYLLABIC] phonemic melody of the base is associated to the C slot starting from *left and proceeding to the right* of the phonemic copy of the stem and the [+SYLLABIC] [+LOW] phonemic melody is pre-specified to the V slot of the template, according to the conditions described in Marantz (1982), and any unassociated phonemic melodies are discarded.



- (48)
- | Root | Stem | Reduplication | |
|--------------------------|--------------|------------------------------------|-------------------------|
| a. $\sqrt{\text{nk}k'l}$ | 'näk'.k'ä.lä | nä.~'k'a-k'.k'ä.l-ä | *nä äl' kk`älä |
| | | pluck:PRF~ITR-3 rd SG.M | |
| | | “he plucked repeatedly” | |
| b. $\sqrt{\text{mj}ffg}$ | 'mäf. fä.gä | mä.~'fa-f. fä.g-ä | *mä. äg f. fä.gä |
| | | hide:PRF~INT-3 rd SG.M | |
| | | “ he hide everything” | |

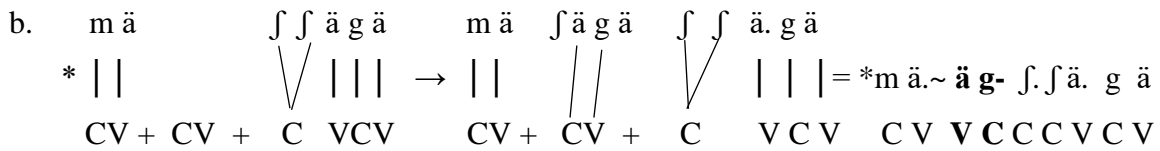
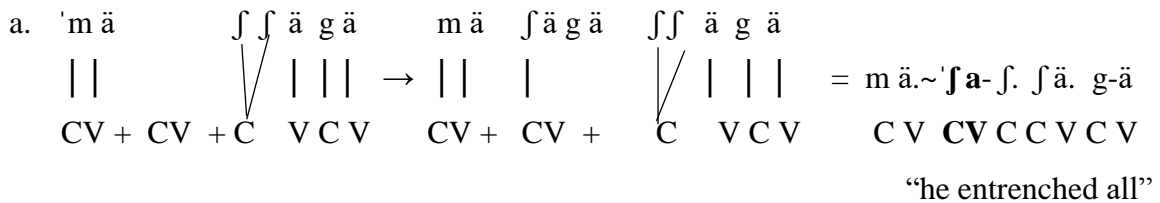
Let me now demonstrate the above examples with autosegmental linking.

(49)

- a. $\begin{array}{c} \text{'nä} \quad \quad \quad \text{k'k'älä} \\ \text{||} \quad \quad \quad \vee \quad \text{|||} \\ \text{CV} + \text{CV} + \text{C} \quad \text{VCV} \end{array} \rightarrow \begin{array}{c} \text{nä} \quad \text{k'älä} \quad \text{k'k'älä} \\ \text{||} \quad | \quad \vee \quad \text{|||} \\ \text{CV} + \text{CV} + \quad \text{C} \quad \text{VCV} \end{array} = \text{nä.~'k' a-k. k' ä. l-ä}$
“he plucked repeatedly”
- b. $\begin{array}{c} \text{nä} \quad \quad \quad \text{k'k'älä} \\ \text{*||} \quad \quad \quad \vee \quad \text{|||} \\ \text{CV} + \text{CV} + \text{C} \quad \text{VCV} \end{array} \rightarrow \begin{array}{c} \text{nä} \quad \text{k'älä} \quad \text{k'k'älä} \\ \text{||} \quad // \quad \vee \quad \text{|||} \\ \text{CV} + \text{CV} + \quad \text{C} \quad \text{VCV} \end{array} = * \text{nä. ~äl-k'. k' ä. l ä}$

The above example demonstrates the linking of the [-SYLLABIC] phonemic melody from the phonemic copy of the stem by the CV Infixal skeletal slot. It also shows what will happen if the distinctive feature [-SYLLABIC] is linked to V skeletal slot and the [+SYLLABIC] to the C skeleton slot. In 49 (b), we observe a clear violation of the condition stipulated under A. As a result of this violation, the derivation formed a /*VC/ reduplicant syllable structure which is unrecognized in the infixing reduplicant formation of Amharic. Moreover, the three consequent consonant clusters in /*VCCC or *älkk/ are not allowed by the phonotactic constraints of the language. The same happens in 50 (b) below.

(50)



The examples in 49 (b) and 50 (b) don't only present problem to the CV infixing template, but also to the phonotactics and the consonant collocation restrictions of the language.

CONDITION B

This condition is stated as follows :

“After as many phonemes as possible are linked to C-V slots one-to-one in accordance with other conditions and principles, extra phonemes and C-V slots are discarded. There is no multiple attachment of phonemes to C-V slots or of C-V slots to phonemes”. (1982, p. 446) The above governing principle is interpreted by the following figure:

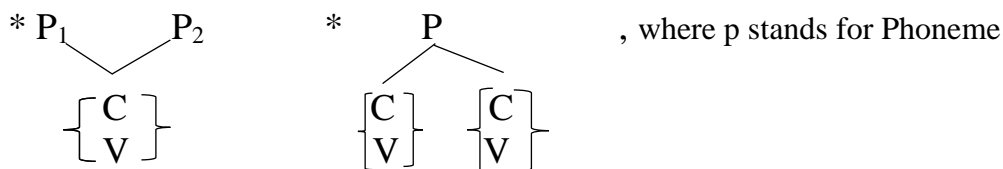


Figure 6 1: One to one correspondence between phonemic melodies and CV skeletons

This condition dictates a one-to-one correspondence between the phonemic melody of the phonemic copy of the stem and reduplicant skeleton template. It further prohibits the multiple attachments of CV slots to a phonemic melody and phonemic melody to the CV slots. And those which are left uncopied are discarded. Marantz (1982, p. 446).

This condition impeccably explains what happens in the association of the geminated coda of heavy syllables to the C slot of the CV template, for the CV template skeleton of Amharic associates only the singleton³⁶ consonantal phonemic melody from the phonemic copy of the stem. The following example and the subsequent autosegmental representation will make clear this observation:

(51)

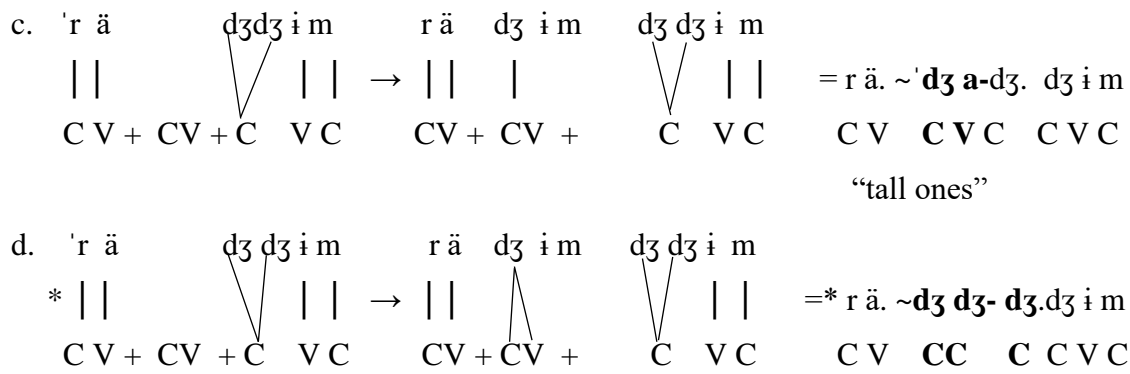
Root	stem	Reduplication	
a. $\sqrt{\text{rgb}}$	'räg.gä.bä	rä.~'gä-g.gä.β-ä	* rä gäa ggäbä
		sag:PRF~INT-3 rd .SG.M	
		“it sagged completely”	
b. rädʒdʒim	'rädʒ.dʒim	rä.~'dʒa-dʒ.dʒim	* rä dʒdʒ dʒdʒim
		tall~PL	
		“tall ones”	

Let us now demonstrate this by linking them using the notation employed in Marantz (1982). The first two in 52 (a and c) demonstrates that only the first singleton [-SYLLABIC] phonemic melody is linked to the C skeletal morpheme slot; the non-associated phonemic material must be left out.

(52)

a.	'r ä	g g ä β ä	r ä g ä β ä	g g ä β ä	= r ä.~'g a-g. g ä. β - ä
	CV + CV + C	V CV	CV + CV +	C V CV CV CV CV	
					“it sagged completely”
b.	'r ä	g g ä β ä	r ä g ä β ä	g g ä β ä	= * r ä. ~gä a - g. g ä. β ä
	*				
	CV + CV + C	V CV	CV + CV +	C V CV CV CV CV	

³⁶ Due to the syllabification rule of the language, but this process of breaking two identical consonants of a coda into two consecutive syllables works only for polysyllabic stems as the syllabification rule of the language don't break heavy syllables of a monosyllabic stem into two separate syllables .



What we observe in 52 (b) and (d) is that extra non-associated phonemic melodies and skeleton slots are not discarded which violates the second condition. Instead, the extra non-associated phonemic melodies are linked (52b) to the CV template skeleton triggering non-canonical syllable pattern of the Amharic internal reduplicant. In the above examples 52 (b) and (d), furthermore, the syllable structure of the language is violated as Amharic do not have a /*CVVC/ or /*CCCCVC/ syllable pattern since syllable onset four identical consonant clusters are not allowed. (Sande (2015); Leslau (1995)).

This condition demonstrates or captures the process of CV internal reduplication on monosyllabic stems. The C slot of the infixal skeletal template is faced with a non-split geminated coda in the phonemic copy of the stem, unlike other stems like bi-, tri- and quadrisyllabic, which in these cases the syllabification rule breaks the coda into two consecutive syllables making the C slot associate the singleton coda in the base of the phonemic copy. The following example will illustrate the above observation:

(53)

Root	Stem	Reduplication	
k'äyy	k'äyy	k'ä.~'ya-yy	*k'ä yya yy
		red~PL	
		“red ones”	

The following table will summarize the occurrence of this vowel and its interaction with the vowel phonemes of the base or phonemic copy in the stem.

	The Prespecified [+SYLLABIC] Pho- nemic melody	Vowel of the base or Phonemic copy
1	- /a/ -	- /a/ -
2	- /a/ -	- /ä/ -
3	- /a/ -	- /o/ -
4	- /a/ -	- /u/ -

Table 6 1: Interaction between the prespecified vowel and the vowel of the phonemic copy

Adopted from Sande (2015)

As the above table tries to present, irrespective of the quality of the vowel of the phonemic copy, the V skeletal slot of the infixal reduplicant introduces the [+SYLLABIC] [+LOW] phonemic melody and this phonemic feature takes precedence over any other [+SYLLABIC] “distinctive features” from the stem.

Let me demonstrate now how the process of prespecification and association of an independent [+SYLLABIC] phonemic melody to the V slot of the CV reduplicant template works (as in 55a, c and e) and the ungrammaticality of the forms if the vowel of the V slot in the CV skeletal morpheme is associated from the phonemic copy of the stem rather than being prespecified (as in 55b, d and f).

(55)

	Root	Stem	Reduplication	
a.	'säffi	'säf.fi	sä.~'fa-f.fi	*sä~fi-ffi
			wide-INT	
			“very wide”	
b.	√lws	'läw.wä.sä	lä.~'wa-w.wä.s-ä	*lä~wä-wwäsä
			knead:PRF~ITR-3 rd .SG.M	
			“he kneaded repeatedly”	

f. 's ä β r o s ä β r o β r o
 * | | | | | | | | / | | | =* s ä.~'βo-b.r o
 C V + C V + C C V C V + C V + C C V C V C V C C V

The above examples show that it's only the [+LOW] Phonemic melody that should be pre-specified in the V slot of the CV template. The prespecification of this vowel takes priority over any other vowel which is present in the base or the phonemic copy. Example 56 (b,d and f) demonstrated that overriding the prespecification rule of condition C and associating [+SYLLABIC] phonemic melodies from the phonemic copy leads to an ungrammatical construction.

The prespecification of the vowel /a/ is common among Ethio-Semitic languages. What can be said from these examples is that the low vowel is introduced when the C slot of the internal C-V ("C-a" as used in Rose (2003)) reduplicative template associates the second radical of the phonemic copy of the verbal stem³⁷. The only visible difference, besides the phonological changes, here in these examples is that unlike most of Amharic internal reduplication, the infixing CV reduplicant do not target heavy (i.e. closed by geminates) syllables as a landing site. The following examples of verbal frequentatives from three Ethio-Semitic languages: Tigre (North Ethio-Semitic) and Harari and Chaha (South Ethio-Semitic) taken from Sharon (2003, pp. 04-05) demonstrate the above observation:

(57)	Stem	Reduplication	"Gloss"
a. Tigre	dəgm-a:	də-ga:-gəm-a:	'tell
b. Harari	kətəf-a	ki-ta-təf-a	'open'
c. Chaha	kətəf-ə-	ki-ta-təf-ə-	'open'

(Rose, 2003:04-05)

³⁷ What is observed here is that in these forms from the three languages, the verb classes may probably have lost the gemination of the second radical which is preserved in Amharic Type B verbs of the cognates like /kfft/ "open" with the obvious metathesis of the second and third radical.

CONDITION D

This condition is stated in Marantz (1982) as follows:

“Linking of the phonemic melody to the reduplicating skeleton either begins with the leftmost phoneme of the melody linking to the leftmost C-V slot in the skeleton eligible under Condition A and proceeds from left to right or begins with the rightmost phoneme of the melody linking to the rightmost C-V slot of the skeleton and proceeds from right to left” (Ibid:447)

This condition illustrates the different possible directions of marked or unmarked “phoneme-driven” linking of the phonemic melody from the phonemic copy of the stem to the CV skeleton template. To use Marantz’s expression, this condition, “... determines which phonemes and CV slots are discarded when there are not enough CV slots to link to all the phonemes or not enough phonemes to link to all the slots” (Marantz, (1982, p. 450)) He has further distinguished two sub-conditions under this condition: “Condition Di” and “Condition Dii”.

Condition Di: Direction of linking

This condition specifies the unmarkedness or markedness of the direction of linking of phonemic melody from the phonemic copy of the stem to the CV reduplicant template. The unmarked linking is explained in Marantz, (1982, p. 450) and can be paraphrased here as:

“a general trend that a suffix reduplicant CV copying its melody from right to left and a prefix CV skeleton from left to right, respectively.” The marked linking is the exact opposite of this general trend where a suffix reduplicant CV copies its melody from left to right while a prefix CV skeleton copies its melody from right to left.

Once we defined these conditions, let’s see if we can determine the direction of copying as marked or unmarked in Amharic. The Amharic CV reduplicant template is infix to the left of the base or the phonemic copy of the stem. Thus, since it associates the singleton coda of the base (as dictated in condition B), we can safely assume the linking of phonemic melodies to the CV template as unmarked left to right association where the direction of linking takes place from the leftmost phonemic melody to the rightmost phonemic melody of the phonemic copy and any phonemic melody or CV slot which is left unassociated is discarded. This general principle of association works regardless of the number of syllables in the stem. Let me demonstrate this using example from my corpus:

(58)

Stem	Reduplication	
a. 'k'äç.ç'in	k'ä.~'ç'a-ç'.ç'in slim~PL “slim ones”	* k'ä.~na-ç'.ç'in
b. tin.niʃ	tɪ.~na-n.niʃ small~PL “small ones”	* tɪ.~ʃa-n.niʃ

These examples can be represented autosegmentally as follows:

(59)

<p>a. 'k' ä ç ç' i n 'k' ä ç' i n ç' ç' i n</p> <p> \ / → \ / </p> <p>CV + CV + C VC CV + CV + C VC</p>	=	<p>k' ä.~'ç'a-ç'.ç' i n</p> <p>CV~CV-C CV C</p> <p>“slim ones”</p>
<p>b. 'k' ä ç' ç' i n 'k' ä ç' i n ç' ç' i n</p> <p>* \ / → / \ / </p> <p>CV + CV + C VC CV + CV + C VC</p>	=*	<p>k' ä.~na-ç'.ç' i n</p> <p>CV~CV-C CV C</p>
<p>c. 't i n n i ʃ t i n i ʃ n n i ʃ</p> <p> \ / → \ / </p> <p>CV + CV + C VC CV + CV + C VC</p>	=	<p>t i.~n a-n. n i ʃ</p> <p>CV~CV-C CV C</p> <p>“small ones”</p>
<p>d. 't i n n i ʃ t i n i ʃ n n i ʃ</p> <p>* \ / → / \ / </p> <p>CV + CV + C VC CV + CV + C VC</p>	=*	<p>t i.~ʃ a-n. n i ʃ</p> <p>CV~CV-C CV C</p>

CHAPTER SEVEN: SUMMARY AND CONCLUSION

In this section, I will try to recapitulate the major points discussed in the previous parts of the thesis. The study tried to look at the formation of internal partial reduplication in Amharic employing the Marantz's mode (1982) "Copy and Association" (CAM) which subsumes the process of reduplication under the broad process of word formation. It specifically considers reduplication as an affixation process where the reduplicant has a different and distinct CV skeleton template and its unique feature, which makes it peculiar from other affixation processes, is that it copies and links to the template the phonemic melody from the phonemic copy of the stem based on four conditions as stated in Marantz (1982).

Sande and Hedding (2014 and 2015) attempted to analyze Amharic internal reduplication through a heavy syllable approach where they draw a direct link between Amharic syllable weight (i.e. in this case syllable final coda gemination), stress and internal CV reduplication. They analyzed Amharic stress as involving an alternation of odd-numbered syllables stress. (Sande and Hedding, 2014) However, this pattern, according to Sande and Hedding (2014 and 2015) is overridden when there is a heavy syllable in the stem, which is a syllable closed by a geminate coda. Thus, heavy syllables attract stress and CV internal reduplication. This led to the conclusion that only stems with a heavy syllable can undertake internal partial reduplication. Marantz's model can handle these stems (i.e. stems with heavy syllables) and also other stems (i.e. stems without heavy syllable, but undertake infixation of the CV reduplicant) which are left unaccounted for in the works of Sande and Hedding (2014 and 2015) and Rose (2003).

I have also tried to demonstrate the single most important failure of this approach as it did not account for verbal and nominal stems which lack heavy syllables, but still undertake an internal partial reduplication mostly to express grammatical functions like plurality and reciprocity.

Rose (2003), mainly focusing on the frequentative, arguing that a simple infixation hypothesis cannot capture the process of internal reduplication in Ethio-Semitic in general and Amharic in particular, for the output has a different template than the input and it doesn't always maintain the morphophonological form of the input (specially gemination and vowel qualities of the input), she proposed her own approach of analyzing internal frequentative formation in Amharic which,

“... combines word-based morphology with additional templatic constraints as well as crucial reference to the root” (Rose, 2003, p.3).

Although I did not focus on her approach, I have tried to show that the alleged problems of lack of faithfulness and identity on the part of the output in the frequentative formation is not more than a pseudo-problem, especially when we approach it broadly with the morphophonological rules of the language, and I have invoked the position of Marantz on this specific point that this will cease to be a problem when we examine the grammars of the reduplicating languages Marantz, (1982, p. 460).

I, following Marantz (1982), maintain that internal partial reduplication in Amharic is a process of infixation. What is unique about this process in Amharic is that the [+SYLLABIC] phonemic melody is prespecified in addition to the linking of the [-SYLLABIC] phonemic melody from the phonemic copy of the stem. The CV internal reduplicant template, after being infixated to the left of the phonemic copy (more specifically to the base), links or associates the phonemic melody of the phonemic copy of the stem. Thus, this study did not focus only on stems with heavy syllables, but others with light syllables, and used a wide range of grammatical formations (not only limited to frequentatives) to show that the infixation hypothesis can account for these exceptions in the analysis of previous scholars.

The CV internal reduplicant template split and used the rhyme of the closed syllable (i.e. both heavy and light) as a landing site, and is inserted to the left of the base and links and associates the [-SYLLABIC] phonemic melody from the phonemic copy of the stem. If the closed syllable is heavy, then its coda is divide because of the syllabification rule of the language, then the previously closed syllable (i.e. both heavy and light) loses its coda and becomes open, and the stress is transposed to the newly formed closed syllable (i.e. both heavy and light) with the reduplicant CV.

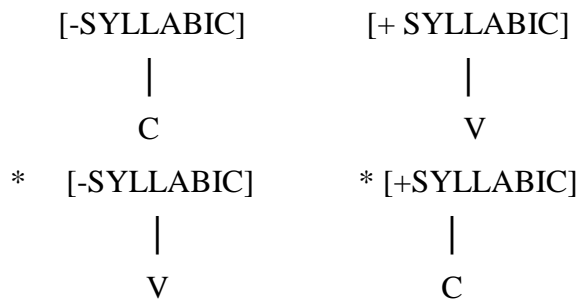
I have also demonstrated the whole process of copying the base and association of phonemic melodies from the phonemic copy to the CV template skeleton using the four conditions stipulated in Marantz (1982).

The following section will try to summarize the discussion presented in previous chapters. Some of the main concepts drawn to form these generalizations are adopted from Alec Marantz`s (1982) notion of reduplication:

Summary of the major findings of this thesis

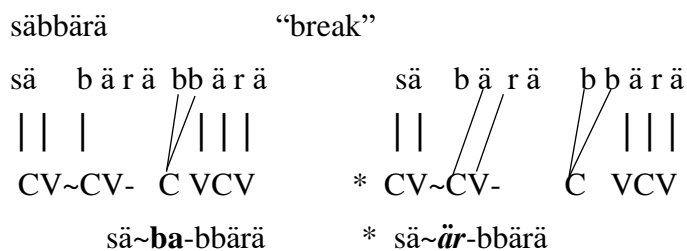
Condition A

This condition states that only a distinctive feature with a [+SYLLABIC] and [-SYLLABIC] associates with V and C slots, respectively, of the CV Skeleton template.



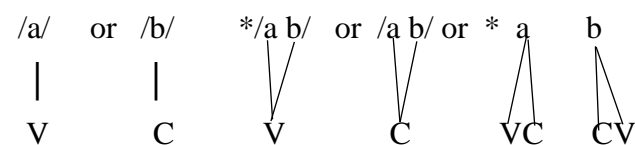
This condition is expressed in Amharic internal reduplication using the following example:

Example:



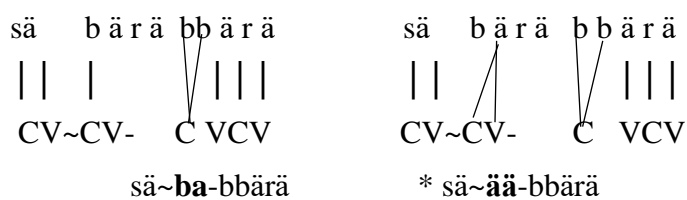
Condition B

This condition states that a single phonemic melody or a single skeleton should be linked to a single slot in the CV template skeleton and a single phonemic melody in the phonemic copy, respectively.:



The following example will show the application of this condition in Amharic data

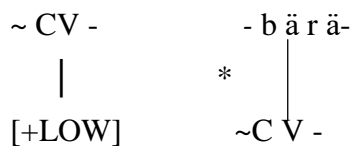
Example:



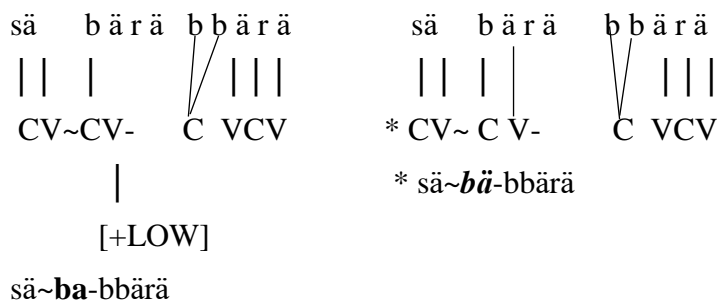
Condition C

This condition stipulates that certain distinctive features (i.e. phonemic melodies) takes priority over others which are already present in the phonemic copy of the stem. A prespecified phonemic melody precedes every other segmental feature of the phonemic copy of the stem. This in Amharic is a [+LOW] vowel. Thus, the V slot of the CV template doesn't link its phonemic melody from the phonemic copy of the stem, it rather is prespecified for [+LOW] vowel.

This prespecification rule can be demonstrated in Amharic by the example below:



Example:



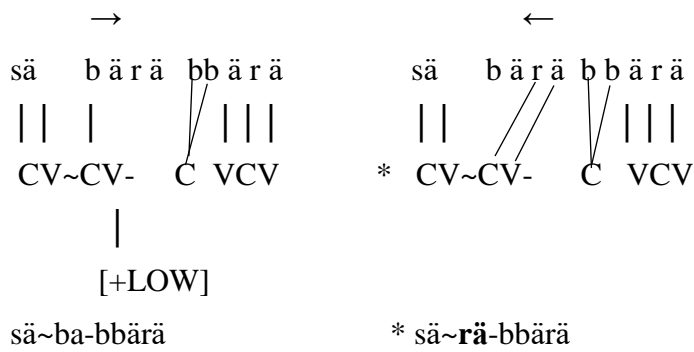
Condition D

Unmarked Under Condition Di

This condition states that Linking of the phonemic melody to the reduplicating skeleton either begins with the leftmost phoneme of the melody linking to the leftmost C-V slot in the skeleton eligible under Condition A and proceeds from left to right or begins with the rightmost phoneme of the melody linking to the rightmost C-V slot of the skeleton and proceeds from right to left. Based on this procedure, any slot or phonemic melody which is unassociated is discarded.

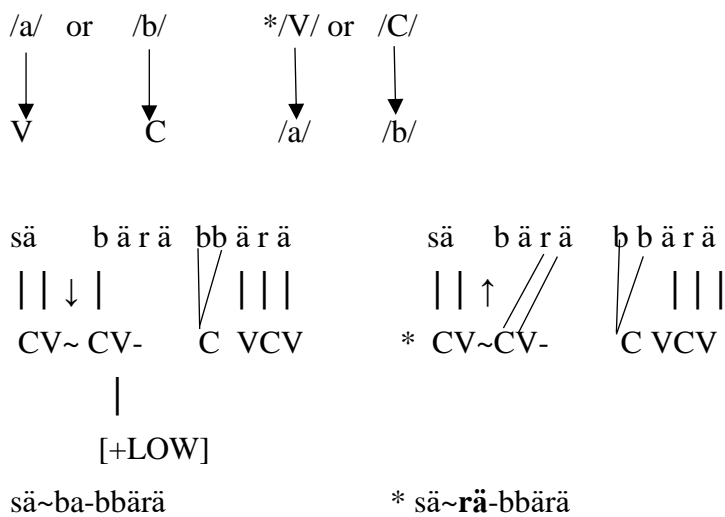
The linking in Amharic is unmarked under condition Di where the CV template skeleton links from the leftmost to the rightmost phonemic melody from the phonemic copy of the stem. Thus, in the example below the phonemic melodies, /- ä-/ , /-r-/ and /- ä-/ in the phonemic copy /-b ä r ä/ are unassociated and are, therefore, discarded.

Example:



Condition Dii

The scanning procedure looks for an eligible slot in the CV template skeleton for each linked phonemic melody from the phonemic copy not eligible phonemic melodies for each slot in the template skeleton.



Template of the reduplicated stem

Mono-syllabic

CV~CV-CC

Example: k'äyy “red”
k'ä.~ya-yy “red ones”

Bi-syllabic

CV~CV-C.CVC

Example: wäf.ram “fat”
wä.~fa-f.ram “fat ones”

Tri-syllabic

CV~CV-C.CVCV

Example: säb.bä.rä “break”
sä.~ba-b.bä.rä “break into pieces”

Quadri-syllabic

CVCV~CV-C.CVCV

Example: mä.zäg.gä.βä “he registered”
mä.zä~ga-g.gä.βä “he registered repeatedly”

The following table will specifically summarize the position of the heavy and closed syllable (i.e. the base) where the phonemic melodies are copied and linked to the CV skeleton template and the landing site for the Amharic CV reduplicant, for the position of the closed syllable (i.e. either a heavy (CVG) or light (CVC)) varies in the stem.

Stem	Closed Syllable
Monosyllabic	<i>The singleton coda of the initial syllable</i> näçç’ “white” nä~ç’ a-çç’ “white ones”
Bisyllabic	<i>Singleton coda of the penultimate syllable</i> bäs.sa “he pierced” bä.~sa-s.sa “he pierced repeatedly”
Trisyllabic	<i>Singleton coda of the antepenultimate syllable</i> sä b .bä.rä “he broke sä.~ ba -b.bä.rä “he broke into pieces”
Quadrisyllabic	<i>Singleton coda of the antepenultimate syllable</i> tä.kät.tä.lä “he stalked” tä.kä.~ ta -t.tä.lä “he stalk continuously”
Landing Site and the base	<i>The split rhyme of closed (both heavy and light) syllable of the stem.</i>

Table 7 1: Copy and landing site for Amharic reduplicant

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