Reduplication in Akan

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Dedication

This thesis is dedicated to:

- ➢ Dr. Alfred Barimah of the Economics Department, University of Ghana.

- ➢ My parents: Nana Kwaku Boakye Yiadom, Akyeamehene of Ejisu

  Akyawkrom and Comfort Sarbeng.

Acknowledgements

Abstract

This thesis is a study of reduplication in Akan, a Kwa language spoken in Ghana, West Africa and some parts of Cote D'Ivoire. Grounded within the two frameworks; autosegmental phonology and optimality theory, this thesis analyzes the phenomenon both from a formal viewpoint where I analyze the morphophonological properties of reduplicated forms in the Akan language and also from a functional point of view where I discuss the functions (syntactic, semantic and pragmatic) that these reduplicated forms perform in the language.

Chapter one presents a brief introduction to the Akan language and its speakers, and a general introduction of the topic, reduplication, as it pertains across languages.

Chapter two deals with a review of the frameworks adopted for this study and also of some aspects Akan phonology, which are considered to be necessary for a better understanding of reduplication in Akan. Aspects such as Akan sound inventory, vowel harmony, tone and the structure of the Akan syllable are reviewed in this chapter.

Chapter three presents the formal analysis of reduplication in Akan focusing on words from the classes: nouns, adjectives, numerals and verbs. The discussion focuses on the morphophonological properties of the reduplicated forms. An earlier analysis of reduplicated forms in Akan by McCarthy and Prince (1995) that focused only on verbs with CV syllable structure is found to be untenable so an alternate analysis that encompasses other word classes is proffered based on attested data.

The issue of what happens to tone when a form is reduplicated in a tone language like Akan is discussed in Chapter four. The chapter examines whether the interaction

between reduplication and prosody allow for the transfer of prosodic features such as tone along with the reduplicant.

Chapter five focuses on the analysis of the functions that reduplicated forms in Akan perform. The functions, which includes reduplicating as a means of lexical adjustment, to indicate the attributive and predicative use of a word, to indicate plurality of subject and object respectively, derivationally to change the class of a word, as a means of attenuation, augmentation (to indicate intensity, frequency, repetition), emphasis and to imitate sounds are discussed in this chapter.

Chapter six contains a general summary of the thesis.

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APPENDIX: List of abbreviations/TypeCraft Glossing tags

ADJ   Adjective

ADVm   Adverb of manner

ADVplc   Adverb of place

ASS   Associative

ATR   Advanced Tongue Root

COMP   Complementizer

COND   Conditional marker

CONJ   Conjunction

CONJC   Coordinating Conjunction

COP   Copular verb

Def   Definite

Det   Determiner

DEM   Demonstrative

FUT   Future tense

H   High tone

INDEF   Indefinite

IPHON   Ideophone

L   Low tone

LOC   Locative

MOD	Modal verb
N	Noun
NEG	Negative
Np	Proper noun
Nrel	Relative noun
NUM	Numeral
OBJ	Object
OCP	Obligatory Contour Principle
OT	Optimality Theory
PAST	Past tense
PFV	Perfective
PL	Plural
PN	Pronoun
PNrefl	Reflexive pronoun
POSS	Possessive
PRF	Perfective
PRT	Particle
RED	Reduplicate
REDP	Reduplicant
REL	Relative

SBJ Subject

TBU Tone-bearing Unit

TC   TypeCraft

UR   Underlying representation

V   Verb

Chapter One

Introduction

1.1 The Language and its people

Akan is a language spoken in Ghana, West Africa. It belongs to the Kwa group of the Niger-Congo language family. It is spoken as a first language in six (Ashanti, Eastern, Central, Brong Ahafo, Western and Volta) out of the ten (10) regions in Ghana.

"The Akan people are found mainly in the southern half of Ghana and in neighboring Cote d'Ivoire. Population estimates available in March 2007 show that Ghana had a population of 22, 409, 572 people of which 49.1% (approximately 11,003,000) were Akans, and that Cote d'Ivoire had a population of 17, 654, 843 people of which 42.1% (approximately 7, 433,000) were Akans" http://www.twi.bb/akan.php.

It is also estimated that 44% of the population of Ghana use Akan as a second language. In terms of language use, Akan is virtually used in almost every sector of the Ghanaian society, from education to trade and commerce, politics, judiciary, arts, religion and the media and so on.

"Three of its dialects, Akuapem, Asante and Fante have achieved literacy status. Each has a written form which reflects the peculiarities of the particular dialect, so that it is not easy for an Asante speaker who does not speak Fante to read a text written in Fante and vice-versa, even though the two dialects are mutually intelligible" (Dolphyne 1988: xi).

I will therefore refer to Asante, Akuapem and Fante as the main dialects of Akan. However all the examples used for this work will be drawn from Asante, my native dialect.

A Map of Ghana showing the various languages and the areas in which they are spoken.

Copied from http://www.ethnologue.com/map/GH

1.2 Reduplication

Quite an extensive amount of work has been done on reduplication across various languages in the world that exhibit the phenomenon. Some of the various definitions of the phenomenon as found in the literature are presented below:

In the words of Dolphyne (1988: 124), reduplication is a type of compound-formation, which consists of the repetition of the whole or a part of a stem". She further affirms that reduplication is a common process of word formation in Akan.

Kager (1999: 194) defines the phenomenon as follows:

From a purely morphological view reduplication is 'simply' a kind of affixation both in its morpho-syntactic contribution (it forms morphological categories, such as plural), and in its linear position with respect to the stem (preceding it, as a prefix, or following it as a suffix). But from a phonological viewpoint, the special property of reduplication is that the reduplicative affix is not fully specified for segmental content. Its segmental content is copied from the stem that undergoes reduplication. Reduplication is therefore by its very nature a phenomenon involving phonological identity between the 'reduplicant' and the 'base' to which it adjoins.

Reduplication refers to a process whereby a whole construction in question or part of the construction in question is reiterated to form a new construction – the former being a total reduplication whereas the latter a partial reduplication. (Huei-ling 2006: 483)

Reduplication is "a common word-formation strategy, whereby a word has part of itself (or, in some cases, its entire melody) affixed to create another related word". (Roca 1994: 12)

"Reduplication is a morphological process which repeats the morphological base entirely or only partially" (Haspelmath 2002: 274).

Reduplication is defined as a pattern where the double or multiple occurrence of a sound string, syllable, morpheme, or word within a larger syntagmatic unit is in systematic contrast with its single occurrence, with the iterated elements filling functionally non-distinct positions" (Moravcsik 1992: 323 (cited in Kajitani 2005: 94)).

In linguistic studies, the term Reduplication is generally used to mean repetition of any linguistic unit such as a phoneme, morpheme, word, phrase, clause or the utterance as a whole (Koul (s. a)).

Reduplication is a linguistic form, which contains systematic non-recursive repetition of phonological material for morphological or lexical purposes (Mattes, Veronika 2006: 4).

Perhaps a definition that encompasses the functional (semantic) nature of reduplication is the one given by Russell (1997: 107); "Many languages mark certain meanings by copying all or part of the stem, a phenomenon known as reduplication".

1.2.1 Types of Reduplication

Mattes (2006: 6) identifies "two relevant levels for the categorization of the different types of reduplication – be it a cross-linguistic or language internal study, i.e. the formal and the functional level(s)" of classification.

1.2.2 Formal

The formal classification talks about the two basic reduplication types: full reduplication and partial reduplication. The two (full/partial) are based on the size of the reduplicant. With regards to full reduplication, the whole form or size of the base is repeated or copied in the reduplicant. Some examples are given below:

a. boin[1] – 'slow'   → boin-boin 'slowly'

b. giriga[2]– 'short'   → giriga-giriga 'very short'

c. kawosi[3] → kawosi-kawosi 'bathe'

d. koma → koma-koma 'paddle'

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[1] This is a Dagaare example taken from Dansieh (2011: 168)

[2] This is a Gurene example from (Abakah, Caesar & Ababilah 2010: 138)

[3] c. and d. are examples from Axininca Campa (Kager 1999: 254) an Arawakan language spoken in Peru (Kager 1999: 254)

Akan reduplication basically copies the entire base in the reduplicant, except in a few instances where some sound modifications occur. Let us consider the following examples:

1. dabi 'a certain day'→ dabi-dabi 'someday'

2. tɕin 'roam' → tɕin-tɕin

3. ntɛm 'fast' →ntɛm ntɛm

4. pɔn 'close' → pʊn-pɔn

5. ka 'bite' → kɪ-ka

Examples 1-5 basically copies the base segments in the reduplicant without any modifications to the segments but in 4 and 5, the base vowels are modified in the reduplicant: they change from [-High] to [+High].

 As will be seen in subsequent chapters, the reduplicant in Akan is equal to an entire word.

Partial reduplication on the other hand means that "a portion of the simplex form, smaller than the whole, is copied" Mattes (op. cit). The copied 'portion of the simplex form' can be a syllable or more than one syllable from a polysyllabic word as in the Washo examples (Kager 1999: 230) below:

e.   /RED + wis-i/ wis-wi.si 'it's squeaking'

f.   /RED + wed-i/ wet-we.di 'it's quacking'

g.   /RED + bag-i/ bak-ba.gi 'he's smoking'

h.   /RED + šub -i/ šup-šu.bi 'he's crying gently'

In Washo, an endangered Native American language spoken in the USA, the reduplicant prefix, a heavy syllable, copies the first CVC string from the base.

1.2.3 Functional Classification

Although most of the definitions considered above seem to suggest reduplication as a morphological or phonological phenomenon, it is also done to perform other linguistic functions, which can be syntactic, semantic and pragmatic.

From a cross-linguistic comparative view as Mattes (2007: 9) puts it, the " 'typical' functions of reduplication can be found: The procedure is most frequently associated with the broader categories of plurality, diminution and intensity and as echoed by Dansieh (2010: 164) reduplication can be considered "as a morphological process with certain grammatical functions such as plurality, intensification, iteration and augmentation".

The categories (plurality, diminution and intensity) as further explained by Mattes, can refer or apply to all word classes and all major lexical classes with some language specific constraints and as will be demonstrated in chapter five, words from classes such as nouns, adjectives, numerals and verbs are reduplicated in Akan and reduplicated forms from each of these classes perform various functions which ranges from lexical adjustment, augmentation, emphasis, imitation, predicative and attributive use of adjectives and so on and so forth.

1.2.4 Other Types of Reduplication

Other forms of reduplication can also be identified. One of such types is Contrastive Focus reduplication which involves "the copying of words and sometimes phrases as in it's tuna salad, not SALAD-salad, or Do you LIKE-HIM-like-him?" Gomashie et al (2004: 308).

Unlike reduplication in Akan, contrastive reduplication as argued by Gomashie et al "is a phenomenon of colloquial English" and "is of course much rarer in written corpora". Reduplicated forms in Akan are seen as 'WORDS-words' in the language since they are commonly used in both spoken language and written corpora.

Gomashie et al also identifies "at least six" other forms of productive reduplication which are summarized below;

    a. 'Baby-talk' reduplication, e.g., choo-choo, wee-wee

    b. Multiple partial reduplications, e.g., hap-hap-happy (as in song lyrics)

    c. Deprecative reduplication, e.g., table-shamble.

    d. 'Rhyme combinations': super-duper, willy-nilly, pall-mall, dokey-dokey, hanky-panky,…

    e. 'Ablaut combinations': flim-flam, zig-zag, sing-song, pitter-patter, riff-raff, mish-mash,..

    f. Intensive reduplication: You are sick sick sick!

In this thesis, I will not discuss these types of reduplication. However, I will refer to their (Gomashie et al) interpretation of contrastive reduplication as a means of lexical adjustment later in my discussion of the functions of reduplication in chapter 5.

CHAPTER 2

Theoretical Frameworks/Aspects of Akan Phonology

2.0 Theoretical Frameworks

This section discusses the frameworks/theories that have been adopted for the analysis of reduplication in Akan.

2.1 Optimality Theory

Optimality theory, as founded by Prince and Smolensky (1993), is a theory of generative linguistics based on the interaction of constraints.

The central idea of Optimality Theory (OT) as stated by Kager is that "surface forms of a language reflect resolutions of conflicts between competing demands or constraints. A surface form is 'optimal' in the sense that it incurs the least serious violations of a set of violable constraints, ranked in a language-specific hierarchy". (Kager 1999: xi)

Three broad groups of constraints can be identified; Alignment, faithfulness and markedness.

Alignment constraints require that the edges of two forms/constituents coincide or come together in a particular format, i.e. to the right, left or center. In other words they determine the position of constituents. Some known alignment constraints that have been used to account for the application of Optimality theory to Reduplication are Align (Affix, Rt), EDGEMOST, LEFT-ANCHORplural and ALIGN (RED, L; Wd, L) which is found in the case of Timugan Murut reduplication where the left of a reduplicant affix is required to align with the left edge of a word (McCarthy, J. J. 2006: 308). The OT account of reduplication is thus related to the concepts and processes that these labels or constraints encompass.

The faithfulness constraints require output forms to be identical (equal or similar) to their inputs. Some faithfulness constraints that have been applied to reduplication are Reduplicant=Base, BASE=INPUT, and MAX-BR, which basically talks about Base-Reduplicant correspondences.

Markedness constraints on the other hand, require output forms to go in consonance with certain "segmental or prosodic targets". For example (as will be seen in chapter 3) a verb reduplicant prefix in Akan is specified for the feature of [+HIGH] so a markedness constraint in the language will ensure that a [–HIGH] verb changes to [+HIGH] when reduplicated. Examples of the markedness constraints are *CODA, *SIBSIB, ONSET, and *i + u as in the case of Paamese reduplication where a sequence of "i + u" between the base and reduplicant is dispreferred (Russell 1997:111-114).

The faithfulness and markedness constraints are always in conflict because whereas the markedness constraints 'trigger' changes to satisfy a lexical or prosodic requirement, Faithfulness constraints "by their nature, oppose changes" and as a result inhibits any differences between the input (Base) and output (Reduplicant).

The ranking of constraints in Optimality Theory is done in a hierarchy that is specific to a particular language. That is, each language has its own way of ranking "universally accepted constraints" and it has been identified that the different ranking of the constraints is what brings about the differences in languages of the world.

The application of Optimality theoretic ideas to the analysis of reduplication in Akan will involve only constraints and candidate sets that are of relevance to the point under discussion.

2.2 Autosegmental Theory

Autosegmental theory is one of the linguistics theories that has "had some success in making even reduplication fit the generative mold, using the idea that the UR of a reduplicant was a very underspecified representation that encoded very little else than prosodic information" (Russel 1997: 108).

"Autosegmental phonology is a particular claim about the geometry of phonetic representations; it suggests that the phonetic representation is composed of a set of several simultaneous sequences of these segments, with certain elementary constraints on how the various levels of sequences can be interrelated or as we shall say, associated" (Goldsmith 1976: 28).

This theory or approach focuses on how phonological rules can change the organization of phonological representations. "In Autosegmental phonology, phonological rules are regarded as complex arrays (in principle independent) elements arranged on different levels or tiers" (Katamba 1989: 196).

Goldsmith proposed that phonological representations should be made up of different tiers or levels of segments. In other words, phonological representations are made up of more than one linear sequence of segments with each linear sequence constituting a separate tier. Elements on one tier are joined to those on another tier by means of association lines.

Some tiers/levels of representation that have been identified in the literature of Autosegmental theory are segmental tier, skeletal tier, tonal tier, timing tier, syllable tier, stress tier, and so forth. Not all of the aforementioned tiers will however be used in the analysis of reduplication in Akan. We will resort to only those that will be beneficial to the phenomenon under discussion. A representation of / tu / → [tutu] will thus be done as shown below

/tu/

Skeletal tier   C V

                                  | |

Segmental tier   t u

Copy of segments   C V C V

                                ⋮ ⋮ | |

                                t u t u

Output   C V C V

                                | | | |

                                t u t u

                             [tutu]

2.3 Source of data

In this section, I present the kind and source of data used for the study. I also present a brief account of the methodology used in collecting the reduplicated words for the analysis.

The data for the study consists of a collection of Akan reduplicated words. These words were collected from written sources (textbooks and the Asante Twi Bible) and natural conversations during my vacation in Ghana in summer 2013. Others are also drawn from sentences annotated in TypeCraft (www.typecraft.org), an online Linguistic annotation tool. My native speaker intuitions also helped me in generating some of the reduplicated words.

Additional data come from contemporary Akan songs (songs by artistes like "Akyeame" and "Nana Ampadu") that contain instances of reduplicated words.

2.4. Aspects of Akan Phonology

This section presents a review of some of the aspects of Akan phonology that are considered necessary for a better understanding of how reduplication occurs in the language. Issues to be discussed are the Akan sound inventory, Vowel harmony and Tone, as found in the literature.

2.4.1 Akan Sound Inventory

This sub-section presents a discussion of the Akan sound inventory as found in the literature. I will first present an account of the vowels inventory followed by that of the consonants.

2.4.1.1 Akan Vowel Sounds

Akan distinguishes between 9/10 oral vowels and 5 nasalized vowels. The chart below shows the Akan vowels:

Front   Back

i	u
ɪ	ʊ
e	o
ɛ	ɔ
æ	
a	

Information about the phonological features of the oral vowel phonemes in Akan is presented in table 2.1 below:

	i	ɪ	e	ɛ	æ	a	o	ɔ	u	ʊ
High	+	+	−	−			−	−	+	+
Low			−	−	+	+	−	−		
Round	−	−	−	−			+	+	+	+
ATR	+	−	+	−	+	−	+	−	+	−

Table 2.1: Feature matrix of Akan (Adopted from Ofori, 2013: 77).

All the vowels can be at word –midial and final position. In the Asante and Akuapem dialects, the front high vowels /i/ and /ɪ/ cannot be at word initial position. They however occur word-initially in the Fante dialect. Also, in all the dialects, the high back vowels; /u/ and /ʊ/ cannot occur at word-initial position.

Abakah (2004:74) argues that the set "I vowel [æ] obtains in Fante only". However, as I see it, there is evidence to prove the existence of this vowel in some words from the Asante dialect in which the vowel [æ] harmonizes with the other vowels. Words such as 'daabi' /dææbi/ which means 'no', 'ani' / æni/ 'eye', afuo /æfuo/ 'farm' and baabi /bææbi/ which means 'somewhere' all occur with the vowel [æ] and all the other vowels are +ATR as well. The only difference lies in its distribution. According to Agyekum (2009), the vowel "[æ] can occur in word final position only in some restricted words in the Fante dialect.

Even in these words, [æ] must be preceded by the vowels /i/ or /u/" as in sikæ 'money',
bisæ 'ask' and tuæ 'paid'.

In addition to the oral vowels, Akan also has five (5) vowels that are nasalized. The
nasalized vowels are shown below;

[ĩ, ã, ũ, ũ, ɪ̃]

"The nasalized vowels occur after nasal consonants in stem words but they do not occur
after non-nasal voiced consonants such as **b, d**, unless the vowel is followed by a nasal
consonant". Dolphyne (ibid: 4)

2.4.1.2 Akan Consonants

There seems not be a definite number of Akan consonants as agreed by scholars who have
delved into studies related to Akan sound inventory. Abakah (2004: 103) for instance writes
"the definitive number of consonantal phonemes cannot be found in the existing literature".
As a result of this, Adomako (2008) proposes what he calls a "unified Akan consonant
inventory chart" to encompass the proposals of "some authorities in the Akan language
including Dolphyne (1988), Abakah (1993) and an anonymous writer". I adopt this "unified
chart" to present the consonant inventory of Akan.

	Bilabial	Labio-dental	Alveolar	Pre-palatal	Palatal	Velar	Glottal
Stop	p, b		t, d			k/kʷ, g/gʷ	* ʔ
Fricative		f	s	ç (hy)			h
Labialized Fricative (voiceless)				çʷ (hw)			
Affricate				tç (ky) dʑ(gy)			

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Labialized Affricate				tɕʷ (tw) dʑʷ (dw)			
Lateral (voiced)			l				
Nasal (voiced)	m		n		ɲ (ny)	ŋ (n)	
Labialized nasal (voiced)					ɲʷ (nw)	ŋʷ (nw)	
Glide (voiced)			r		y	w	

"Unified Akan consonant inventory chart" copied from Adomako (2008:8)

Notes on the Chart

Some sounds in Akan are represented by two letters in the orthography. These sounds are basically those under pre-palatal, palatal, velar and glottal.

If a plosive is voiced, its affricate counterpart should also be voiced. For example [d/dz], [g/gy]. Also if the plosive is voiceless, its affricate counterpart should be voiceless as well as in [t/ts]

All the consonants can be at word initial and midial positions. However, according to Agyekum (2009), only five (5) of the consonants can occur at word final position in any Akan word. The five sounds capable of ending a word in Akan are /m, n, ŋ, r, w/. Also, certain consonants [p, b, t, d, s, f] can take all the ten (10) vowels. Others rather move with vowels that share some point of articulation with them. The velar stop /g/ for example, selects only back vowels and it will only select front vowels in ideophonic words such as gidigidi, gedegede and gɛdɛgɛdɛ.

2.4.2 Vowel Harmony

One of the phonological processes that I consider important for a better understanding of Akan Reduplication is vowel harmony. Vowel harmony has been prominently discussed by scholars such as Dolphyne (1988) and Abakah (2004), from whose work I take much of my insights from. Vowel harmony can be defined as the phonological process that allows only one set of vowels to appear in a word that has more than one vowel. Abakah (2004: 75) writes

"*In Akan, only vowels of the same set may occur within specified domain, principally that of a word. Hence within successive syllables of a word, the vowel sounds are generally selected from either set I or set II vowels*"

The two sets are based on tongue root harmony. The set I vowels are referred to as Advanced Tongue Root vowels (+ATR) and the set II vowels are referred to as Unadvanced Tongue Root Vowels (-ATR). These are represented below;

SET I /i, e, æ, o, u/

SET II /ɪ, ɛ, a, ɔ, ʊ/

Stewart and Leynseele (1979, cited in Abakah 2004:75) write that "….all vowels in affixes harmonize with those of the stem, so that the vowels of the whole word are all of the same set provided the word has a simple stem."

What this means for Akan vowel harmony is that vowels in both the Base and Reduplicant are supposed to share the same feature, that is either they are all [+ATR] or [–ATR]. For example the word twa/ tɕɥa/, which means 'to cut' reduplicates to twitwa /tɕɥitɕɥa/. The vowels in the reduplicated form are both [+ATR]. The vowels /ʊ/ and /ɔ/ in /tʊntɔn/ which is the reduplicated form of tɔn 'sell' are both [-ATR].

Apart from Tongue root advancement, Akan vowel harmony can also be based on lip rounding. Dolphyne (1988) labels this type of vowel harmony as rounding harmony.

Abakah (2004: 91) also refers to this type of vowel harmony as "Labial harmony". Both Dolphyne and Abakah agree that labial/rounding harmony is restricted to the Asante and Fante dialects. According to Dolphyne (1988: 19), "labial or rounding/unrounding vowel harmony also occurs in the reduplicated forms of some verbs in which the vowel of the prefix has the lip position of the vowel of the stem, even though the vowel quality may be different". I illustrate this kind of vowel harmony with the two Fante examples[4] from Abakah (2005: 92) below:

i. mʷʊ-rʷʊ-kʷɔ-t̪ʷʊw 'I am going to throw'

ii. mʲɪ-rʲɪ-kʲɛ-t̪ʲɪw ' I am going to pluck'

It can be seen from the examples above that all the vowels in the prefixal morphemes harmonize with that of the bases in terms of rounding. The first person singular morpheme 'I' is realized [mʊ] and [mɪ] to harmonize with the vowel of their respective bases. Thus, it is realized as [mʊ] in example i. to harmonize with the vowel of the base [t̪ʷʊw], which is rounded. But in example ii, it is realized with an unrounded vowel 'mɪ' when attached to a root with an unrounded vowel [t̪ʲɪw]. The same can be said of the progressive marker, which is realized as [rʊ] and [rɪ] respectively to harmonize with the rounding feature of the roots as well as the verb 'to go' which appears as [kʷɔ] when prefixed to a root with a [+Round] vowel and [kʲɛ] when it is attached to a root with –Round vowel. It is also worth noting that in both examples, the vowels also harmonize in terms of ATR.

To sum up on vowel harmony and reduplication in Akan, the form that is added should harmonize with the existing vowels in the base either by ATR and/or by rounding (+/-ROUND).

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[4] The roots are underlined

Exceptions to the Vowel Harmony Rule

The normal paradigm, as the discussion above has shown, is for every Akan word to select its vowels from one particular group based on tongue root harmony. However, there are cases where this vowel harmony rule is violated. That is, it is possible to find have both +ATR and –ATR vowels occurring in the same word. An example of words that violates the vowel harmony rule includes those listed below:

1. nkruma 'okro' → n k r u   m   a

                     ↓   ↓

            [+ATR]   [-ATR]

nkruma has two vowels, /u/ being an advanced tongue root vowel while /a/ is unadvanced.

And as will be discussed in chapter 3.3.4, the vowel harmony rule can also be violated when some words undergo reduplication. We find examples of such words below:

1. gya / dʑa/ 'leave behind' → gyigya   / dʑi-   dʑa/

                                      ↓   ↓

                            [+ATR]   [-ATR]

The base, **gya** is realized with an advanced vowel but the reduplicated prefix comes out with an advanced vowel. This results in having a reduplicant **gyigya** with vowels from different groups

Some of the environments under which the exceptions occur (Dolphyne 1988: 19-23) are summarized below:

- Some syllables with palatal or palatalized consonants can cause a violation of the vowel harmony rule. For instance, if a palatal or palatalized consonant is followed by /a/, it is usually preceded by a [+ATR] and this violates the rule as in the example of onyaeɛ 'he/she got it' below:

[Oɲaɪɛ]: here the word has a mixture of both + and – ATR vowels. /o/ is +ATR while /a, ɪ and ɛ/ are –ATR thus causing a violation of the vowel harmony rule. But as Dolphyne points out "when the palatal consonants occur before other vowels, the normal rules of vowel harmony apply". We find such an example below:

ɔbɛʤɪ 'he/she will collect it' where all the vowels are –ATR in spite of the presence of the palatal consonant /ʤ/.

- Also if we get a labialized consonant and it is followed by /a/, the vowel that comes before it should be one that is +ATR. An example is in the word osua [osʷa]'he/she is young'. Here, the labialized consonant /sʷ/ which is followed by the –ATR vowel /a/ is preceded by /o/ a +ATR vowel. We therefore have vowels with two different ATR feature in the same word and this is a violation of the vowel harmony rule that prescribes vowels of the same ATR feature to occur in the same word. The labialized consonants /kʷ/ and /ŋʷ/ as Dolphyne points out are however "not affected by this rule, and vowels occurring in preceding syllables are unadvanced like /a/.

- Nominal suffixes such as [-ni], [nʊm] and [fʊɔ] remain the same irrespective of the ATR feature of the vowels in the root they are attached to so in examples like **kununʊm** 'husbands' there is a violation of the VH rule since the root **kunu** 'husband' occurs with +ATR vowels wheras the suffix **-nʊm** occurs with a –ATR vowel.

- It is also not possible to find vowels from the same group in some compound words. So in compound words like bææbiara 'everywhere' which is a concatenation of bææbi 'somewhere' and ara 'referred to as an exclusive marker' by Amfo (2010: 197), the vowel harmony rule is violated since you have a mixture of both +ATR /æ, i/ and –ATR /a/ vowels appearing in the same word.

2.4.3 Tone

One phonological feature that is characteristic of all the Kwa languages (Akan inclusive) is tone. As a result of the pervasive nature of this phonological feature, all the Kwa languages are said to be tone languages.

In the words of Dolphyne (1988: 52), "*Akan is a tone language, which means that the meaning of a word in Akan depends not only on the vowels and consonants of which the word is made, but also on the relative pitch on which each syllable of the word is pronounced*".

Akan is a register tone language in which the two basic tones, High tone [´] and Low tone [`], are pronounced on relatively level pitch (Dolphyne (1988: 55)).

A phonological high tone (H) is normally pronounced on a relatively high pitch of the voice. A phonological low tone (L), on the other hand, is normally pronounced on a relatively low pitch of the voice (Abakah (2004: 151)).

The examples below show how the basic tone types are represented:

Da 'sleep' dá →   d ì d á

                    | | |

                  H   L H

Afe 'year' á f ì → á f ì   á f í

                   | | | | | |

                  H L   H L H H

Den 'hard   d ì ŋ̀ → d í ŋ́ d ì ŋ̀

                   | | | | ||

                  L L   H H L L

2.4.3.1 Tone-Bearing Unit in Akan

Studies on Akan tonology: Dolphyne (1988), Abakah (2004), and Obeng (1989) identify the syllable as the tone-bearing unit in Akan. "Akan does not have a heavy syllable and as a result, the syllable and the mora, in Akan crash/overlap. So apparently the mora in the context of Akan is synonymous with the syllable in Akan" Abakah (2004: 153). In other words, it is the syllable that bears tone in any Akan word.

2.4.3.2 Structure of the Akan Syllable

Dolphyne (1988: 52-53) identifies the **V**, **CV**, and **C** as the syllable types that occur in Akan. The **V** syllable consists of a nucleus only a vowel as in the word aba 'seed' in which the first syllable consists of only the nucleus:

aba → a .b a

      | | |

     V. C V

The **CV** or core syllable type consists of a consonant (onset) and a vowel that is also the nucleus as shown with the word papa the reduplicated form of pa 'good'

papa → p a . p a

    | | | |

   C V. C V

Papa 'very good' above is made up of two CV syllables.

In the words of Abakah (ibid: 154) "any **C** that is not an onset of a CV syllable constitutes a syllable (C syllable structure) in Akan". Sounds like / m, n, ŋ, w / which have "[+Sonorant] specification" can function as the nucleus or a syllable on their own so far as they are not in an onset position as shown in the examples below:

tʊntɔn 'sell repeatedly'

tʊn-tɔn → t ʊ . n . t ɔ . n

        | | | | | |

       CV C C V C

The second and fourth syllables of the word **tʊntɔn** exemplify the **C** syllable structure type in Akan.

Abakah (2004: 158) adds a fourth structural type, which he claims to be "under-reported in the literature", and refers to it as the **CC** syllable. The CC syllable is a derivation from a C1V1C2V2 type in which the C2 is a liquid, usually /r/ and the V1 a [+HIGH] vowel. In cases where the V1 is "weakly articulated or somewhat deleted" the C2 takes the place of

the elided V1 becoming the nucleus. Since tone maps to the syllable in Akan, the C2 now assuming the position of the elided V1, bears the tone, thereby leaving the hitherto CV as a CC syllable. I show with the example below;

bɩra → bra 'come'

```
b ɩ r a → b r a
| | | |     | | |
C V. C V   C C. V
  |   |     | |
  L   H     L H
```

Most current theories, as Downing (2001) puts it, predicts that the reduplicant's tone (and other prosodic information) should be faithful to the Base. We will come back to this issue of reduplication and tone (tone transfer/non-transfer in particular) in chapter four, as to whether only segments are copied during the reduplication process or both segments and prosodic features such as tone are copied.

CHAPTER THREE

Reduplication in Akan: Formal Analysis

This chapter looks at reduplication in Akan involving words from the classes; nouns, adjectives, verbs. The main aim of the chapter is to analyze the morphophonological properties of the words from the aforementioned classes using autosegmental theory and optimality theory. It will be demonstrated in this chapter that nouns and adjectives behave the same segmentally when they undergo reduplication. It will also be demonstrated that verbs behave differently depending on the height of the vowel in the base verb. This behavior of verbs, as will be discussed, stems from the fact that the vowel of the verb reduplicant is pre-specified for the feature [+HIGH] and as such a [-HIGH] base vowel has to change to a [+HIGH] vowel that shares some phonological semblances with it when it undergoes reduplication. Reduplication of other forms such as numerals, adverbs and ideophones will also be looked at.

But before I move on to look at these properties, I would like to point out to a recent work that sought to apply linguistic theory (OT) to the study of reduplication in Akan.

3.1 McCarthy and Prince 1995

Previous work done on reduplication in Akan includes Dolphyne (1985), McCarthy and Prince (1995: 82-84) and Abakah, Caesar and Ababila (2010). Dolphyne's work is basically a descriptive analysis of reduplication in Akan but a quite recent work which sought to apply a formal Linguistic theory, Optimality theory, to the analysis of reduplication in Akan is McCarthy and Prince (ibid).

In their article, *Faithfulness and Reduplicative Identity*, McCarthy and Prince analyze reduplication in Akan as an "example of (the) emergence of the unmarked" but "with somewhat richer articulation".

Following Christaller 1875 [1946], Schachter & Fromkin 1968, and Welmers 1946, they posit the following about reduplication in Akan;

"In Akan, the reduplicant is a CV prefix. The vowel of the reduplicant is always high, but it agrees with the root vowel in [ATR], [back] and (usually) [nasal]".

They also provide what they refer to as "a fairly standard analysis, which goes something like this":

"The template of the reduplicative prefix is pre-specified with the feature [+high], so it copies all properties of the base vowel except for the height specification (Marantz 1982, Lieber 1987). This prespecificational analysis, though, fails to explain why the copied vowels are attracted to an unmarked feature value, [+high]. Why don't they become mid, for instance? Indeed, under radical underspecification (v. Archangeli 1988), it would only be possible to pre-specify marked feature values, quite the opposite of the factual situation".

They analyze this change of vowel height from –HIGH to +HIGH as a case of the emergence of the unmarked:

"As a case of emergence of the unmarked, though, this example is straightforward. One constraint of Universal Grammar is *[–HIGH], which asserts the markedness of non-high vowels. This constraint is richly violated in Akan, proving that I-O faithfulness is dominant: IDENT-IO (high) >> *[–HIGH]. But the reduplicant obeys *[–HIGH], showing that B-R identity is low-ranking: *[–HIGH] >> IDENTBR (high)."

They then use the derivation of suso[5] 'seize' to compare these "relevant candidates" in the tableau below:

/RED–soʔ/	IDENT-IO (high)	*[–HIGH]	IDENT-BR (high)
a. su–suʔ	*!		
b. so–soʔ		**!	
☞ c. su–soʔ		*	*

---

[5] Suso does not mean seize in Akan and as far as I know, it has no meaning in the language. We rather have **susu** 'to measure' and **sʊsʊ** 'reduplicated form of **sʊ** 'big'

And as they further explain, other candidates fail ignominiously. In particular, the fully faithful and exact (b) has two non-high vowels when one could be spared at no cost to the top-ranked faithfulness constraint.

I am going to test these statements with examples from reduplicated nouns to see if they truly hold for reduplication in Akan.

The rest of the chapter is organized as follows: section 3.2 discusses how nouns are reduplicated and Section 3.3 discusses the reduplication of verbs. Section 3.4 discusses the reduplication of adjectives in Akan. Section 3.5 touches on how numerals are reduplicated in the Akan language while section 3.6 concludes the chapter.

3.2 Reduplication of nouns

Dolphyne (1988: 136) writes that "only plural nouns may be reduplicated and the reduplicated form is basically *a repetition* of the plural noun".

The examples given in the table 3.2a below are instances of reduplicated plural nouns in Akan.

Singular	Plural	Reduplicated	Meaning
1. asɛm	**nsɛm**	nsɛm- nsɛm	Issues
2. ekuo	**ækuo**	ækuo-ækuo	groups
3. akwadaa	**nkwadaa**	nkwadaa-nkwadaa	children
4. efie	**æfie**	æfie-æfie	homes
5. kuro	**nkuro**	nkuro-nkuro	towns
6. bea	**mmea**	mmea-mmea	places
7. dua	**nnua**	nnua-nnua	trees
8. bosom	**abosom**	abosom-abosom	deities
9. kasɛɛ	**nkasɛɛ**	nkasɛɛ-nkasɛɛ	bones

As seen from the examples in the table above, the plural form of the nouns serves as the base for nominal reduplication in Akan. However, it is not always the case that the base should be a plural noun, as Dolphyne seems to suggest. Let us consider the examples in the table 3.2b below:

Base	Reduplicated	Meaning
10. anwa	anwa-anwa	oil
11. nsuo	nsuo-nsuo	water
12. dede	dede-dede	noise
13. mmogya	mmogya-mmogya	blood
14. sika	sika-sika	money
15. amena	amena-amena	ditch
16. afe	afe-afe	annual
17. aba	aba-aba	lump

Examples 10 – 17 above are instances of singular/non-count nouns that are reduplicated. The fact that these examples are non-count nouns that are able to undergo reduplication does not mean that they are plural, as Dolphyne would want us to believe. I argue against this on the basis of the fact that there is number agreement between adjectives and nouns in the language. The number of the noun determines the number of the adjective: a singular noun will call for a singular adjective while plural nouns do same with plural adjectives.

So in example 1 below, the singular noun ataade 'dress' takes the singular adjective kɔkɔɔ

'red' while in example 2, the plural form of the adjective red agrees with the plural noun ntaade 'dresses'

1. **ataade kɔkɔɔ**

"red dress"

ataade	kɔkɔɔ
ataade	kɔkɔɔ
dress.OBJ	*red*
N	ADJ

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2. **ntaade nkɔkɔɔ**

"red dresses"

ntaade		nkɔkɔɔ	
n	taade	n	kɔkɔɔ
PL	*dress*	PL	*red*
N		ADJ	

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As already mentioned, adjectives in Akan inflect for number and there is also number agreement between nouns and adjectives in the language. This being the case, one would always expect this sort of number agreement between adjectives and nouns. Now let us look at examples 3 and 4 below:

3. **anwa kɔkɔɔ**

"red oil"

anwa	kɔkɔɔ
anwa	kɔkɔɔ
oil	*red*
N	ADJ

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4. ***anwa nkɔkɔɔ**

"red (Pl) oil"

Anwa	nkɔkɔɔ	
Anwa	n	kɔkɔɔ
oil	PL	*red*
N	ADJ	

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It is seen from table 3.2b above that anwa reduplicates into anwa-anwa. Granted that only plural nouns reduplicate as claimed by Dolphyne, one would expect example 4 '*anwa nkɔkɔɔ' to be grammatical but this does not happen in the language. Speakers of Akan will go for 3 'anwa kɔkɔɔ' no matter the quantity of red oil that the person is making reference to.

So in sum, both singular and plural or count and non-count nouns can be reduplicated in Akan.

It is also evident from the examples in the two tables that reduplication of nouns involves a

process of copying the base. That is all the segments in the base are copied in the reduplicant.

3.2.1 Autosegmental Analysis of noun reduplication

Noun reduplication in all the examples above involves the repetition of an entire word or base. The phenomenon can therefore be analyzed as the affixation of a word: RED = ω. In other words, the reduplicant in Akan has the size of an entire word; the base.

One solution to analyzing this using Autosegmental phonology, propounded by Marantz (1982, cited in Roca 1994: 14), is to "make the whole stem melody available to the skeletal affix by a copy convention". That is we make the whole segmental melody of the base available to the skeletal affix by a copy convention whereby everything in the base is copied in it.

This "Marantzian template", according to Kager (1999: 217) is a sequence of 'skeletal' segments. In the case of Akan (as the examples with reduplicated nouns show), this 'sequence of skeletal segments' would rather be a ω, to which the melodic content of the base is associated from a fully copied string.

That is we have an empty ω slot or template that is filled or occupied by segments copied from the base, i.e.:

Copy and association   output

/RED- ω/   ω +   ω   ω +   ω   ω+ ω   [ωω]

              XYZ   XYZ   XYZ   XYZ XYZ [XYZXYZ]
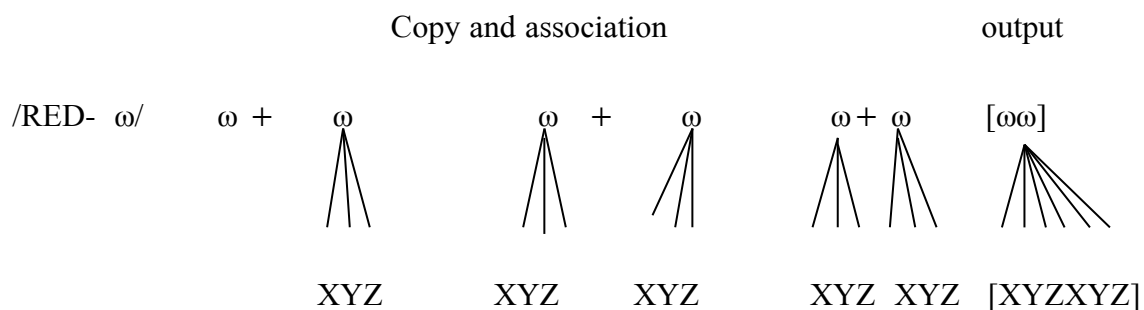
Where, XYZ are variables that refer to the string of segments that make up the word/base.

Having set /RED- ω/ → ω + ω → ω + ω → ω + ω [ωω]

XYZ   XYZ   XYZ   XYZ   XYZ   [XYZXYZ]
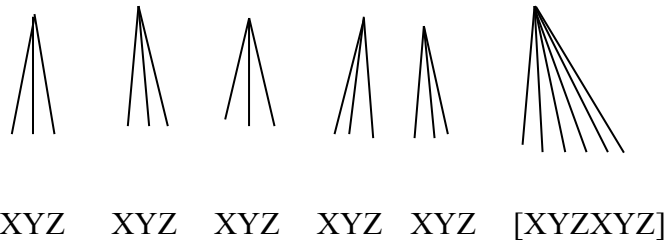
as the reduplication template for Akan, I now use it to account for the derivation of nkuronkuro;

/Red-nkuro/ → ω + ω

nkuro

ω + ω   Copy and Association

nkuro   nkuro

ω + ω   [ωω]   Output

nkuro   nkuro [nkuronkuro]
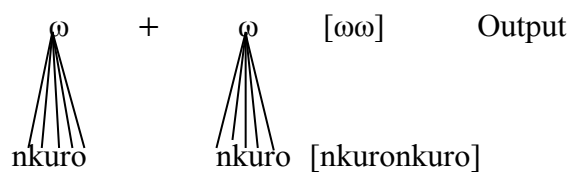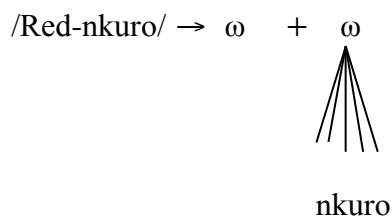
Since the reduplicant in Akan is a ω, the skeletal ω prefix is given the segmental content of the base. That is the segments /nkuro/ are copied and associated to the empty ω slot and then linked to the base melody. This leads to the derivation of the output string [nkuronkuro].

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3.2.2 OT Analysis of Noun reduplication

The autosegmental analysis presented above treats the similarity between the base and the reduplicant as a copying process whereby the reduplicant copies all the segmental features of the base.

"Rather than treating the similarity between the reduplicant and the base as side-effects of a copying process, OT treats it as the result of constraint, or set of constraints that enforces that similarity" (Russell 1997:111).

What the autosegmental analysis of nkuronkuro, and also as can be seen from the data in the tableau 3.1.1 and 3.1.2 above tells us is that Akan preserves identity between what is in the input in the output. That is the language wants the output to be similar to the input as close as possible. This suggests the existence of a faithfulness constraint; IDENT-IO (F) and this feature is highly ranked as violating it will be fatal.

The 'total copying' of the base segments in the reduplicant also suggests that the language also preserves identity between the base and the reduplicant. Thus, there should also be a constraint IDENT-BR that ensures similarity or faithfulness between the base and the reduplicant.

Constraints

IDENT-IO (F), IDENT-BR

1. IDENT-IO (F): whatever feature is in the input must be identical to what is in the output

2. IDENT-BR: The base and its reduplicant should be identical.

Together, the two constraints IDENT-IO (Feature) and IDENT-BR are adequate to account for the reduplication of nouns in Akan. There is no internal motivation to rank any of the

two constraints above or below the other since whichever way they are ranked will result in the optimal form emerging as the winner. I compare them in the derivation of *afɪafɪ* below:

/Red-afɪ /	IDENT-IO (Feature)	IDENT-BR
a. ɪfɪ-afɪ	*!	*
☞b. afɪ-afɪ		
c. ifi-afɪ	*!	*

Whatever feature is in the input must be preserved in the output and the reduplicant must remain similar as possible to the base.

Candidates, **a.** and **c.** occur with prefixes that are not identical to the input. Candidate **c.** for instance has two [+High] vowels in the prefix although the input has a [+High]. This is unfaithful to the [-High] vowels that are in the input so they violate IDENT-IO (F) and is eliminated. Candidate a. was introduced to show that altering the height specification of ant of the inputs vowels with one that agrees with it in terms of both height and ATR would still not lead to it becoming the optimal form. Candidate **b.** *afɪ-afɪ* preserves the input's identity in the output. It also preserves identity between the segments of the reduplicant and that of the base and thus emerges as the winner. This shows that the nouns always copy what is in the input in the output without any modifications whatsoever.

3.3 Reduplication of Adjectives

Like the case of the nouns above, adjectives also employ copying as a strategy for reduplication. That is the entire base of the adjective is repeated in the reduplicant. We consider some examples of reduplicated adjectives in table 3.3a below:

Base	Meaning	Reduplicated
1. pa	good	pa-pa
2. akɔnɔ	delicious/appetizing	akɔnɔ-akɔnɔ
3. kama	nice	kama-kama
4. nyaa	slow	nyaa-nyaa
5. trʊm	smooth	trʊm-trʊm

3.3a singular adjectives

The data above are examples of reduplicated singular adjectives. All the examples exhibit a total copying of the base segments in the reduplicant.

Adjectives in Akan can inflect for number. Thus we can find examples of plural adjectives in the language.

The plural adjectives, like those in table 3.3b below, can also undergo reduplication.

Singular	Plural	Meaning	Reduplicated
1. kɔkɔɔ	nkɔkɔɔ	red	nkɔkɔɔ-nkɔkɔɔ
2. titire	atitire	important	atitire-atitire
3. kɛsɪɛ	akɛsɪɛ	big	akɛsɪɛ-akɛsɪɛ
4. esini	æsini	pieces	æsini-æsini
5. tenten	atenten	long	atenten-atenten

3.3b plural adjectives

The inflection for number usually depends on the kind of noun that is being modified. "A singular noun is modified by a singular adjective even as a plural noun is modified by a pluralized adjective which takes the plural marker of a prefix" (Abakah, Caesar and Ababila, 2010: 136). Let us consider the two TC examples below;

ɛpono kɛsɪɛ no
"The big door"

ɛpono		kɛsɪɛ	no
ɛ	pono	kɛsɪɛ	no
SG	*door*		DEF
N		ADJ	DET

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In this example the adjective **kɛsɪɛ** 'big' takes a singular form since it modifies a singular noun **ɛpono** 'door'. This is however not the case in 2 below where the adjective takes a plural form because it modifies a plural noun **apono** 'doors'

apono akɛsɪɛ no
"The big doors"

apono		akɛsɪɛ		no
a	pono	a	kɛsɪɛ	no
PL	*door*			DEF
N		ADJ		DET

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According to Dolphyne (1988: 137), where it is a plural adjective that serves as the base for reduplication, the whole of the plural form is reduplicated.

The singular adjectives, as seen from those in table 3.3a, also copies the entire base segments in the reduplicant. Thus the adjectives, like nouns, also employ a copying strategy for reduplication: all the segments in the base are copied in the reduplicant.

With the reduplicative template in place, the segments copied from the base adjective will be associated to the empty ω slot and then linked to the base melody to generate the output. I account for the autosegmental derivation of *Kama* 'nice' below:

/Red-kama/ → ω   +   ω

kama

ω   +   ω   Copy and Association

kama   kama

ω   +   ω   [ωω]   Output

kama   kama [kamakama]
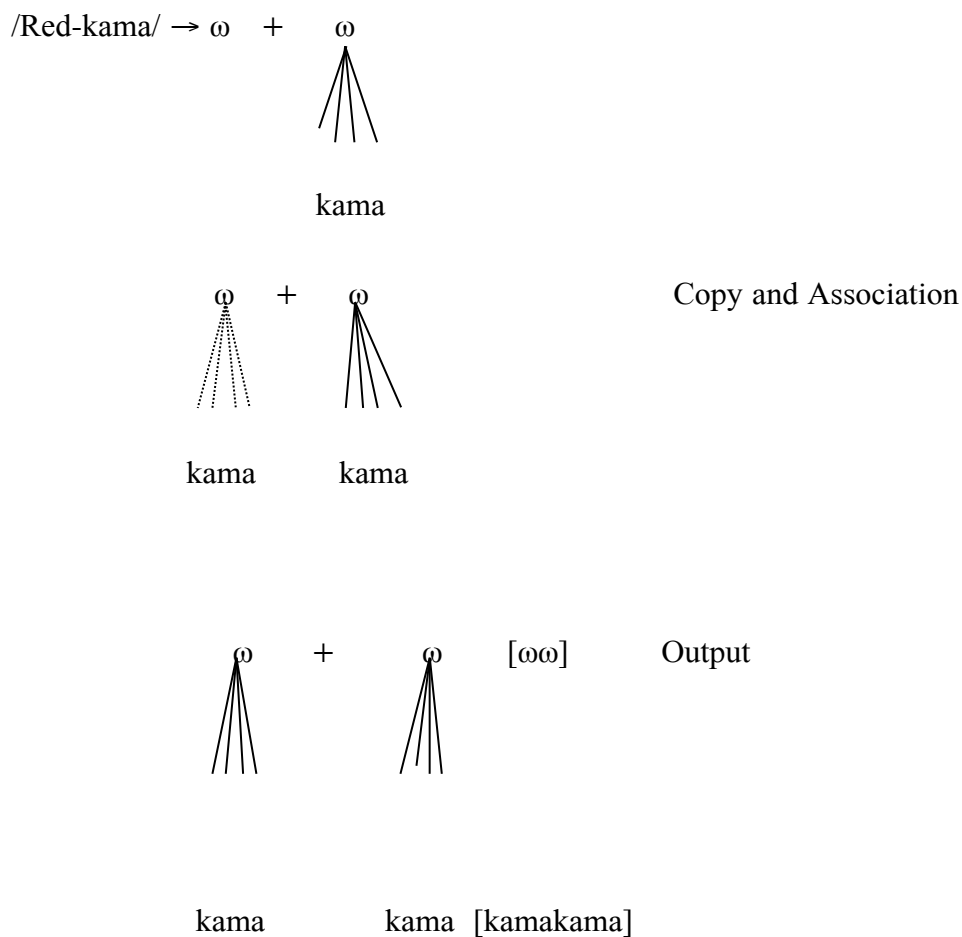
The empty ω slot is filled with the segments /kama/ which were copied from the base. The segments are then linked to those of the base to generate the output string [kamakama].

As Russell (1997:111) pointed out, rather than treating the similarity between the copy and the copied form as the outcome of a copying process like the one seen in the autosegmental analysis, OT would rather treat it as a result of constraint interaction that enforces similarity between the base and the reduplicant.

As it was done with the nouns, the results of the interaction between the constraints **IDENT-IO (F) , IDENT-BR** ensures that the reduplicant is similar to the base. I account for the derivation of the form nkɔkɔɔnkɔkɔɔ from the plural adjective *nkɔkɔɔ* 'red' in the tableau below;

/Red- nkɔkɔɔ/	IDENT-IO (F)	IDENT-BR
a. nkʊkʊʊ-nkɔkɔɔ	*!	*
b. ☞nkɔkɔɔ-nkɔkɔɔ		

From the tableau, candidate a. does not win because the reduplicant violates both IO and BR identity. The winning candidate, **b** emerges as the optimal form since its output conforms to IO identity and also there is perfect identity between the prefix and the base.

3.3.1 On McCarthy and Prince's Analysis

What I have done so far with examples from reduplicated nouns shows that the reduplicant in Akan is not a CV with the V being a [+HIGH] vowel as suggested by McCarthy and Prince but rather [ω] or an entire word.

An obvious thing to consider is the kind of data used by McCarthy and Prince in their analysis. For instance, is the data representative of the phenomenon under discussion? This is where the problem arises because all the examples used by McCarthy and Prince (1995:

82-84) and from which others like Kager (1999: 208-211) replicate are all instances of reduplicated verbs with a CV syllable structure. Even though words from the other classes such as the nouns and adjectives discussed above undergo reduplication, they are never mentioned in their work. Making such generalized claims without looking at the entirety of the phenomenon under consideration will only flaw any analysis that is done. The constraints and the rankings proposed by McCarthy and Prince and further adopted by Kager will lead to the wrong candidates emerging as optimal forms if reduplication involving words from classes such as the nouns discussed above and adjectives and numerals yet to be discussed are considered.

For instance if we were to subscribe to their constraint ranking, we would rather end up having wrongful candidates like *siki-sika emerging as winner in the case of the derivation of sika-sika from the noun sika as shown in the tableau below:

/RED– sika/	IDENT-IO (high)	*[–HIGH]	IDENT-BR (high)
☹ a. sika-sika		*!	
☜ b. siki-sika			*

Even though both candidate a and b satisfy the highly ranked IDENT-IO (high) constraint, we end up getting a wrongful winner because a which is the optimal form in the language fails to satisfy the *[–HIGH] constraint because of the presence of the non-High vowel /a/. Candidate b. however satisfy that constraint since it has an output that satisfies *[–HIGH] as well as agreeing with the ATR feature of the base vowels so it emerges as the winner though it is not the optimal form in the language.

3.4 Reduplication of Verbs

As I mentioned above, all the examples used by McCarthy and Prince in their analysis are instances of reduplicated verbs that have a CV syllable structure. I will provide an alternative analysis; this time with much more comprehensive data that covers verbs with structures other than CV.

To make the discussion of the phonological properties of reduplicated verbs easier, I will classify them into two separate groups/sets, which are shown in table 3.4a and 3.4b below:

Base	Reduplicated	Meaning
1. muna	mune-muna	To frown one's face
2. nya / ɲa /	[ɲi - ɲa]	To get something
3. pam	[pɪm-pam]	Sew
4. hyira / çira /	[çire-çira]	Bless
5. bɔ	[bʊ-bɔ]	Hit
6. fɔn	[fʊn-fɔn]	To grow lean
7. kyɛ /tɕɛ/	[tɕɪ-tɕɛ]	Share, to give out something for free
8. gyae /dʑaɪ/	[dʑei-dʑaɪ]	Stop
9. dan	[dɪn-dan]	To lean on someone/something
10. tɛ	[tɪ-tɛ]	hide

Table 3.4a

The data in 3.4a above exhibit a difference between the vowels in the bases and that of the reduplicants. I will explore this change in vowel quality by picking out **6.** /fɔn/→ [fʊn-fɔn] and **10.** /tɛ/ → [tɪ-tɛ]

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In 6. the verb /fɔn/ "grow lean" reduplicates as [fʊnfɔn]. As can be seen reduplication causes the base vowel /ɔ/ to change into /ʊ/ in the reduplicant. The question to ask here is why /ɔ/ changes to /ʊ/ and not any other vowel. I will attempt to answer this question by looking at the properties of the two vowels using the two main criteria for describing vowels phonologically; Vertical [± High] and Horizontal [±Back].

fɔn →   fʊn   fɔn

             | |

           +Back   +Back

           +High   -High

/ɔ/ and /ʊ/ are both [+Back] vowels but they only differs in terms of their vowel height in that whereas /ɔ/ is [-High], / ʊ / is [+High].

Also in 10. /tɛ/ "hide" reduplicates as [tɪtɛ]. Here /ɛ/ changes into /ɪ/ in the reduplicant. A look at their properties, using the two aforementioned criteria

tɛ →   tɪ   tɛ

             | |

          -Back   -Back

          +High   -High

reveals that /ɪ/ and /ɛ/ only differs in terms of vowel height in that whereas the copied vowel /ɛ/ is [-High], the copy /ɪ/ is [+High].

Thus in both **6** and **10**, whereas the base is a non-high vowel, the reduplicant is a high vowel. Also, granted that non-high base vowels have to change to high as evident in the data presented above, why does /ɛ/ for instance change to /ɪ/ and not any other high vowel like /i/ or /e/?, is there a special preference for the kind of high vowel that must be selected?. This is where the vowel harmony rule discussed in chapter 2.4.2 comes in. As discussed,

the normal paradigm is for every Akan word to select its vowels from one particular group based on tongue-root harmony. So if a [-High] vowel has to change to a [+High] one, it has to change to one that shares the same ATR feature with it. /ɛ/ in this case will change to /ɪ/ because aside them being [-Back], both are also [–ATR].

The changed vowel or "raised vowel" as Abakah, Caesar and Ababila (2010: 123) calls it "redundantly takes the [ATR] and place features of the base vocalism". As a result of the change in vowel height, [-High] vowels such as "/ ɛ, e, ɔ, and o/ are invariably realized as [ɪ, i, ʊ and o] respectively in the reduplicant".

I present the other set of reduplicated verbs, this time, verbs that already have a [+High] base vowels in table 3.4b below:

Base	Reduplicated	Meaning
1. 'we'/wɪ/	[wɪ-wɪ]	chew
2. 'kyim' /tɕim/	[tɕim-tɕim]	twist
3. 'sere'/sɪrɪ/	[sɪrɪ-sɪrɪ]	laugh
4. 'tu' /tu/	[tu-tu]	dig
5. woso/wʊsʊ/	[wʊsʊ-wʊsʊ]	shake
6. 'sie' /sie/	[sie-sie]	hide
7. 'hye'/çɪ/	[çɪ-çɪ]	burn
8. 'di'/di/	[di-di]	eat
9. 'hwim'/çɥim/	[çɥim-çɥim]	snatch
10. 'tie' / tie/	[tie - tie]	listen

Table 3.4b: verbs that already have a high vowel

Unlike those in 3.4a, the data in 3.4b are examples of verbs that already have a [+HIGH] vowel. It can be seen that such verbs do not change when the prefix insists that the vowel is realized as [+High]. That is the verb bases that already have high vowels maintain their vowel height while those that have non-high vowels have to change.

We can therefore conclude that the reduplicant verbal prefix has a preference for [+High] vowels; the prefix is specified for the feature +High so a [–High] base vowel has to change to a [+High] one that shares some phonological semblances with it, in this case, one that has the same ATR feature with it.

Adomako (2008: 20) sums up this loss/maintaining of vowel height during verb reduplication in the following words; "non-high vowels in the (verb) stem become high vowels in the reduplicants but high vowels in the (verb) stem maintain their vowel heights in the reduplicants".

3.4.1. Autosegmental Analysis of verbs reduplication

In 3.2.1, I advanced for a Marantzian type of template in which we have an empty ω slot that is filled or occupied by segments copied from the base. This earlier template followed from the fact that noun reduplication was basically a total copy of whatever segments that is in the base.

However, the data on verbs, which I classified into two shows that the copy (reduplicant) can differ from the copied (base) in cases where the base has a [-High] vowel. In such instances, the [-High] vowel has to change to a [+High] that has the same ATR feature with it. The conclusion made from this was that the reduplicant verbal prefix has a preference for [+High] vowels; the prefix is specified for the feature +High so a [–High] base vowel has to change to a [+High] one that shares some phonological semblances with it. We therefore need to modify the template to cater for requirement of the prefix to occur with only [+High] vowels. Thus, the empty ω slot has to be specified with the feature [+High] as shown below:

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$$\text{/RED- }\omega\text{/} \rightarrow \omega + \omega \rightarrow \omega \quad + \quad \omega \rightarrow \omega + \omega \quad [\omega\omega]$$

$$[+\text{High}] \qquad [+\text{High}] \qquad [+\text{High}]$$

XYZ   XYZ   XYZ XYZ XYZ [XYZXYZ]
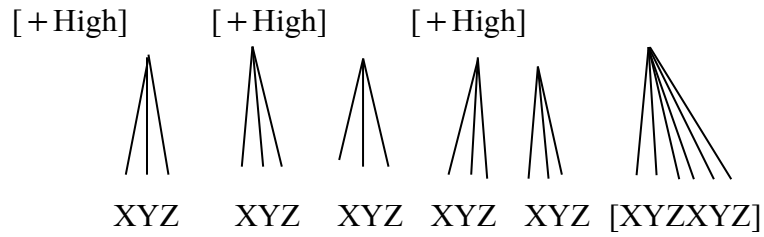
So in the case of /ɲa/ reduplicating as [ɲiɲa], the empty ω slot is already specified for highness and as such /a/ has to change to a [i] as shown below:

/Red- bɔ / → ω   +   ω

[+High]

ɲ a
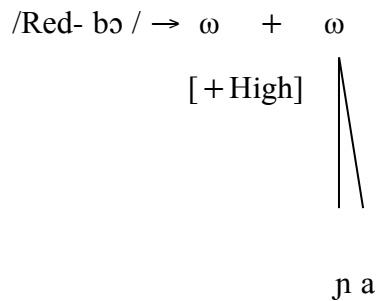
We have an empty ω slot that is ready to be occupied by segments (/ɲa/) copied from the base.

ω   +   ω

[+High]

ɲ   i   ɲ   a
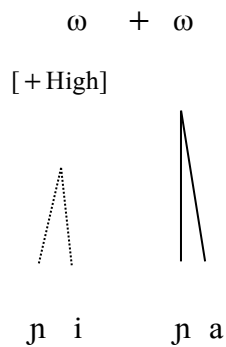
The base content is copied and associated to the empty ω slot. Following the specification of the verbal prefix for highness and also per the vowel harmony rule, the [-High] vowel by default changes to [+High] once it is copied.

ω + ω

[+High]

ɲ i   ɲ a
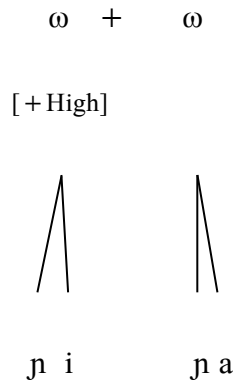
The copied segments are then linked to the base melody generating the output [ɲiɲa].

The specification for highness will be somehow redundant for verbs like those in table 3.2b that already occur with a high vowel since they don't have to change when the prefix insists that the vowel be high. An autosegmental analysis of such verbs will thus follow that of /çɥim/ reduplicating as [çɥimçɥim] shown below;

/Red- çɥim / → ω   + ω

çɥim

ω   +   ω   Copy and Association

çɥim   çɥim

ω   +   ω   [ωω]   Output

ç ɥ i m   ç ɥ i m   [çɥimçɥim]

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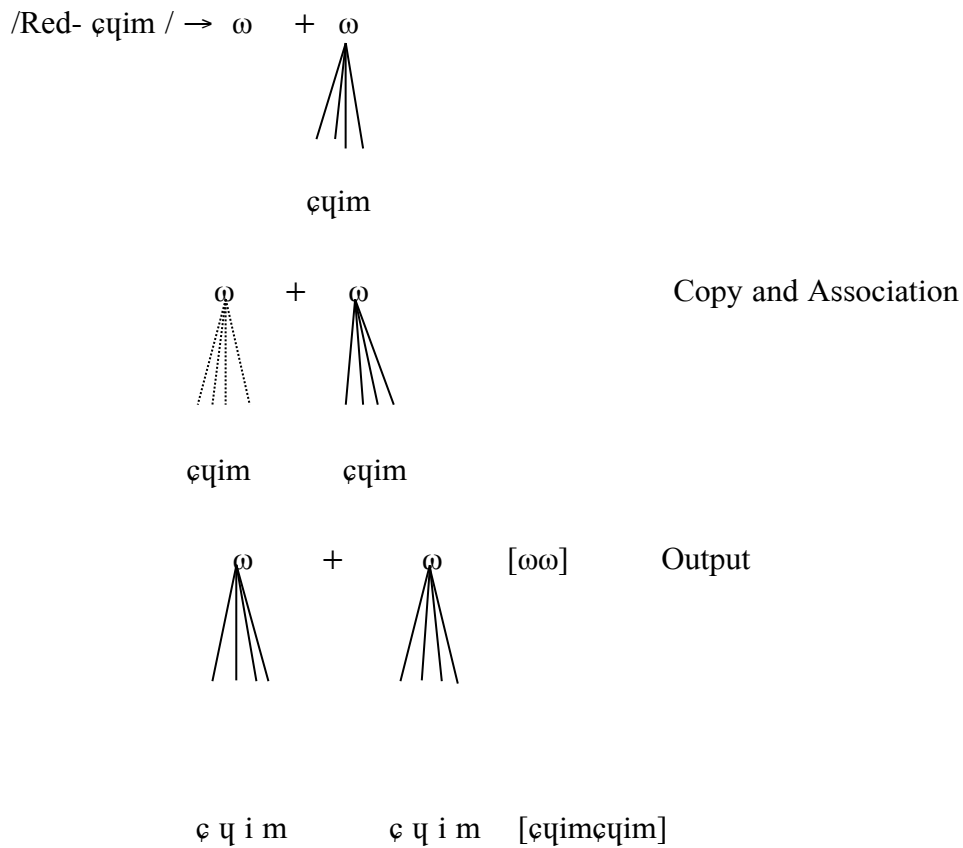
3.4.2. OT Analysis of Verbs reduplication

As already mentioned in the OT analysis of noun reduplication in 3.1.2, Akan preserves identity between what is in the input in the output. That is the language wants the output to be similar to the input as close as possible. This suggested the existence of a faithfulness constraint; IDENT-IO (Feature) to ensure that whatever feature is in the input is identical to what is in the output.

No particular feature was specified during the analysis for the nouns as they involved a 'mere' copying of the base segments but what I have done so far with the data on verbs indicates that the verbal prefix has a special requirement for the kind of vowel that should appear in it; which is the preference for high vowels.

Since the verbal prefix requires the vowel to be [+High], the identity feature here will be [+High] and this has to be specified as such so that any candidate that does not occur with a [+High] vowel will be eliminated.

IDENT-IO [+High]: the input must be identical to the output with regards to the feature

[+High]

We also assumed from the data on nouns that the language preserves identity between the base and the reduplicant and proposed the constraint IDENT-BR to ensure the similarity or faithfulness between the base and the reduplicant.

IDENT-BR: the base and its reduplicant must be identical.

Vowel harmony has been identified as an important feature that conditions the choice of the vowel in the reduplicative prefix, so in cases where the verb root occurs with a [-High] vowel and as such has to change to a [+High] one in the reduplicant, the [+High] has to agree with the ATR feature of the base vowel.

Since vowel harmony is supposed to be an agreement feature between the vowels in a word, we will need an agreement constraint to ensure that all the vowels in both the base and reduplicant agree with each other with respect to a harmonic feature: ATR or Rounding in the case of Akan.

I will thus adopt Bakovic's (2003: 10, also cited in Anane (2010: 32)) general agreement constraint AGREE [±hf]; where hf refers to the harmonic feature. So AGREE [±hf] will see to it that the vowels in both the copy and the copied will agree with each other either in terms of ATR and/or Rounding.

The importance of this AGREE [±hf] constraint will be to ensure that whiles satisfying the verbal prefix's preference for high vowels, a base that has [-High] vowel will change to a [+High] one that agrees with it in terms of [±ATR] and/or [±ROUND].

We have also seen, especially from the data in table 3.4a that where the verb base has a [-High] vowel, there is a violation of identity between the base and its reduplicant as result of the [-High] changing to a [+High] one. This presupposes that IDENT-IO (High) is ranked high above IDENT-IO (High) because the verb reduplicant prefers to rather have a [+High] vowel than to having identity between its base and reduplicant.

The modification of the constraints ranking assumed earlier for the nouns will be done as follows:

AGREE [±hf] >> IDENT-IO (High)>> IDENT-BR

These constraints are applied to the derivation of *bubɔ* below:

/RED - bɔ/ | [+High]	AGREE [±hf]	IDENT-IO (High)	IDENT-BR
a. bɪ-bɔ	*!		*
b. bɔ-bɔ		*!	
☞ c. bʊ-bɔ			*

Since /ɔ/ is a [-ATR] vowel, it is restricted to choosing or occurring in the same word with a vowel from the group /ɪ, ɛ, a, ʊ/. So in this case where the prefix requires a high vowel, it can only change to either /ɪ/ or /ʊ/. Whether it will change to either of /ɪ/ or /ʊ/ will depend on which of the two violates or differs from it minimally.

/ɔ/   /ʊ/   /ɪ/

| | |

[-High]   [+High]   [+High]

[+Back]   [+Back]   [-Back]

[-ATR]   [-ATR]   [-ATR]

/ɪ/ violates /ɔ/ in terms of two features; vowel height and rounding so /ɔ/ cannot afford to change to /ɪ/ since it is [+High] and does not harmonize with it in terms of rounding; while /ʊ/ is [+Round], /ɪ/ is [-Round].

It will be phonologically plausible to select /ʊ/ since it violates /ɔ/ in terms of one feature: backness or rounding. Violating only one feature (vowel height in this instance) will not be as fatal as violating two. Candidate a. satisfies Agree [ATR] but violates Agree [round], but

candidate c. satisfies both Agree [ATR] and Agree [round] hence the change from /bɔ/ to [bʊ] and not /bɔ/ to *[bɪ].

Also candidate b. bɔ-bɔ, which is fully faithful to the base, is eliminated since it violates the constraint IDENT-IO (High).

3.4.3 Context Dependencies

The agreement constraint, AGREE [±hf], was introduced to ensure that the vowel(s) in the reduplicant harmonizes/agrees with those in the base in terms of ATR or rounding but there are instances where adhering to it will result in the wrong candidate emerging as the optimal form. That is in some reduplicated words, the vowel harmony rule is violated so it is possible to find both +ATR and –ATR vowels occurring together as in words like gyigya[6] [dʑidʑa] which is derived from gya [dʑa] and dwidwa[7] [dʑʷidʑʷa] derived from dwa [dʑʷa]. In both words, the base vowel is [-ATR] while that of the reduplicant is [+ATR].

dʑi	dʑa		dʑʷi	dʑʷa
│	│		│	│
[+ATR]	[-ATR]		[+ATR]	[-ATR]

So applying the constraint hierarchy advanced above will result in the wrongful candidate emerging as a winner as in the tableau below:

---

[6] Gyigya means to leave (something) behind

[7] Dwidwa refers to butchering

/RED- dʑʷa /	AGREE [±hf]	IDENT-IO (High)	IDENT-BR
☹a. dʑʷidʑʷa	*!*		*
b. dʑʷadʑʷa		*!	
☚c. dʑʷɪdʑʷa			*

It can be seen from the tableau that the constraints proposed for the verbs cannot account for instances where vowel harmony is violated. A wrongful candidate **c.** wins since the prefix has a [+High] vowel and also agrees with the base with regards to the feature [+ATR]. Candidate **a.**, which is the optimal and grammatical form fails to win since it violates the highly ranked AGREE [±hf] constraint because its base occurs with a [-ATR] vowel whereas the reduplicant has a [+High].

But as mentioned in section 2.4.2b, there are some instances/environments in which the vowel harmony rule is violated (Exceptions to the vowel harmony rule). In such exceptional cases, we have to introduce context dependent constraints to cater for the violation.

One of such exceptional environments in which the vowel harmony rule is violated has to do with palatals:

If a palatal or palatalized consonant is followed by [a], it is normally preceded by a [+ATR] vowel, thus violating the vowel harmony rule.

So in the reduplication of gya [dʑa], since /dʑ/ which is palatal is followed by /a/ a [-ATR], the vowel in the prefix that comes before /dʑ/ should be [+ATR], /i/ as is found in the reduplicated form gyigya [dʑidʑa].

Also, *if we get a labialized consonant and it is followed by /a/, the vowel that precedes it should be [+ATR].*

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For dwa [dʑʷa] to reduplicate, the vowel (in the prefix) that comes before /dʑʷ/ should be [+ATR]. Guided by the verbal reduplicant prefix's preference for high vowels, it will select /i/ which shares the same roundness feature with /a/: both are [-Round].

Since the grammar of the language prefers to have vowels disobeying the vowel harmony rule when in environments like a palatal followed by /a/, it will be phonologically plausible to posit the constraint *-ATR / [PAL + a] to set up the environment under which AGREE [±hf] may be violated.

*-ATR / [PAL + a]: a palatal followed by /a/ cannot be preceded by a –ATR vowel.

Since violating this markedness constraint will be more fatal, it will be ranked above AGREE [±hf]. So in an exceptional case like [tɕʷa]→ [tɕʷi tɕʷa] where we have $+ATR$ and $-ATR$ vowels occurring in the same word , the ranking of the constraints will be as follows:

*-ATR / [PAL + a] > > AGREE [±hf] > > IDENT-IO (High) > > IDENT-BR

They are compared in the tableau below:

/Red- tɕʷa/	*-ATR / [PAL + a]	AGREE [±hf]	IDENT-IO (High)	IDENT-BR
a. tɕʷɪ-tɕʷa	*!			*
b. tɕʷa-tɕʷa	*!		*	
☞c. tɕʷi-tɕʷa		*		*
d. tɕʷu-tɕʷa		*!*		*

From the tableau, candidates **a.** and **b.** violates the highly ranked *-ATR / [PAL + a]
constraint so they are eliminated. Even though candidates c and d satisfy the highest ranked
constraint, both violates AGREE [±hf]. Although the reduplicant vowel in **c** harmonizes
with the base vowel with regards to rounding harmony (/i/ and /a/ are both unrounded), it
disharmonizes with it in terms of ATR. That is it violates Harmony once. Candidate **d.**
however violates AGREE [±hf] twice since the reduplicant vowel is both [+ATR] and
[+Round], directly opposing the base vowel which is [–ATR] and [-Round]. Violating a
marked feature once is fatal but not as fatal as twice and that is why **c.** [tɕʷi-tɕʷa] emerges
as the optimal candidate.

The modification of the constraint hierarchy will thus ensure that AGREE [±hf] is violated
to satisfy the exceptional *-ATR / [PAL + a] constraint.

3.5 Reduplication of Other Forms

In the course of gathering data for the thesis, it was realized that words from other classes
such as numerals, adverbs and ideophones also enjoy a great deal of reduplication in the
language but there has been no mention of it in the existing literature on Akan
reduplication: Dolphyne (1988), McCarthy and Prince (1995), Abakah, Ababilah and Caeser
(2010).

This section takes a descriptive look at reduplication involving words from these classes.

3.5.1 Reduplication of Numerals in Akan

Numerals in Akan can also be reduplicated. Reduplicating numerals is usually done for the
purpose of emphasis. Numerals are Akan are treated as nominals so it is common to find
numerals behaving like nouns.

Base	Reduplicated	Meaning
1. baako	baakobaako	one
2. mpem	mpem-mpem	thousands
3. du	du-du	ten
4. ahanan	ahanan-ahanan	four hundred

It is common to find numerals being reduplicated in everyday speech. For instance, it is common to hear the market woman reduplicate a numeral when explaining to a customer how she has grouped or packaged her products. Let us consider the TypeCraft example below, where a yam seller tells a customer "M'asiesie bayerɛ no mmiɛnsammiɛnsa"

1. M'asiesie bayerɛ no mmiɛnsammiɛnsa

"I have arranged the yam into groups of three"

M'asiesie   bayerɛ no   mmiɛnsammiɛnsa

m   'a   sie   sie   bayerɛ no   mmiɛnsa mmiɛnsa

1SG PFV REDP *arrange yam*   DEF REDP   *three*

V   N   DET N

Generated in TypeCraft.

Mmiɛnsa 'three' is reduplicated in this example to emphasize on how the grouping/arrangement of the yams is done.

It is common to find reduplicated numerals in some coined words like the Akan name for

tithe *ntotosoɔ dudu* [ntʊtʊsʊɔ dudu] in which the numeral (e)*du* 'ten' is repeated to create the word tithe.

It is also common to find reduplicated numerals in very common wise sayings and proverbs like "Sika mpemmpem ntumi ntɔ nkwa" which reminisces the fact that no amount of money can buy a person's life.

2. Sika mpemmpem ntumi ntɔ nkwa

"Thousands of money cannot buy life"

sika	mpemmpem		ntumi		ntɔ		nkwa
sika	mpem m pem		n	tumi	n	tɔ	nkwa
money	REDP PL	*thousand*	NEG	*able*	NEG	*buy*	*like*
N	NUM		V		V		N

Generated in TypeCraft.

The numeral *mpem* 'thousand' is the plural form of *apem* is reduplicated as *mpemmpem* in the TC sentence above to emphasize the plurality or uncountability of money.

Numerals in Akan are treated as nominals so it is common to find numerals behaving like nouns. So in all the examples, reduplicating a numeral involves total copying of the base segments in the reduplicant as it is with the nouns.

3.5.2. Akan Ideophones and Reduplication

Akan ideophones are one interesting class of words that deploy reduplication in their formation.

"Ideophones are marked words depictive of sensory images found in many of the world's languages. They are noted for their special sound patterns, distinct grammatical properties, and sensory meanings". Dingemanse (2012: 1)

Voeltz & Kilian-Hatz 2001 (cited in Beck, D. 2005: 1) writes this about ideophones:

"The term 'ideophone' (Doke 1935) refers to onomatopoeic or synesthetic expressions which

- are distinguished as a group by syntactic, morphological, and / or phonological properties,
- tend to have an emotive function, and
- are associated with spoken and dramatic registers of speech (cited in Beck, D. 2005:1)".

The Merriam Webster online dictionary also defines it as "An onomatopoeic element functioning as part of distinct word class especially in African languages" (http://www.merriam-webster.com/dictionary/ ideophone)

As the definition suggests, these words are mostly common in African languages, Akan inclusive.

Even though they occur mostly in oral and non-formal communication than in written or formal in the Akan language, these ideophones saliently deploys reduplication in their formation.

These ideophones, according to Bodomo (2006) often expresses more spontaneous reactions

of the speaker in the speech context as compared to similar expressions in written texts. Also, these ideophones, as he calls it are "phonesthemes in function in the sense that they directly imitate sounds in nature" as in the use of 'kum' in the TC sentences below

3. ɔbobɔɔ no sei kumkum
"He hit him like "kumkum""

ɔbobɔɔ				no	sei	kumkum	
ɔ	bo	bɔ	ɔ	no	sei	kum	kum
3SG	REDP	*hit*	PAST	3SG	*like*		*sound*
V				PN	PRT	IPHON	

Generated in TypeCraft.

In the TC sentence above, the word '*kum*' which is an imitation of the sound made when the person was hit is reduplicated as '*kumkum*' to describe the intensity of the hitting.

Other Akan ideophones that seem to mimic sounds include those listed below;

Butu→butubutu   gidi→gidigidi

Kim→kimkim   gede→gedegede

Defedefe   dɛfɛdɛfɛ

Kitikiti   manyamanya

kikikiki

Not only are they products of sound imitations but they are also found in common wise sayings like the one annotated in TC below:

4. kukɾukukɾu no gyaea kekakeka nso bɛgyae

"A common wise saying that talks about cause and effect."

kukɾukukɾu	no	gyaea	kekakeka	nso	bɛgyae
kukɾu kukɾu	no	gyae a	Keka keka	nso	bɛ gyae
REDP	3SG *stop* PRTV	REDP	*also*.FOC	FUT *stop*	
IPHON	PN V	IPHON	PRT	V	

Generated in TypeCraft.

In all the examples above, reduplicating ideophones involves a process of copying the segmental features of the 'perceived' base in the reduplicant.

3.5.3. Adverbs and Reduplication

Some Akan adverbs were also identified to be capable of reduplicating. These adverbs are reduplicated for the purposes of emphasis and also to describe the intensity of the action described by the verb that the adverb modifies.

Kobi (s.a.: 17) identifies six groups of Akan adverbs: **berɛ kyerɛfoɔ** 'adverb of time', **yɔbea kyerɛfoɔ** 'adverb of manner', **Anoɔden kyerɛfoɔ** 'adverb of degree/concession', **ampayɛ kyerɛfoɔ** 'adverb of affirmative/uncertainty', **dodoɔ kyerɛfoɔ** 'adverb of number/frequency' and **beaeɛ kyerɛfoɔ** 'adverb of place'.

Apart from the adverbs of place (beaeɛ kyerɛfoɔ), words from the other groups are capable of reduplicating. I present some examples below:

5. odidi daadaa

"He/She eats all the time"

odidi daadaa

o di di daa daa

3SG REDP *eat* *all_the_time*

V ADV

Generated in TypeCraft.

In this example, the *daa*, an adverb of time is reduplicated as *daadaa* to modify the reduplicated verb *didi.* It thus describes the time in which the person being described eats.

The adverbs of number/frequency (dodoɔ) describe the number/frequency at which the action being described by the verb is performed.

6. Yayra kɔ afuom dakodako

"Yayra goes to the farm once in a while"

Yayra kɔ afuom dakodako

yayra kɔ afuo m dako da ko

go farm inside REDP *day* *one*

Np V N ADV

Generated in TypeCraft.

So the reduplicated form *dakodako* in sentence above describes the frequency at which the subject, Yayra goes to the farm.

7. Bolt tu amirika kikikiki sɛ pɔnkɔ

"Bolt runs like a horse"

Bolt	tu	amirika	kikikiki		sɛ	pɔnkɔ
bolt	tu	amirika	kiki	kiki	sɛ	pɔnkɔ
	run	*speed*	REDP		*like*	*horse*
Np	V	N	ADV		ADJ	N

Generated in TypeCraft.

In this example the reduplicated adverb kikikiki shows the degree/intensity of Usain Bolt's running speed.

8. Watete ntoma no pasapasa

"he/she has torn the cloth into pieces"

Watete				Ntoma	no	pasapasa
w	a	te	te	ntoma	no	pasa pasa
3SG	PFV	REDP	*tear*	*cloth*.SBJ	DEF	REDP *haphazardly*
V				N	DET	ADVm

Generated in TypeCraft.

Some Akan 'converted' adverbs were also found to reduplicate but they were mostly adjectives that were functioning as adverbials. An example is given with the adverbs ntɛm 'fast' in the TC sentence below:

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9. yɛ no ntɛmntɛm

"do it quickly"

yɛ	no	ntɛmntɛm	
yɛ	no	ntɛm	ntɛm
do	3SG	REDP	*quick*
V	PN	ADVm	

Generated in TypeCraft.

ntɛm here functions as an adverb describing the manner in which the person in question is supposed to do what he/she has been asked to do.

Conclusion

In conclusion, this chapter has presented a formal account of reduplication involving words from three of the major classes, Nouns, adjectives and verbs. It was also discussed that words from other groups such as numerals, adverbs and ideophones also undergo reduplication in the language.

An earlier analysis proposed by McCarthy and Prince was reviewed and deemed as untenable since it did not factor data from the other classes apart from verbs. Proposing constraints with data from only one group will lead to the wrong candidates emerging as winners if data from the other word classes are considered. An alternative analysis was proposed to cater for the entirety of the phenomenon in the language.

Chapter 4

Reduplication in Akan and Tone Transfer: An Autosegmental Account

The issue of what happens to tone when a form is reduplicated in a tone language like Akan has been a subject of interest amongst researchers who have delved into researching languages that exhibit patterns of reduplication. Does the interaction between reduplication and prosody allow for the transfer of prosodic features such as tone along with the reduplicant?

Most current theories of reduplication (Steriade 1988; McCarthy & Prince 1995; Inkelas & Zoll 1999, 2000) require suprasegmental information –including tone- to correspond as faithfully as segmental information from the Base. Such models, according to Myers and Carleton (1996: 39) "make the prediction that the tone of the base will always appear on the reduplicant". Thus, "there will be 'transfer' of tone (Clements 1985)".

In other words, what these theories predict is that in the unmarked case, reduplicants and corresponding bases should have identical tone patterns.

According to Mtenje (1988: 125), "autosegmental theory allows for three logical possibilities in the reduplication of segmental and suprasegmental (tonal) material:

a. Reduplication can 'transfer' (in the technical sense of Clements 1985) segmental material; only;

b. Reduplication can 'transfer' both segmental and tonal material:

c. Reduplication can 'transfer' tonal material only."

As stated in section 2.4, Akan is a tone language and that the syllable is the tone bearing unit in Akan. Also, Akan is a two-tone language: it distinguishes between high (H) and low (L), and typical of such languages, it has L as its default tone.

Also, like any tone language, tone has a lexical function in Akan and as such differences in tone can also result in different interpretation or meaning assigned to the same form or string of sounds as exemplified below:

1a. pápá 'good'

1b. pàpá 'fan'

1c. pápà 'father'

2a. há 'here'

2b. hà 'worry'

Thus it is only through tone that one can identify the different meanings assigned to the string of sounds /papa/ or /ha/. By extension, tone is as important as any phoneme in the language.

4.1 Annotation of Tone

Tone annotation has been a very grey area in the analysis of tone in Akan as there have been lots of inconsistencies in the literature. For example, well-known scholars of the language have annotated the same reduplicated word, /tɕɪrɛ/ 'show/teach' → [tɕɪrɛ-tɕɪrɛ], differently.

Osam, Marfo and Agyekum (2013: 51) annotate the tones as tɕìrè→ tɕìrètɕìrè, while Abakah, Caesar and Ababilah (2010:128) annotate it as tɕìrɛ́→tɕìrɛ́tɕìrè.

Also, Ofori (2013:86) annotates /bisa/ 'ask'→ [bisabisa] as /bìsá/ → [bìsábìsà] while Abakah, Caesar and Ababila (op. cit) annotate the tones on the same word as /bísà/ → [bísàbìsà].

In spite of the inconsistencies that reflect in their annotations, they all agree that in the course of reduplication, the reduplicant in Akan usually takes on the default L tone.

Abakah, Caesar and Ababila (op. cit) argue that the reduplicant in Akan usually copies the segmental melody of the base minus its prosodic properties but the reduplicant (the copy) is given its prosodic content by default at the phonetic stage. That is the reduplicant receives the default tone, which is L in Akan.

With reference to nouns, adjectives and verbs, this chapter gives a morphophonological account of what happens to the tone on the base when a form undergoes reduplication.

4.2 Reduplicated Nouns and Tone transfer

As has been discussed already in chapter 3 above, reduplication of Akan nouns generally involves a total copying of the base segments in the reduplicant.

"In the reduplication of Akan nouns generally, all the segmental sounds, regardless of underlying tone melody, are invariably duplicated in the reduplicative template but the tones are not always copied". Abakah, Caesar and Ababila (2010: 133).

Dolphyne (1988: 76) also adds that nouns in Akan maintain their basic tones in longer constructions except in possessive constructions and in compounds. Consider my examples in the table below:

Base	Reduplicated	Meaning
1.àgùrɔ́	àgùrɔ́-àgùrɔ́	'jokingly'
2. ńkwádàà	ńkwádàà-ńkwádàà	'children'
3. dèdé	dèdédèdé	'noisy'
4. sìká	sìkásìká	'money'
5. m̀mìá	m̀mìám̀mìá	'places'

6. àbá	àbáabá	'seeds'
7. ækúó	ækúó ækúó	'groups'
8. ǹnìéḿmá	ǹnìéḿmá ǹnìéḿmá	'things'
9. àbʊ́sʊ́m	àbʊ̀sʊ̀màbʊ́sʊ́m	'gods'
10. æfíé	æfìè æfíé	'houses'

Table 4.1: Reduplicated nouns

It can be seen from the table that in nouns such as 1 – 7, the reduplicant copies both segmental and tonal features of the base. This is captured in the derivation of sìká reduplicating as sìkásìká below:

/Red-sika/

Base and Tonal melody

copy and associate segments and tone

Derived output

[sìkásìká]
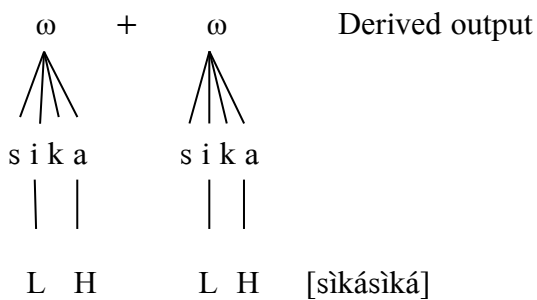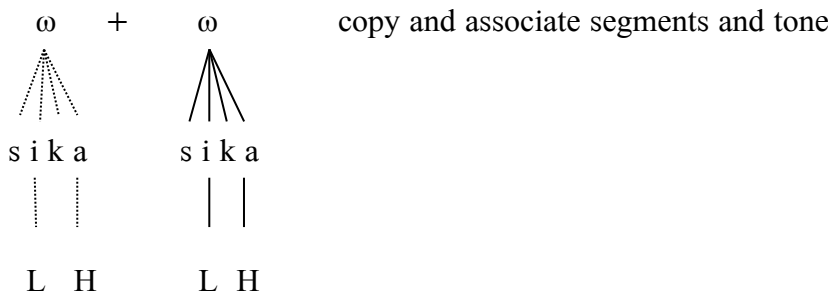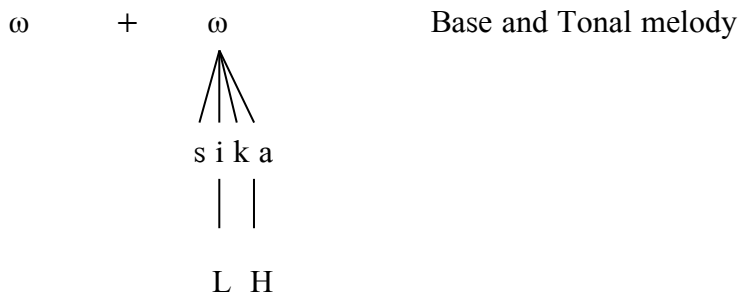
However, in other examples such as 8 – 10, reduplication copies only the segmental melody of the base minus its tonal features and in such examples, the reduplicant, is realized with low tones by default.

Abakah, Ababila and Caesar (op. cit) have argued that for some of the nouns such as /àbá/ reduplicating as [àbáabá], even though the lexical tone melody of the base àbá does not contain any downstep, the phonetic representation contains a downstep in the reduplicant and that downstepping in such instances can be explained within the context of tone spreading. They explain it with the derivation[8] below:
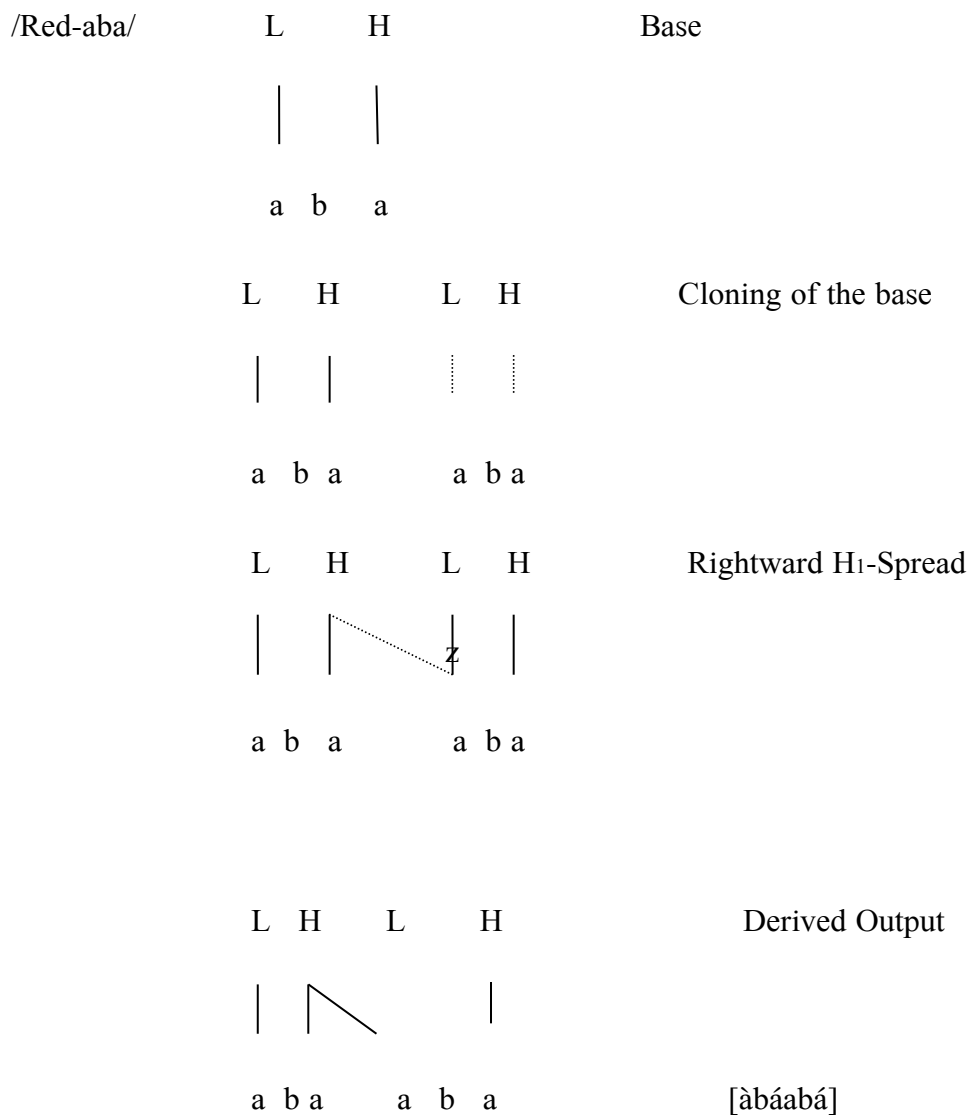
/Red-aba/   L   H   Base

                | |

               a   b   a

        L   H   L   H   Cloning of the base

        | | ⋮   ⋮

        a b a   a b a

        L   H   L   H   Rightward H$_1$-Spread

        | |⟍ ↓ |

        a b a   a b a

        L   H   L   H   Derived Output

        | ⟍ |

        a b a   a b a   [àbáabá]

---

[8] The word is different but the derivation is the same. Abakah, Caesar and Ababila used àfí reduplicating as àfíáfí for their analysis but I used a different word here to capture the same derivation.

So the downstepping, as seen in the derivation above, "is triggered" by copying both segmental and tonal melodies of the base in the reduplicant. This creates a reduplicated word àbá-àbá, which has a LHLH tonal structure. This "in turn elicits a post-clone tone-sandhi rule of rightward H-Spreading". Thus the H_1 spreads progressively to dislodge the L_2. "The dislodged L_2 then floats between the H_1 and H_2" and causes the "H_2 to get a lower pitch value than the H_1".

4.3 Reduplicated Adjectives and Tone transfer

As noted in chapter 3 above, the adjectives also duplicate the entire segmental melody of the base in the reduplicant. Thus, adjectives such as pa 'good', reduplicates as papa 'very good' to indicate intensity while nkɔkɔɔ 'red' becomes 'nkɔkɔɔnkɔkɔɔ' to emphasize on the plurality of the color red. Now let us look at the segmental and tonal melodies of the adjectives in the table below:

Base	Reduplicated	Meaning
1. pá	pápá	'good'
2. ǹkɔ́kɔ́ɔ	ǹkɔ́kɔ́ɔǹkɔ́kɔ́ɔ	'red'
3. æ̀síní	æ̀síníæ̀síní	'pieces'
4. kìtí	kìtíkìtí	'small'
5. kàmá	kàmákàmá	'nice'
6. àkɔ́ɔ́	àkɔ́ɔ́ákɔ́ɔ́	'apetizing'
7. trừḿ	trừḿtrúḿ	'smooth'
8. tàń	tàńtáń	'not_nice'
9. tùrú	tùrútúrú	'slippery'
10. dìŋ	dìŋdíŋ	'hard'
11. çì	çìçí	'hot'

Table 4.2: reduplicated adjectives

It follows from the table that adjectives such as those exemplified by 1 – 6 copies both segmental and tonal melody of the base in the reduplicant. A derivation of Pá is shown below:

/Red- pá/ → ω + ω   Base and Tonal melody

          p a

          H

   ω + ω   Copy and Associate (Segments and tone)

  p a   p a

   H   H

   ω + ω   Derived output

  p a   p a

       H

According to Abakah, Caesar and Ababila (2010: 136), "some adjectives in Akan are not specified for tone in phonological representations and therefore they receive the default tone at the phonetic level of representation". Such adjectives include 7 – 11 on the table.

They further add that when these "toneless adjectives" reduplicate, "the reduplicated template is suffixed to the base. Morphologically all the segments are copied in the reduplicant but being toneless, it receives the default L even as the reduplicant takes the H which polarizes with the received L of the base. After the tone polarization process, the tone

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of the base-final TBU dissimilates by taking the tone of the reduplicant TBUs. This derivation is shown below:

/Red-tan/

ω   base segment

t a n

ω   default L tone assignment

t a n

L L

ω   +   ω   copy base segments;

                    H-tone polarization

t a n   t a n

L L   H H

ω   +   ω   dissimilation of base-final TBU

t a n   t a n

L L   H H

ω   +   ω   Output

t a n   t a n

L   H   [tàńtáń]

67
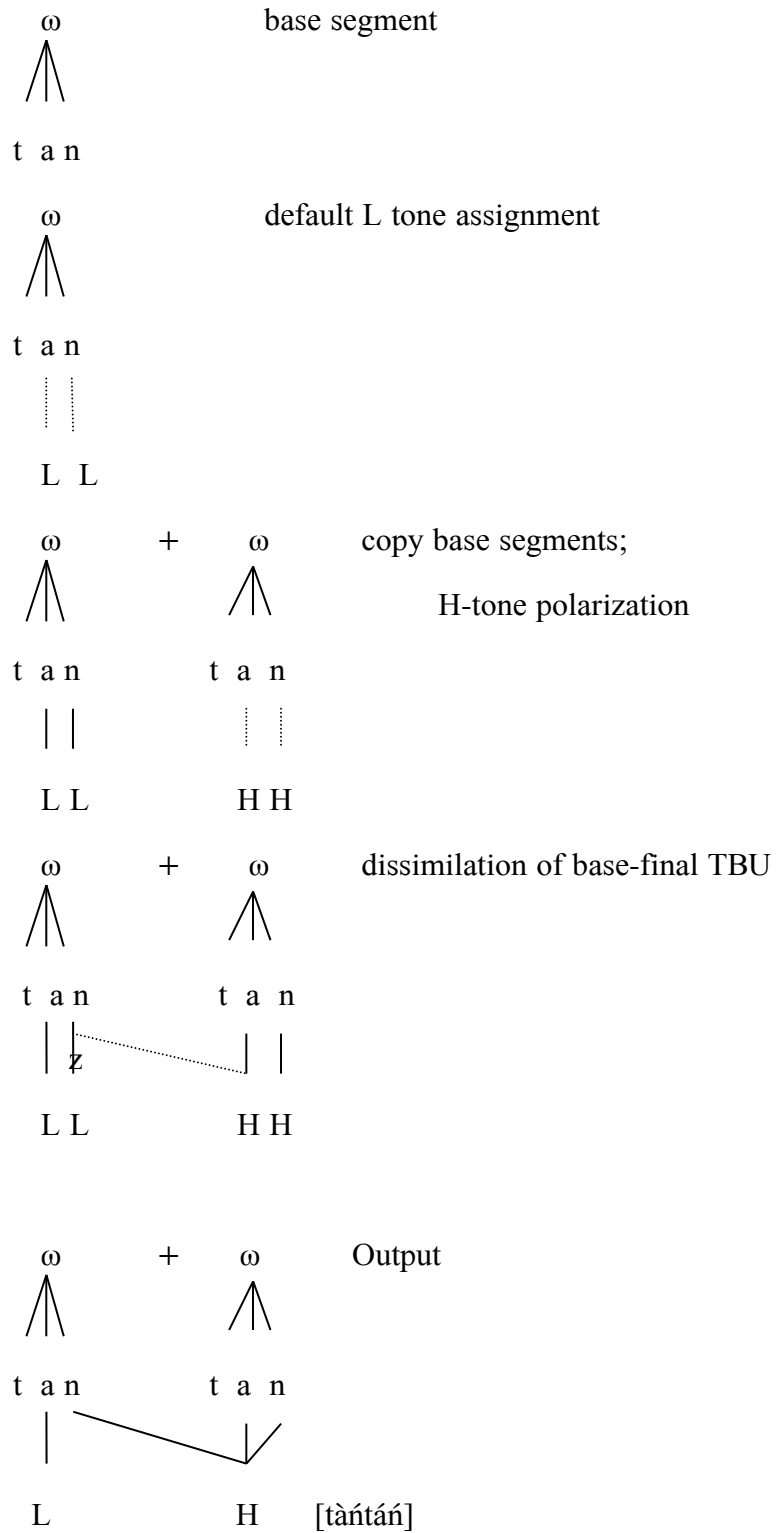
On another view, as they further write, "the H of the reduplicant spreads to the preceding TBU after which the base-final TBU is dislocated. The resultant dislocated L is absorbed by the initial TBU of the base".

4.4 Reduplicated verbs and Tone transfer

Akan verbs have been classified in several ways in the literature. Dolphyne (1988: 125-132) classifies them into six classes based on the C's and V's that make up their syllable structure: monosyllabic CV stems, Type 1 CVC (V) verbs, Type 2 CVC (V) stems, verbs with CVCV/CCV structure, CVV stems and "other verbs stems" (like CVw and CVrV) but based on their lexical tone melodies, Abakah (2004: 198) categorizes them into three classes. Abakah's classification is summarized below:

The class I verbs are those that have an underlying **H** (H) tone melody and by reason of the Obligatory Contour Principle (OCP), he refers to them as H-toned verbs. The H-toned class I Akan verbs include;

dá 'sleep'   pɔ́ń 'close'

hú 'see'   twá 'cut'

sí 'get down'   dí 'eat'

yí 'remove'   kɔ́ 'go'

tɔ́ń 'sell'

The class II verbs are those verbs that have an underlying **HL** melody. They include those listed below;

kúrà 'hold'   wúrà 'enter'

dʑínà 'stand'   tínà 'stay at a place'

wúsù 'shake'

The Third Class, class III verbs, are those that underlyingly have a L (L) H (H)/ **LH** melody. Some examples of such verbs are given below:

mìá 'squeeze'   pìá 'push'

tùá 'pay'   dùá 'to plant something'

tìrɛ́ 'spread'   tɕʷìrɛ́ 'write'

For the purposes of analyzing whether or not the tone borne by verbs from these classes transfer with the bases when they are reduplicated, I will group the verbs into two: monosyllabic bases and disyllabic bases.

4.4.1 Monosyllabic verbs

The monosyllabic falls under Abakah's classification of Class I verb stems in Akan. According to Abakah, such verbs are underlyingly H-toned. We consider some examples in the table below:

Base	Reduplicated	Meaning
1. dá	dìdá	'sleep'
2. hú	hùhú	'see'
3. tã́	tĩ̀ tã́	'fart'
4. tɕʷá	tɕʷìtɕʷá	'cut'
5. pɛ́	pìpɛ́	'to look for something'
6. sɔ́	sùsɔ́	'to weld/glue something'
7. fɛ́	fìfɛ́	'to sprout'
8. tí	tìtí	'hear'
10. kɯ̋	kɯ̀kɯ̋	'fight'

Table 4.3 Reduplicated monosyllabic verbs

Following Schachter and Fromkin (1968), Dolphyne (1988), McCarthy and Prince (1995), Kager (1999), and Ofori (2006a): Ofori (2013: 79-80) writes that the reduplicant is "posited as prefixal", and as already mentioned in chapter three above, there is a general avoidance of [-High] in the reduplicants. This is observable in the data since all the reduplicants are realized with [+High] vowels that share some phonetic semblances with the base vowel, which can either be based on ATR or Rounding, or both.

However, since the reduplicant is expected to be identical to the base with respect to both segmental and suprasegmental features (tone), one would expect that when the monosyllabic verbs reduplicate, the reduplicant must copy both tonal and segmental features of the verb. But looking at the examples in the table above, this is not the case since the reduplicants' tone is L, although the base is H.

According to Abakah, Caesar and Ababila (2010: 123), the reduplicant and the base are realized with different tones because reduplication copies only the segmental melody of the base without the tone melody and as such, the reduplicant receives the default tone, which is L in Akan. The derivation[9] of /hú/ reduplicating to become [hùhú] is captured below:

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[9] The word is different but the derivation follows that of Abakah, Caesar & Ababila (2013: 125)

/Red- hú/ → ω + ω   Segmental and Tonal melody
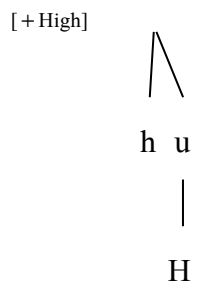
[+High]

        h u

           |

           H

        ω + ω   Copy and Associate Segments

[+High]

        h u h u

                 |

                 H

        ω + ω   Default Low-tone assignment

[+High]

        h   u   h   u

            ┊ |

            L   H

        ω + ω   Derived Output
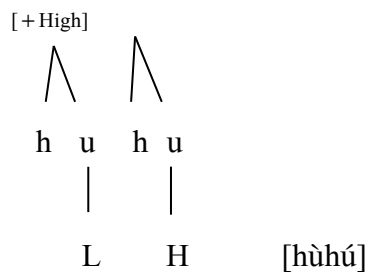
[+High]

        h   u   h   u

            | |

   L   H   [hùhú]

71
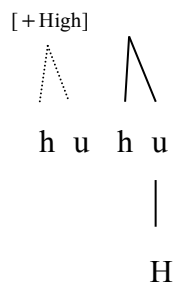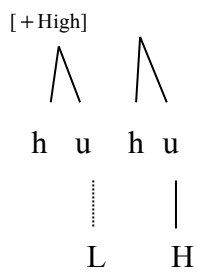
Alternatively, the difference between the base and reduplicant's tone can also be explained by the Obligatory Contour Principle (OCP); a universal markedness constraint that "was originally proposed to account for distributional regularities in lexical tone systems (Leben (1973), cited in McCarthy, J. J. (1986:207))". This constraint "fights against adjacent occurrence of the same tone in a word; and it is violated whenever there are two identical tones, associated to TBU's next to each other" Anane (2010: 78). And as she further writes, OCP is highly ranked in Akan.

So granted (on account of Abakah, Caesar and Ababila) that all the monosyllabic verbs are underlyingly H-toned, once the reduplicant copies the base segments plus its tone, we get a pattern of two high tones but because there is a prohibition on having two identical tones occurring in succession, one of the high tones has to undergo low tone dissimilation. As the examples show, the base maintains its H since it is the head from which the reduplicant copies but the reduplicants tone dissimilates into a low tone to create the LH sequence, which in turn conforms to OCP. The derivation bellow captures this alternative analysis[10]:

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[10] This analysis is modeled after that of Abakah, Caesar & Ababila (2013: 125) presented above.

/Red- tã ́ / → ω + ω   Segmental and Tonal melody
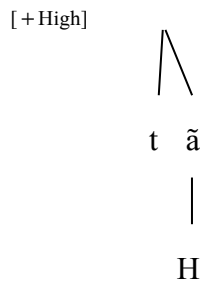
[+High]

```
        /\
       t  ã
          |
          H
```

ω + ω   Copy and Associate segments and tone

[+High]

```
     /\    /\
    t  ĩ  t  ã
       ⋮     |
       H     H
```

ω + ω   OCP, Low-tone dissimilation

[+High]

```
     /\    /\
    t  ĩ  t  ã
       |     |
       L     H
```

ω + ω   Derived Output

[+High]

```
     /\    /\
    t  ĩ  t  ã
       |     |
       L     H      [tĩtã́]
```
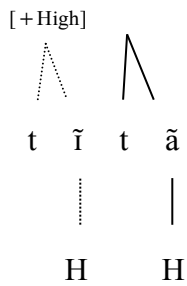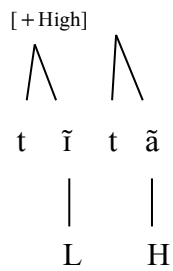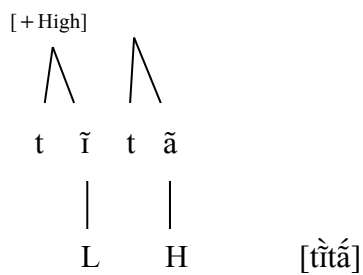
Thus looking at the data given above, it will be phonologically plausible to also posit that the difference between the base tone and that of the reduplicant comes about as a way of satisfying OCP. This is because having two identical tones in succession will result in

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having an undesired sequence of identical tonal features so OCP will motivate the change from the base's underlying H-tone to a low tone in the reduplicant.

4.4.2 Reduplication of Disyllabic Verbs

The table below presents examples of reduplicated disyllabic verbs.

Base	Reduplicated	Meaning
1.pɔ́ń	pùǹpɔ́ń	'close'
2.fɔ́ń	fùǹfɔ́ń	'to grow lean'
3.káń	kìŋ̀káń	'read'
4.páḿ	pìm̀páḿ	'sew'
5. séŋ́	sìŋ̀séŋ́	'hang'
6.dáŋ́	dìŋ̀dáŋ́	'to_lean_on'
7. wúsù	wúsùwùsʊ̀	'shake'
8. kásà	kásàkàsà	'speak/talk'
9. dʑínà	dʑínàdʑìnà	'stand'
10. kúrà	kúràkùrà	'hold'
11. wárì	wárì wàrì	Marry
12. dáǹì	dáǹì dàǹì	'turn_over'
13. tìrɛ́	tìrɛ́ tìrɛ̀	'spread'
14. tɕìrɛ́	tɕìrɛ́tɕìrɛ̀	'show'
15.. ɕìrá	ɕìráɕìrà	'bless'
16. pʲìá	pʲìápʲìà	'push'
17. ɗʲùá	ɗʲùáɗʲùà	'Plant/grow'
18. sùmá	sùmásùmà	'Send'

Table 4.4 Reduplicated disyllabic verbs

The following are deducible from the table:

1 - 5 are examples of disyllabic verbs with a CVṇ structure. The bases have high tones (HH) whereas their reduplicants are low toned (LL). A way to explain or resolve them will be to say that the two syllables are produced during the period of a single H-tone and their reduplicants which are realized with two L-tones, can also be said to have two syllables which are produced during a period of a single low tone. Another way will be to do multiple linking of the two syllables to a single tone; H in the base or L in the reduplicant or as Anane (2010: 81) puts it, the two identical tones can be merged together to obey OCP. It is also worthy to note that just like the monosyllabic verbs, the low tone of the reduplicant of the disyllabic Class I verb like 1 - 5 is received by default. This is represented in the derivation below:

/Red- pɔ́ń/

ω   +   ω   Segmental and Tonal melody

[+ High]

p ɔ n

H

ω   +   ω   Copy and Associate Segments

[+ High]

p ʊ n   p ɔ n

H

75

ω   +   ω   Default Low-tone assignment

[+High]

p ʊ n   p ɔ n

L   H

ω   +   ω   Derived output

[+High]

p ʊ n   p ɔ n

L   H   [pʊ̀n̄pɔ́ŋ́]
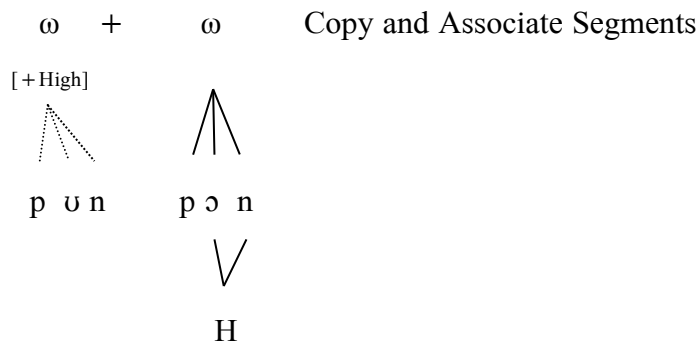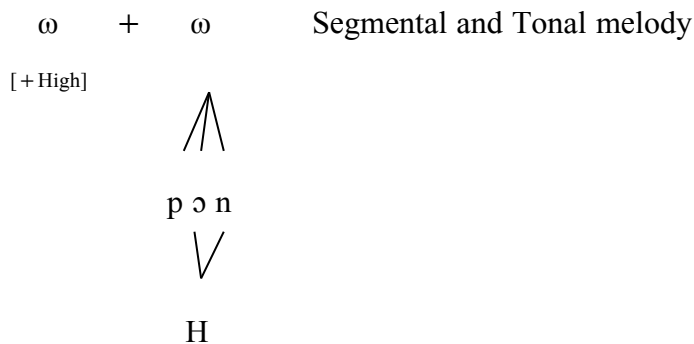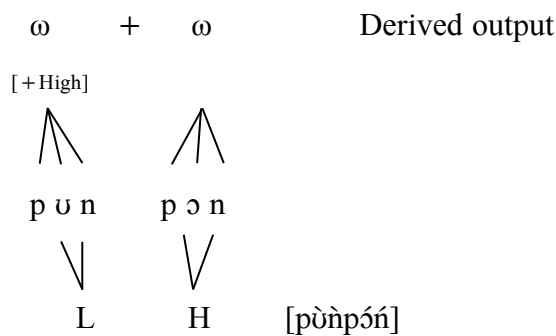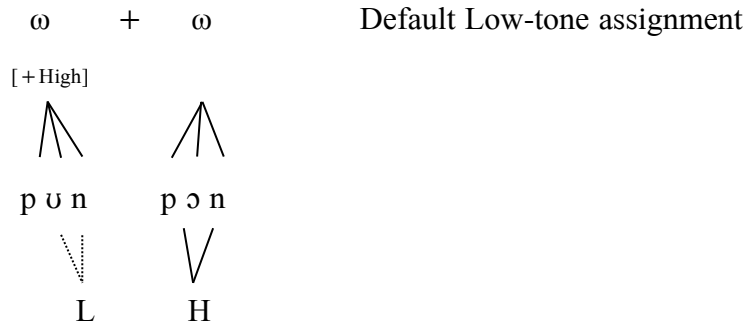
- 6 – 11 are CVCV verbs with a HL[11] tone sequence on the bases

- Examples 12 – 17 have LH sequence on the bases. Whereas 12, 13 and 17 are structured as CVCV, 14 - 16 have a CVV structure.

Abakah, Caesar and Ababila (op. cit) further argue that when the disyllabic (Class II and III) verbs reduplicate, their underlying and phonetic tone melodies are identical in their reduplicated forms indicating that the base tone melody does not undergo any perturbation. However, their copies, being toneless, receive the default L at the phonetic stage. Thus, by default, all the reduplicants will be realized with low tones as the examples in the table suggests. An autosegmental step-by-step (a-d) account is presented below:

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[11] HL are classified as Class III verbs and those with LH as Class II by Abakah
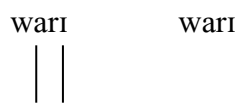
/Red-warɪ/

a.   ω   +   ω   Base and tonal melody

w a r ɪ

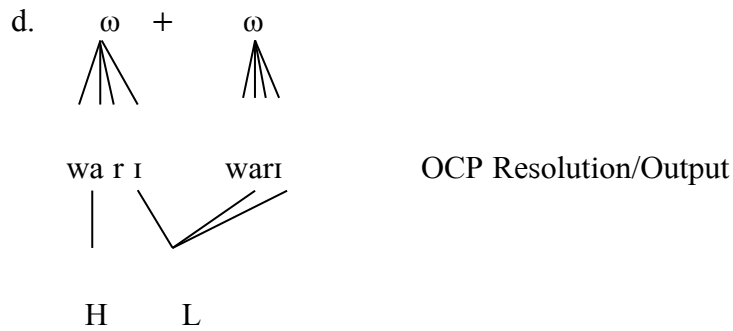H   L

b.   ω + ω   copy and association of base segments

warɪ   warɪ

H L

c.   ω + ω

warɪ   wa rɪ   default low tone assignment

H L   L L

d.   ω   +   ω

    wa r ɪ   warɪ   OCP Resolution/Output

          H   L

From the account above, the base segments are copied in the reduplicant minus its tone. It follows in step c. that the reduplicant receives its low tone by default. This leads to the generation of the sequence HLLL. Since OCP prohibits the occurrence of identical tones such as LLL that comes about as a result of the default tone assignment, the three identical L tones are fused together to derive the output form, which in turn realizes as HL.

On the account of Mtenje (1988), thus far, reduplication in Akan can transfer both segmental and tonal materials.

This chapter has discussed what happens to tone when a form is reduplicated in Akan. We noted in general that autosegmental phonology allows for reduplication in Akan to copy both segmental and tonal material.

In the reduplication of Akan nouns in general, " all the segmental sounds, regardless of their underlying tone melody are invariably copied but the tones are not always copied" (Abakah, Caesar and Ababila (2010: 133). In cases where the tones are not copied, the reduplicant takes a low tone by default.

Adjectives also copy all the segmental sounds of the base. Whereas some copy both segmental and tonal materials, others are regarded as toneless and as such their bases receive L by default at the phonetic stage causing their reduplicants to take H by reason of tone polarization.

We further noted that the monosyllabic verbs are all underlyingly H and as such their reduplicants take L by default. An alternative analysis was also provided to account for why the reduplicants take a tone different from that of the base.

The disyllabic verbs on the other hand reduplicate without any perturbation on the tone on the base but their reduplicants being toneless receive L by default at the phonetic stage.

CHAPTER FIVE

Functional Analysis of Reduplication in Akan

Mattes and Schwaiger (2014: 1) have noted that past research on reduplication has often treated the phenomenon as a kind of affixation. "The relevant approaches" used for studies on reduplication, including current ones like Morphological doubling theory (Inkelas and Zoll 2005) basically model reduplicated word forms as "the result of concatenating segmentally underspecified shape by copying procedure". They further add, "in addition to their general theoretical neglect of reduplication meaning, treatments of this sort have led to a more or less unchallenged conception of the potential functional space of reduplicants as merely paralleling the semantic possibilities of other affix types".

Thus, these studies "do not reflect the current belief that reduplication is equally capable of conveying derivational as well as inflectional meanings of any sort" and as Inkelas (2014: 7) rightly puts it, "reduplication serves a wide variety of functions cross-linguistically and within individual languages". These functions as she notes, "range over the standard morphological functions of derivation and inflection. Reduplication can also serve as a phonological concomitant of affixation and even simply as a semantically contentless structural repair".

So despite it being noted as a morphological or phonological phenomenon, reduplication can be done to perform other linguistic functions, which can be syntactic, semantic and pragmatic. From a viewpoint of the function that a reduplicated word perform, reduplication in Akan can be done as a means of lexical adjustment, to indicate the attributive and predicative use of a word, to indicate plurality of subject and object respectively, derivationally to change the class of a word, as a means of attenuation, augmentation (to

indicate intensity, frequency, repetition), emphasis and to imitate sounds. We explore the aforementioned functions that reduplicated words perform in Akan below:

5.1 Reduplication as a means of Lexical adjustment (Concept narrowing)

One semantic/pragmatic concept worth relating to Reduplication in Akan is Lexical adjustment or Concept Narrowing (Wilson & Carston 2007:7).

According to Carston and Wilson (op. cit), "Lexical narrowing involves the use of a word to convey a more specific sense than the encoded one, with a more specific sense than the encoded one, with a more restricted denotation (picking out a subset of the items that fall under the encoded concept)."

Gomashie et al (2004) in their analysis of reduplication in English (Contrastive reduplication) interpreted it as a kind of lexical adjustment. In their view, the semantic effect of construction types such as SALAD-salad, LIVING-TOGETHER–living-together, NERVOUS-nervous and MINE-mine "is to focus the denotation of the reduplicated element on a more sharply delimited, more specialized, range. For instance, *SALAD–salad* denotes specifically green salad as opposed to salads in general, and, (in the context in which Auckland was used in the paper), *AUCKLAND–Auckland* will denote the city in New Zealand as opposed to other cities that may happen to have this name." Gomashie et al (2002: 308).

A similar argument can be made for Akan in the sense that linguistically encoded meanings can be delimited to a more specialized (a kind of) or specific range by the use of reduplication. That is reduplication in Akan can be used to narrow or restrict the basic meaning that a particular word encodes. Let us consider the following examples:

a. **Mɛhwɛ no**

"I will look at him"

Mɛhwɛ			no
m	ɛ	hwɛ	no
1SG	FUT	*look*	3SG
V			PN

In (a) above, the meaning of the verb **hwɛ** is look. The speaker in this instance communicates to the hearer that he/she will look at the referent of the pronoun 'no'. This interpretations can however not be drawn from the reduplicated form **hwehwɛ** which means 'to look for or search for something'.

The meaning of the verb can be narrowed from a general sense of looking to one of searching when it is reduplicated as shown in (b) below.

b. **Mɛhwehwɛ no**

"I will look for him"

Mɛhwehwɛ				no
m	ɛ	hwe	hwɛ	no
1SG	FUT	REDP	*look*	3SG
V				PN

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So by reduplicating **hwɛ** into **hwehwɛ**, the concept of looking narrows to a particular way of looking, i.e. looking with the intention of finding the person that the pronoun 'no' refers to.

It can also be argued that the only valid interpretation of **hwehwɛ** will be "to search for something" and that if the interpretation (synchronically) were due to pragmatic processes such as concept narrowing or achieving optimal relevance, one would expect much more variety.

Historically, however, it is likely that reduplication (Considering it on a functional/semantic level and not as a morphological or phonological phenomenon) started out probably as a pragmatic process, where speakers of Akan, in their bid to achieve "optimal relevance", be as informative as required, or perhaps being brief in their communication decided as a pragmatic measure to repeat some forms to achieve certain effects which the simple forms (as in the case of hwɛ in the example above) on their own couldn't achieve.

That is, it may have started as a pragmatic process and as time went on became incorporated in the language and thus seen more as a process of grammar than pragmatics.

Notwithstanding this, the intensity of 'searching' will come in different degrees depending on the number of times hwɛ is reduplicated and this can be looked at in a pragmatic sense. That is the intensity of searching in the examples below will not be treated as the same.

    a. hwehwɛ ne nyinaa (search for everything)

    b. hwehwɛhwehwɛ ne nyinaa (search for everything)

The intensity of searching will be more in (b) because hwɛ is reduplicated four times as opposed to (a) where it is repeated twice. There is also a sense of urgency in searching which is conveyed in (b) but not (a) so the number of times the form hwɛ is reduplicated

will determine how urgent the speaker wants the hearer to search for a particular thing. This is more of pragmatics and not grammar.

5.2 Reduplication as a means of Augmentation

Words in Akan can be reduplicated as a means of augmenting their meaning. Augmentative meaning, as explained by Bodomo, is often signaled by reduplication indicating an increase in size, quality, intensity, plurality and also frequency or a 'constant repetition of an action.' (Bodomo 2000: 33, cited in Dansieh: 2011: 169). These instances of augmentation are discussed below:

5.2.1 Intensity

The meaning of a word can be augmented by way of reduplication to indicate intensity. This is usually the case for reduplicated adjectives in Akan.

a. *Mekyeaa abrewa bi ɛnora. Na ne nsa mu yɛ merɛmerɛmerɛ sɛ akwadaa foforɔ nsa mu*

'I greeted an old woman yesterday. Her palms were as soft as that of a new born baby'

In the above example, merɛmerɛmerɛ is the reduplicated form of the adjective merɛ which means soft. Why the speaker will triple merɛ and expect the hearer to spend an extra time to process it will be to indicate the intensity of softness. That is, by processing the tripled form, the hearer will better appreciate/comprehend the intensity of how soft the old woman's palms are. By implication, one would not expect an old lady's palms to be as soft as that of a newborn baby so reduplication here is employed by the speaker to convey an extra effect which the hearer will not get by processing the simple non-reduplicated form merɛ.

5.2.2 Plurality of subject/object

Reduplicating to indicate plurality of subject/object also signals augmentative reduplication.

Consider the examples below:

b. anuafoɔ no dʊdɔ wɔn ho

"The siblings love each other"

anuafoɔ		no	dʊdɔ			wɔn		ho
a	nua foɔ	no	dʊ	dɔ		wɔn		ho
PL	*sibling* PL	DEF	REDP	*love*		*them.*3PL.OBJ		*body*
N		DET	V			PN		PNrefl

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c. Kaja dɔ asuafoɔ no

"Kaja loves the students"

Kaja	dɔ	asuafoɔ			no
kaja	dɔ	a	sua	foɔ	no
	love	AGT	*learn*	PL	DEF
Np	V	N			DET

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In the example (b) above, the verb /dɔ/ which means to love is reduplicated as [dʊdɔ] to indicate that the subject of the verb is a plural noun, in this case 'anuafoɔ' which refers to siblings. A singular subject cannot take the reduplicated form of the verb so reduplication

here is to indicate plurality of the subject. That is, the non-reduplicated form can take both singular and plural objects, but the reduplicant can take only plural objects.

However, in (c), the subject Kaja takes the simple form of the verb because it is a singular noun and that taking the reduplicated form as shown in **d** below will make the sentence ungrammatical.

d. *Kaja dʊdɔ asuafoɔ no
"Kaja loves the students"

Kaja	dʊdɔ		asuafoɔ			no
kaja	dʊ	dɔ	a	sua	foɔ	no
	REDP	*love*	PL	*learn*	ASS.PL	DEF
Np	V		N			DET

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5.2.3 Repetition of Actions

Last but not least is augmenting the meaning of a word by reduplicating it to indicate a repetition of the action encoded by that word. Akan reduplicated verbs are particularly noted for encoding a repetition or continuation of actions. In other words, a reduplicated verb can signal a repeated action or an extension of an action or state of events. Let us consider examples **d** and **e** below:

e. ɔbaa bi bɛtʊntɔn nneɛma wɔ ha

"A woman comes to sell things here"

ɔbaa	bi	bɛtʊntɔn			nneɛma	wɔ ha	
ɔbaa	bi	bɛ	tʊn	tɔn	nneɛma	wɔ	ha
	INDEF	*come*	REDP	*sell*	things.OBJ	*be*	here.PATH
N	DET	V			N	V	ADVplc

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f. Yesu hyirehyiraa n'asuafoɔ no

"Jesus blessed his disciples"

Yesu	hyirehyiraa			n'asuafoɔ				no
yesu	hyire	hyira	a	n'	a	sua	foɔ	no
Jesus	*bless*.REDP	*bless*	PAST	3SG	PL	*learn*	ASS	DEF
N	V			N				DET

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The verb /tɔn/ in (**e**) above, which means sell is reduplicated as [tʊntɔn] to indicate that the action of the woman coming to sell things there is not a single event but rather repetitive action, that is she frequently goes there to sell. The relevance of reduplicating /tɔn/ into [tʊntɔn] is to compensate for the extra meaning of repetition, which the base /tɔn/ on its own does not convey.

In the above examples, and others with reduplicated verbs such as [yìyí], [tʊntɔn], [hyɪhyɛ], [bʊbɔ], [tutu] and [pɪmpam] reduplication is done to express iterativity; that is the repetition of the action or event that the base or unreduplicated form describes. In other words, the

reduplicated form may thus express or encode the extra meaning that the action is "repeated, done many times or is continuous". Kimenye, Alexandre (1988: 148).

5.3 Reduplicating for Emphasis

Words and in some cases phrases may be repeated/reduplicated for emphasis. Dansieh (2011: 171) writes that "such repetitions with their attendant slight increment in processing effort, guide the reader or hearer towards the achievement of optimal relevance". For example to achieve a greater emphasis on the truthfulness of one's saying, certain elements within the person's statement can be repeated and the number of times the repetition is done further emphasizes the claim.

Sika mpem-mpem ntumi ntɔ nkwa

"Thousands of money cannot buy life"

sika	mpemmpem		ntumi		ntɔ		nkwa
sika	mpem m pem		n	tumi	n	tɔ	nkwa
money	REDP PL	*thousand*	NEG	*able*	NEG	*buy*	*like*
N	NUM		V		V		N

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In the words of Dolphyne (1988: 136/138) only plural forms of nouns may be reduplicated and reduplicated plural nouns in Akan "merely **emphasize** the plurality of the noun". That is the reduplication of the noun **nkuro** 'towns' in the example below only emphasizes the plurality of the noun.

Nkuronkuro beberee wɔ Trondheim ne Oslo kwan no so

"There are so many towns along the road that links Trondheim and Oslo"

Nkuronkuro		beberee	wɔ	Trondheim	ne	Oslo	kwan	no	so
nkuro	n kuro	beberee	wɔ	trondheim	ne	Oslo	kwan	no	so
REDP	PL *town*	*many*	*be*.LOC	OBJ	*and*	OBJ2	*way*	DEF	top
N		ADJ	V	Np	CONJ	N	Np	DEM	Nrel

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As already noted in chapter 3.1, Abakah, Caesar and Ababila (2010: 132/3) have provided evidence to counter Dolphyne's claim that only plural nouns are reduplicated by giving "examples of singular forms of the noun that undergo reduplication". The singular nouns, as they note, function as adjectives when they undergo reduplication. Both schools however agree that reduplicated plural nouns only "lays emphasis on the plurality of the noun".

In summing up, nouns (plural, singular, non-count) in Akan can be reduplicated for the purposes of emphasis but although the plural nouns only lay emphasis on the noun, the singular/non-count forms can further function as adjectives when reduplicated.

5.4 Predicative and Attributive use of Adjectives

A syntactic function of reduplicated adjectives that is worth discussing is the fact that such reduplicated forms can be used to express or indicate the predicative and attributive use of the adjective involved. Adjectives in languages such as English can be used both predicatively and attributively. Consider the use of the adjective nice in the examples below:

1. The nice shoe – where nice has an attributive function

2. The shoe is nice – where it has a predicative function

The same form, nice, can function both attributively and predicatively.

This is however not the case with Akan since the predicative or attributive use of an adjective will depend on whether it is the base or the reduplicated form of the adjective that is used.

An adjective is said to be predicative if it is not part of the noun phrase that the noun it modifies head. Such adjectives are rather linked to the nouns they modify by the use of copular verbs. Let us consider the example below;

3. kaa no yɛ fɛ

"The car is nice"

kaa   no   yɛ fɛ

kaa   no   yɛ fɛ

PAST DEF *be* *nice*

N   DET V ADJ

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In the example above, the adjective **fɛ** modifies the noun kaa 'car'. However, it occurs outside the noun phrase [kaa no], which contains the noun (kaa) it modifies. And as shown in the TC example above, the adjective **fɛ** is rather linked to the noun kaa by the copular verb yɛ.

Attributive adjectives on the other hand are those that are part of the noun phrase that contains the noun they modify. An example of such adjectives in Akan is the form fɛfɛ in the TC sentence below:

4. kaa fɛfɛ no

"The nice car"

kaa fɛfɛ   no

kaa fɛ   fɛ   no

car REDP *nice* DEF

N   ADJ   DET

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As can be seen from the TC example above, the adjective **fɛfɛ** is part of the noun phrase that contains the noun it modifies.

Whether an adjective can be given an attributive or predicative function, is determined by the form (base or reduplicant) of the adjective that is used. For instance the base form of the adjective **fɛ** can only be used predicatively, so any construction in which **fɛ** is used attributively will be deemed as ungrammatical as shown in example 5 below.

5.   *kaa fɛ no

"The nice car"

kaa   fɛ   no

kaa   fɛ   no

car   *nice*   DEF

N   ADJ   DET

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Only the reduplicated form can be assigned an attributive function as in example *c.* above. A similar argument can be made for the adjective dɛ 'sweet' in the constructions below:

6. Aduane no yɛ dɛ

7. Aduane dɛdɛ no

8. *Aduane dɛ no

In each of the examples *h – j* above, the adjective dɛ modifies the noun **aduane** 'food'. The adjective **dɛ** can be used predicatively as shown in *h* above. It has to be reduplicated before it can be used attributively as in *i*. As a result, constructions such as *j* will be deemed as ungrammatical since the base form of the adjective cannot be used attributively.

In sum, whether an adjective can be used attributively or predicatively will depend on whether it is the base or reduplicated form of the particular adjective that is used.

5.5 Reduplication: A process of derivation

Derivationally, some words in Akan can be reduplicated to either change their syntactic category (part of speech) and/or their meaning. In other words, the class and/or meaning of a word can be changed when the particular word is reduplicated.

Some nouns in Akan, for instance, function as adjectives when they are reduplicated. Let us consider the example below;

sɛ fufuo no anyɛ aba-aba a na nkwan no ayɛ nsuo-nsuo

"if the fufu does not become lumpy, the soup becomes soggy"

sɛ	fufuo	no	anyɛ			abaaba		a	na	nkwan
sɛ	fufuo	no	a	n	yɛ	aba	aba	a	na	nkwan
*if.*COND		DEF	PFV	NEG	COP	REDP	*lump*	REL	CONJ	*soup*
COMP	N	DET	V			ADJ		PRT	CONJC	N

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no	ayɛ		nsuonsuo
no	a	yɛ	nsuo nsuo
DEF	PFV	COP	REDP *water*
DET	V		ADJ

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The above example is an extract from a topic discussed on Afisɛm 'home issues', a family life talk show on Metro 94.1 FM, one of the local radio stations in Kumasi, Ghana. On the said show, a man reports to the host about the inability of his wife to prepare his favorite meal for him. Typical of such shows, one presents an issue he/she faces at home, especially in his/her marriage to seek the advice of the listeners. The host of the show, Abena Nyantah, then activates the phone lines for the listeners to phone in to offer advice to the person. I provide the full transcript of how the host posed the Afisɛm of the that day to the listeners below;

"*Owura Kwasi Agyemang se ɔpɛ fufuo ne nkatenkwan paa, nanso dabiara ne yere bɛnoa bi no, sɛ fufuo no anyɛ aba-aba a na nkwan no ayɛ nsuo-nsuo*"

"Mr. *Kwasi Agyemang says he likes fufu and groundnut soup very much but anytime his wife prepares some, if the fufu doesn't turn lumpy, then the soup will be soggy*"

She then asks the listeners to call in to offer advice to the man

In the example above, two nouns are reduplicated; 'aba' which refers to lumps and 'nsuo', which means water, are reduplicated. The speaker reduplicates the two forms to modify fufu and the groundnut soup respectively. The word 'aba' a noun is reduplicated to mean lumpy which is an adjective. The same applies to 'nsuo', which also functions as an

adjective after undergoing reduplication. Reduplicating the nouns aba 'lump' and nsuo 'water', thus changes them to function as adjectives.

Also, some adjectives, (such as fɛ 'beautiful' in the example below) functions as an adverb when reduplicated.

Joy saa fɛfɛfɛ wɔ dwabɔ no ase

"Joy danced beautifully at the durbar"

Joy	saa		fɛfɛfɛ			wɔ	dwabɔ	no	ase
joy	sa	a	fɛ	fɛ	fɛ	wɔ	dwabɔ	no	ase
	dance	PAST	REDP	REDP	*beautiful*	*at*.LOC	*durbar*	DEF	under.LOC
Np	V		ADV				N	DET	Nrel

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The adverb fɛfɛfɛ is a reduplicated form that is derived from the adjective fɛ 'beautiful'. As Bodomo (2000: 33) puts it, reduplication 'involves repetition or multiple occurrence of a morphological entity within a larger unit'. Thus, the multiple occurrence of the base fɛ changes its word class from being an adjective to an adverb.

5.6 Reduplicating for Attenuation

Attenuation is defined as "a process of making something slender" or a "reduction in strength, virulence, etc. (Chambers 21st Century Dictionary: 83).

Reduplicating for attenuation "is one common example of the numerous uses of reduplication for toning down the lexical meaning of predicates". (Dansieh, 2011: 171).

The use of reduplication as a means of toning down the lexical meaning of a predicate "can be expressed through the repetition of the lexical item following the event or entity being

described". Let's consider the adjective [nyaanyaa] which is derived from /nyaa/ 'calm' in the construction below;

a. ɔayɛ ne ho nyaanyaa nanso ɔnyɛ

"He appears to be a calm person but he is not good"

ɔayɛ			ne	ho	nyaanyaa		nanso	ɔnyɛ		
ɔ	a	yɛ	ne	ho	nyaa	nyaa	nanso	ɔ	n	yɛ
3SG	PFV	*make*	POSS	*body*	REDP	*calm*	*but*	3SG	NEG	*good*
V			PN	PNrefl	ADJ		CONJ	V		

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Calm people are naturally seen to be good as their demeanor will suggest but the speaker in the sentence above reduplicates the adjective nyaa to drive the point that yes, the person being spoken about appears so cool and calm but he is not a good person as his demeanor will suggest. Nyaa is therefore reduplicated to bring down the quality or state of being that the person's appearance portrays.

The expression of attenuation can also be done by reduplicating the lexical item before the event or entity that is being described. Consider nkakrankakra (slowly/gradually) in the example below:

a. drɔba no de nkakrankakra sanee bepɔ no

"The driver descended the mountain slowly (he drove slowly down the mountain)"

drɔba	no	de	nkakrankakra	sanee		bepɔ	no
drɔba	no	de	nkakra nkakra	sane	e	bepɔ	no
	DEF	*use*	REDP	*descend*	PAST	*mountain*	DEF
N	DET	V	ADV	V		N	DET

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The above example describes the manner in which the driver descended the hill. A case can be argued for nkakrankakra as an attenuator in the sense that unlike normal downhill driving situations where one would expect a fast movement, nkakrankakra is rather used to tone down the intensity of the event that is being described.

Other words like nketenkete 'very small', nwunwunwununwunu 'very cold', merɛmerɛmerɛ 'very soft', can also be used as attenuators to tone down the lexical meaning of predicates.

5.7 Reduplicating for imitation

Reduplication of onomatopoeic or imitative words is a very common phenomenon in Akan and many other languages in the world as well.

a. aponkye su mɛɛmɛɛ

"The goat cries mɛɛmɛɛ "

aponkye	su	mɛɛmɛɛ
aponkye	su	mɛɛ mɛɛ
goat	*cry*	
N	V	IPHON

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The example above illustrates cases where certain words are reduplicated for the purpose of imitation. Such imitative words are usually ideophones that mimic the sound that is made as a result of the action that is being described. For instance, in example *a.* above, the speaker bleats to imitate the "mɛɛ" sound or natural cry (bleat) of a goat. In others such as *b.* and *c.* below, the imitation can be that of the sound made when one hits an object.

b. Ama bɔɔ ɛpono no mu panpan nanso obiara angye so

"Ama knocked hard on the door but no one responded"

Ama	bɔɔ	ɛpono	no	mu	panpan		nanso	obiara
ama	bɔ ɔ	ɛpono	no	mu	pan	pan	nanso	obiara
ama.SBJ	*hit* PAST	*door*	DEF	*inside*	REDP		*but*	*everyone*
Np	V	N	DET	Nrel	IPHON		CONJ	N

angye			so
a	n	gye	so
	NEG	*respond*	*on*
V			REL

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In this example the speaker imitates the 'pan' sound made by knocking on the door. The reduplication of 'pan' can be seen as an imitation strategy employed by the speaker to imply that despite Ama having to knock hard on the door, no one in the room was kind enough to open it for her.

c. Basiloonafoɔ bɔɔlobɔ akɔyɛ pepapepa

"Barcelona's style of play is passing"

Basiloonafoɔ		bɔɔlobɔ					pepapepa	
basiloona	foɔ	bɔɔlo	bɔ	a	kɔ	yɛ	pepa	pepa
	AGT	*football*	*play*	PFV	*go*	COP	REDP	
N		ADJ		V			IPHON	

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The speaker here imitates the sound made by passing ball to describe FC Barcelona's the style of play. It is worth mentioning that pepapepa is a common term used among football fanatics in the Ashanti region to describe the passing style of playing football. The term was notably coined by one sports journalist known as Summer of Angel 96.1 FM, one of the leading stations that transmit programs in the Akan language in Kumasi, the capital of the Ashanti region.

According to Key (1965: 100), "the primary feature of onomatopoeia is imitation of sounds. This may be merely a 'bang'" as in the way Ama knocked at the door "or 'pop', but this function adapts reduplication as a tool for its own purpose".

Summary

This chapter has discussed some of the functions of reduplicated forms in Akan. We noted that syntactically, reduplicated forms could be used to indicate the predicative or attributive use of adjectives. Also, reduplicated some reduplicated forms can be used to indicate the plurality of subject and object respectively. The derivational function of reduplication was also mentioned and we noted that words can be reduplicated to change the class and/or of a word. Other functions such as reduplicating as a means of attenuation, augmentation, emphasis and imitation of sounds have also been discussed.

Chapter 6

General Summary and Conclusion

This chapter presents the general summary and conclusions of all that have been discussed in this thesis. As stated in the introduction, the thesis is a study of reduplication in Akan, a Kwa language spoken in Ghana and some parts of Cote D'Ivoire.

Chapter one focused on two main introductory sections: a brief introduction to the Akan language and its speakers and reduplication, the phenomenon that this thesis discusses. Some of the definitions of reduplication as found in the literature were presented. Also, following Mattes (2007:9), we identified two levels of classifying reduplication: the formal level where we identified the two basic types of reduplication, full and partial, and the functional level which talks about the functions that the various reduplicated forms perform.

Chapter two also focused on two main sections: an account of the two frameworks that were adopted for this study and a review of some aspects of Akan phonology that are considered to be necessary for a better understanding of reduplication in the language. Phonological aspects such the sound inventory of the language, vowel harmony, tone and the structure of the Akan syllable were discussed. Mention was also made of the source of data for the study.

Chapter three presented a formal account of reduplication involving words from three of the major classes, Nouns, adjectives and verbs and also from other groups such as numerals, adverbs and ideophones.

An earlier analysis proposed by McCarthy and Prince was reviewed and deemed as untenable since it did not factor data from the other classes apart from verbs. It was argued that proposing constraints with data from only one group will lead to the wrong candidates emerging as winners if data from the other word classes are considered. An alternative

analysis was proposed to cater for the entirety of the phenomenon in the language. It was realized from the proposed analysis that the reduplicant in Akan has the size of a ω or an entire word and not a CV prefix.

It was also demonstrated in the chapter that Akan reduplication employ copying as its strategy; the base segments are copied in the reduplicant. Nouns, adjectives, adverbs and numerals copy the base segments in the reduplicant without any modification but in the reduplication of verbs it was noted that the height of the base vowel determine whether the vowel segments will be modified or copied as it is in the base. Per this, a [-High] vowel in the base has to change to [+High] counterpart that harmonizes with it in terms of ATR and/or Rounding. The change comes about because of the verb reduplicant's preference for high vowels.

The autosegmental analysis proposed a template to account for the copying of the base segments in the reduplicant. In this template we had an empty ω slot that was filled or occupied by segments copied from the base. The OT analysis however treated the similarity between the base and the reduplicant as the interaction of the constraints IDENT-IO (Feature) which ensures that whatever feature is in the input is preserved in in output and IDENT-BR which also ensures identity between a base and its reduplicant. For the verbs, the IDENT-IO (Feature) was specified as [+High] (IDENT-IO [+High]) to cater for the verb reduplicant's preference for high vowels. The constraint AGREE [±hf] was adopted from Bakovic's (2003:10) to further ensure that whiles satisfying the verb prefix's preference for a high vowel, the reduplicant of a base with a [-High] vowel, will choose a [+High] one that agrees with it in terms of ATR and/or Rounding.

Chapter four presented a discussion of what happens to tone when a form is reduplicated in a tone language like Akan. We noted in general that autosegmental phonology allows for reduplication in Akan to copy both segmental and tonal material.

In the reduplication of Akan nouns as was noted, all the segmental sounds, regardless of their underlying tone melody are invariably copied but the tones are not always copied so in such cases where the tones are not copied, the reduplicant takes a low tone by default.

It was also noted that Adjectives also copy all the segmental sounds of the base and whereas some copy both segments plus tonal material, others regarded as toneless receive L by default at the phonetic stage causing their reduplicants to take H by reason of tone polarization.

We further noted that the monosyllabic verbs are all underlyingly H and as such their reduplicants take L by default. An alternative analysis was also provided to account for why the reduplicants take a tone different from that of the base.

The disyllabic verbs on the other hand reduplicate without any perturbation on the tone on the base but their reduplicants being toneless receive L by default at the phonetic stage.

Chapter five concentrated on the functional analysis of reduplication. It was noted that current studies on reduplication (including Mattes 2007, and Mattes and Schwaiger 2014) has led to the belief that in spite of the usual classification of reduplication as a morphological process of affixation, its functional space remains highly unchallenged or less challenged. In the wake of filling this functional space, we discussed some of the functions of reduplicated forms in Akan. These functions included the following:

- Syntactically, reduplicated forms could be used to indicate the predicative or attributive use of adjectives. It was realized from the examples used that the simplex form of the adjective or the base can only be given a predicative function whereas the duplex or reduplicated form can also be given an attributive function only.

- The reduplicated verb as was noted, can be used to indicate the plurality of subject and object respectively as well as signal a repeated action or an extension of an action or state of events.

- Derivationally, reduplication can change the class and/or meaning of a word. Thus by reduplicating a noun like nsuo 'water' to nsuonsuo 'soggy', we change its class from a noun to adjective while by reduplicating the verb hwɛ 'look' into hwehwɛ 'search for', we only change its meaning.

- Other functions such as reduplicating as a means of attenuation, emphasis and imitation of sounds have also been discussed.

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