

# *ASPECTS OF TÙTRÙGBÙ(NYAGBO) PHONOLOGY*

**BY**

GBORSI, DIVINE KORMLA



This thesis is submitted to the University of Ghana, Legon in partial fulfillment of the requirement for the award of M.Phil Linguistics degree

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## DECLARATION

I declare that apart from the relevant ideas and examples from the works of other people which have been duly acknowledged, this thesis is my own original work and has neither been submitted in part or whole previously for the award of a degree anywhere else.

**CANDIDATE**

**DATE**

.....  
GBORSI, DIVINE KORMLA

**SUPERVISORS**

.....  
DR. FUSHEINI HUDU

.....  
DR. KOFI DORVLO



## DEDICATION

To Jenny my babe and friend and also Bernice Eyram, Abi Rob and Felix



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## ABSTRACT

This thesis presents aspects of the Phonology of Tùtrùgbù. The main focus of the study is the Syllable Structure, Tone, ATR Vowel harmony, and Loanword Phonology. The people of Nyagbo are called Bàtùgbù while the language is called Tùtrùgbù. Tùtrùgbù is one of the fourteen (14) languages classified as Ghana-Togo Mountain (GTM) languages of the Kwa family. Nyagbo communities are located in the new Afadzato West District of the Volta Region. From the Ghana ethnologue (2010), Tùtrùgbù has a population of 4405 speakers out of which 2176 live in diaspora. Nyagbo shares borders with other GTM Languages like Tafi and Logba in the North and Avatime on the East. The objective of this research is to study the phonology of the language under the themes indicated above. The significance of this study is that, data from Tùtrùgbù would be used for cross linguistic study in relation to other world languages. Data for the study was collected through recording, use of picture stories and direct elicitation of structures with assistance from native speaker informants. The Theoretical Frameworks adopted for this study are the Autosegmental Theory (Goldsmith, 1976) and the Mora Theory. This thesis has demonstrated, among other things, how tone is used to express tense and aspect in the language. It has also shown that, vowels are in harmonious relationship and that foreign words are borrowed into the language through noun class marking, change of tone, change of phonation, deletion of some segments and epenthesis.

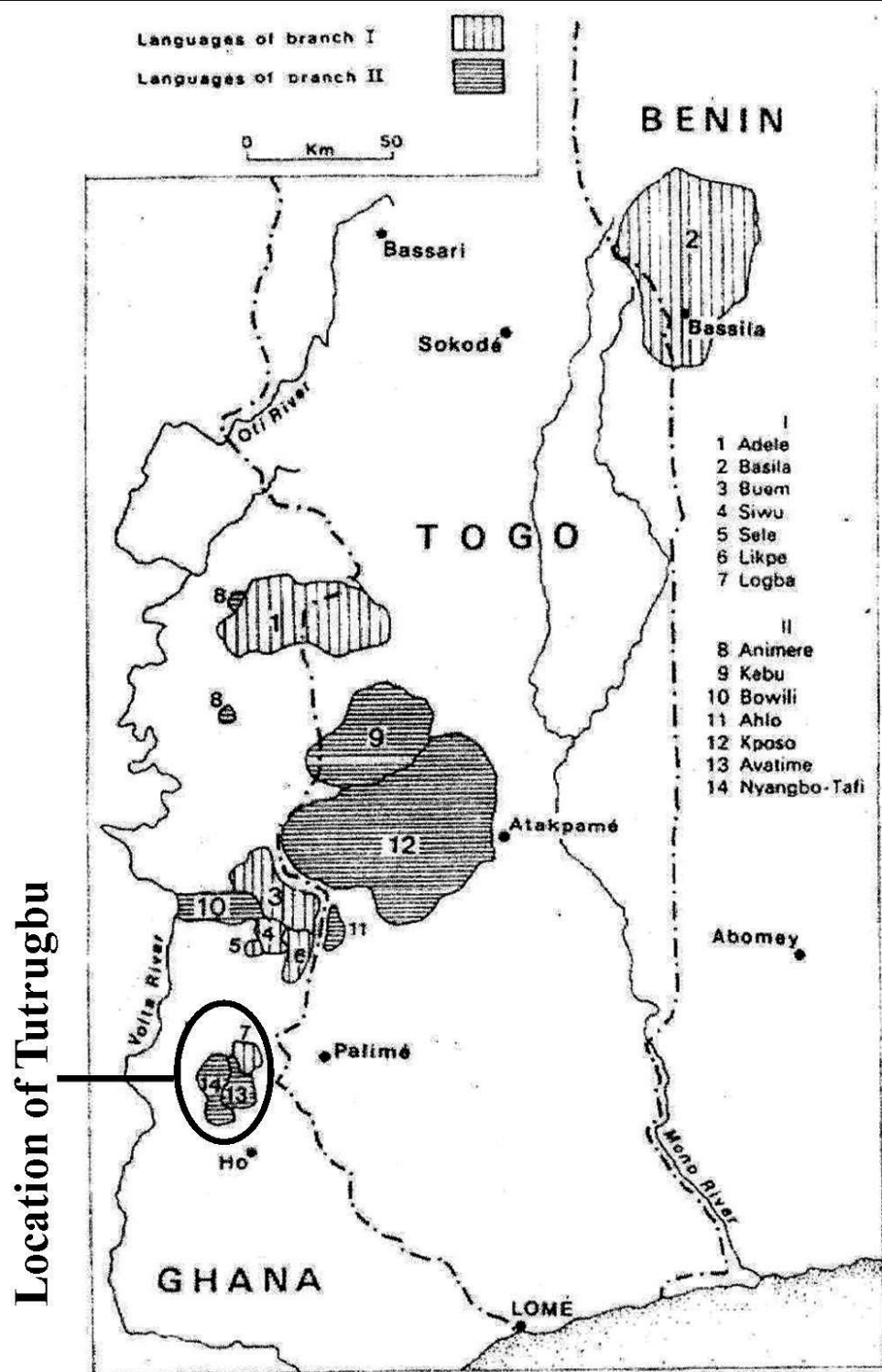
**List of Abbreviations**

|       |   |                                |
|-------|---|--------------------------------|
| 1     | - | 1 <sup>st</sup> person pronoun |
| 2     | - | 2 <sup>nd</sup> person pronoun |
| 3     | - | 3 <sup>rd</sup> person pronoun |
| ADJ   | - | Adjective                      |
| ADV   | - | Adverb                         |
| AT    | - | Autosegmental Theory           |
| AUX   | - | Auxiliary                      |
| CM    | - | Noun Class Marker              |
| COMP  | - | Complementizer                 |
| COMPL | - | Completive tense marker        |
| CONN  | - | Connective                     |
| DET   | - | Definite Determiner            |
| EMPH  | - | Emphasizer                     |
| FOC   | - | Focus marker                   |
| FUT   | - | Future marker                  |
| HAB   | - | Habitual tense                 |
| INDEF | - | Indefinite article             |

|          |   |                    |
|----------|---|--------------------|
| INT      | - | Intensifier        |
| LOC      | - | Locative adverb    |
| LOG      | - | Logophoric Pronoun |
| NEG      | - | Negative marker    |
| OBJ      | - | Objective form     |
| PART     | - | Particle           |
| PST      | - | Past tense         |
| PL       | - | Plural Marker      |
| POSS     | - | Possessive Pronoun |
| POST.MOD | - | Post modifier      |
| POT      | - | Potential Marker   |
| PRE.MOD  | - | Premodifier        |
| PREP     | - | Preposition        |
| PROG     | - | Progressive form   |
| Q        | - | Question marker    |
| SG       | - | Singular Marker    |
| SUBJ     | - | Subject form       |

|      |   |                                      |
|------|---|--------------------------------------|
| SM   | - | System Marker                        |
| TBU  | - | Tone Bearing Units                   |
| TP   | - | Topicalizer                          |
| TRPS | - | Topological Relations Picture Series |
| UNDP | - | United Nations Development Programme |

Map of GTM Languages showing the location of Tùtrùgbù



Distribution of the Central Togo Languages

(Source: Bernd Heine, *Verbreitung und Gliederung der Togorestsprachen*  
Dietrich Reimer Verlag, Berlin, 1968)

## CHAPTER ONE

### GENERAL INTRODUCTION

#### 1 Introduction

This thesis is a description of some aspects of the phonology of Tùtrùgbù, one of the fourteen Ghana -Togo Mountain Languages spoken in Ghana . The chapter presents Tùtrùgbù and its speakers , statement of the problem, research objectives, research questions, significance of the study, the scope, organization of the study and the research methodology.

##### 1.1 Tùtrùgbù and Its Speakers

Tùtrùgbù is the language spoken in the Nyagbo Traditional Area. The people of Nyagbo are called Bàtùgbù while the language is called Tùtrùgbù. Tùtrùgbù is one of the fourteen (14) languages classified as Ghana-Togo Mountain (GTM) languages spoken in Ghana. The GTM languages are spoken in the Volta region of Ghana, though several of them including the largest, Kposo, are spoken in Togo, and one, Basila, is spoken in Benin. The languages named *Togorestsprachen* (Westermann, 1932, 1954) were previously known by the translated name referred to as ‘Togo Remnant’ languages and currently Ghana-Togo Mountain Languages (GTM) or Central (or Mountain) Togo (CT) languages. The GTM languages have active noun class system utilizing prefixes and concord (Schuh, 1995) that distinguishes them from their closest Kwa



relatives, ‘a feature that seems to link them to Bantu’ (Johnston 1919). Assirelli (1950) refers to them as Bantu Languages in French. Bertho (1952) is considered in Blench (2006) as the first author to set out a comparative wordlist of these languages. Bertho (1952) calls the languages sous-groupe Adélé-Avatimé to distinguish them from Guan (Gondja) and Gur (Voltaïque). Greenberg (1966) placed them in Kwa, a position supported by Stewart across a number of publications. In a study of the group as a whole, Heine (1968a) treats the GTM languages as a unit, although dividing them into two distinct branches, Ka-Togo and Na-Togo, based on the reconstructed root word that the respective languages use for ‘flesh’ (meat). Nyagbo belongs to the Ka Group. The classification could not be done in a straight forward manner because the GTM languages are typologically mixed. They possess some features of languages of the Kwa family and they are also reminiscent of Bantu. Stewart proposed in Dakubu and Ford (1988:122) that Heine’s Na branch is to be grouped with the Volta-Comoe languages (the subgroup of Kwa which includes Akan) whereas the Ka branch is to be grouped with separate Ewe-Fon subgroup of Kwa.

Members of the Na-Togo branch of the GTM Languages include Lelemi (Buem), Siwu (Lolobi/Akpafu), Sekpele (Likpe), Sɛɛle (Santrokofi), Anii (Basila) cluster and Adere (Gidire) and the Ka-Togo branch include Logba (Ikpana), Siya (Avatime), Nyangbo (Tùtrùgbù), Tafi (Tɪgbɔ), Kposo, Igo (ahlon), Tuwuli (Wuli), Kebu (Akebu) and Animere.

In discussing the classification of the GTM languages, Blench (2006) indicates that,

“The region is clearly marked by extensive mutual interaction of languages and borrowing, which make this type of boundary hard to delineate precisely”.

The Tùtrùgbù speakers are highly multilingual with high proficiency in Tùtrùgbù, the mother tongue, Ewe the regional language, English the language of education and Akan for trade. From the Ghana ethnologue (2010) Tùtrùgbù has a population of 4405 speakers out of which 2176 live in diaspora. Those Bàtùgbù who live in diaspora speak the languages of the areas of their residence also.

#### **1.1.1 Migration Story**

Nyagbo is located in the Hohoe District (now Afadzato West District) in the Volta Region. An account of the history shows that the people of Nyagbo have inhabited their present location on the Akwapim – Togo Ranges known in the area as Eweto or Ghana-Togo frontier (Dorvlo, 2008) for over 200 years after making several eventful migrations from Agunyagbo in the Republic of Togo to their present location in Ghana (cf. UNDP report, 2012). The informant (as indicated in §1.8.4 below) further indicates that long ago their forefathers (*xwialē* in Tùtrùgbù) lived in Osu, Accra. The quest to expand their territory coupled with taunts and aggression of war lords of neighbouring communities led the Nyagbo people out of their location in Osu, Accra in search of a peaceful place. That journey took them several kilometers eastwards from Accra to settle in an area

called **Adzina** near Akosombo in the Eastern region. After inhabiting **Adzina** for a while, events of the time forced them further east to a place called **Tɔsrɛ** near **Anum**. The upsurge of the Ashanti war once more forced them out of **Tɔsrɛ** to **Agɔ** in Togo. The area they occupied at Togo is called **Agunyagbo**. After staying at **Agunyagbo** for some time and tribal wars ceased, the Nyagbo people decided to go back to Osu where they came from because they could not find the peace they wanted. On their way back to Osu, they veered off to settle at the foot of the Akwapim-Togo range known in the area as **Eweto** [Èvètó]. Their leader, **Kalēgbe** who was a hunter climbed the mountain for hunting expedition. After several searches for a habitable place, they came to their present location across a spring called “**Kahyweh**” and a cave with a landscape serving as an added natural barrier to possible pursuers. Their leader found the mountain top suitable and secure so he led the people to settle there.

After staying together for some time, one hunter called **Gagbe** set up a cottage in the valley where he made a farm and also hunted. He found climbing the **bhutu** ‘mountain’ back every day from the farm and hunting expeditions unbearable due to old age so he decided to stay in the valley. His family joined him and the new village was called **Gagbefɛ** or **Gagbakɔfɛ** ‘home’ or ‘village of Gagbe’. Later the people of **Fiaxoe** (known today as **Fiafɛ**) ‘the King’s home’ and **Gbeigbe** (known today as **Konda**) ‘junction’ and other communities began to move out of Sroe the original settlement one after the other, clan by clan, following the example of the People of **Gagbefɛ**.

This narration on Tùtrùgbù and its speakers gives us the historical development of the language. As the people moved, they encountered speakers of other languages with whom they interacted. These interactions have occasioned borrowing of lexical items and structures. This explains why some sound segments of the language are lost from the sound inventory and it also accounts for the occurrences of some other sound segments that are found only in words borrowed into the language.

### **1.1.2 Religious and Socio-Economic Life of the People**

Tùtrùgbù is spoken in nine (9) Nyagbo communities namely Odumase, Gagbefe, Sroe, Anyigbe, Kume, Emli, Konda, Agɔdome, and Fiafe. Three (3) of these communities namely Sroe, Konda and Fiafe are located on the mountains earlier referred to as Eweto or the Ghana-Togo frontier. The paramountcy is located at Gagbefe instead of Sroe (the historical traditional home of the people) for ease of access and also for administrative reasons.

The people of Nyagbo are very religious. This is demonstrated in their names, inscriptions and signage on buildings, stalls and kiosks, vehicles and billboards. Some of the religious bodies in the Nyagbo traditional area include the Evangelical Presbyterian Church, the Roman Catholic Church and some Pentecostal Charismatic Church and Ministries. There is also one famous indigenous African religious movement called '*Akorfafa na mi*' at Nyagbo Gagbefe. There used to be a community god that the natives of Nyagbo used to worship but due to Christianity and modernity, the worship of that local community god is no longer

observed among the people. No one at Nyagbo Sroe, the historical home could remember the last priest who was in charge of the god and the younger generation could not locate the shrine of the god. The river goddess ‘*adiawunu*’ was very famous for providing spiritual direction, guidance and protection for the people in times of war, epidemic breakouts and other health issues.

### **1.1.3 Domains and Use of the Language**

Tùtrùgbù is used extensively in many domains in all the Nyagbo communities. Apart from formal education which is made available through school where only English and Ewe are used, Tùtrùgbù is used among the people in all other areas of human endeavour. These are informal education such as apprenticeship, socialization and acculturation of new and younger members of the community, customs and institutions like marriage, chieftaincy, festivals and durbars, arbitration, king-making, local industry and worship. Some of the cultural practices among the people are marriage (bethrodal, traditional procedures, payment of dowry and celebration), outdooring, naming ceremony, funeral rites, widowhood rites, libation, trade, farming and craftsmanship. It is said that all these practices are conducted in the Tùtrùgbù unless there were Ewes and other non-natives involved. Tùtrùgbù is very active in the communities because all interactions including greetings among the natives are done in it. Ewe is the lingua franca and language used in basic education for the area.

The people of Nyagbo are mostly subsistent farmers. Some of the chief commodities in the area include cocoa, plantain, banana, cocoyam, cassava and other food crops. Other tradesmen in the area include artisans, petty traders and teachers, among others. Some economic activities of the area also include gari processing, palm wine tapping, hunting and local architecture. There are also some tourists attraction sites such as historical caves, waterfalls and a mountain top experience locally called ‘*amitodzi*’ where visitors can have a beautiful curvatures and scenes of the Volta lake and the River Dayi in the valley.

According the UNDP report (2012), there are certain rare species of monkeys at various locations in the forests. Within the span of the last 40 years, the following once popular names of sacred groves can only be mentioned as history: “Ahabheme”, Kagbaworley”, Enyitu and Ediaunor”. The Kagbaworley and Ediaunor used to provide the town folks as well as farmers within their catchments areas with perennial water supply.

## **1.2 Statement of the Problem**

Tùtrùgbù is one of the minority languages that is not widely studied. Only few works have been published on the language. There is also a work titled; “*A Comparative Study of the GMT languages*” (Blench, 2006) which is a general description of the fourteen (14) languages. There is no work particularly published on the phonology of Tùtrùgbù except some general comments on the typology of the language in the earlier works by Dakubu and Ford (1988).

In his earlier works, Essegbey (2009, 2011 and 2012) indicates that Tùtrùgbù is a noun class language , it is aspectual rather than tense and that the language uses the phonology and morphology interface for grammatical effects. For example, he states in Essegbey (2012:42) that;

“The morpheme which expresses progressive and habitual state of affairs is marked by tones which anchor on the vowel of the first syllable. The vowel of the progressive takes the same form as that of the prefix, pointing to assimilation by the latter.”

Though Essegbey (2012) is discussing tense and aspect as shown in the above extract, one can clearly see the influences of phonology at work but the work stops short of demonstrating clearly how the phonological processes involved work out for the performance of the grammatical functions being described.

All the works I have cited so far on Tùtrùgbù are on the Syntax of the language and not the Phonology. This makes way for this study to go into Tùtrùgbù in order to come out with a comprehensive description of the sounds of the language.

It is against this background that this study, “*Aspects of Tùtrùgbù Phonology*” is conducted to fill the phonology gap in the study of Tùtrùgbù.

### 1.3 Research Objectives

The general objective of the study is to describe some aspects of the Tùtrùgbù phonology and highlight some of the phonological processes native speakers employ in speech and the effects of such processes on the general linguistics of the language. In specific terms, this study has the following objectives:

- 1) To determine the sound inventory, types of syllable structure, tone and ATR and how these processes are realized.
- 2) To describe the types of assimilation processes in Tùtrùgbù.
- 3) To attempt a holistic description of the sounds of the language thereby providing data for cross linguistic study.
- 4) To find out the languages in contact and their influences on Tùtrùgbù.

It is my hope that this study would be a further step in the attempts being made to raise the profile of the language.

### 1.4 Research Questions

The following are the research questions:

- a) What are the sound segments that constitute the sound inventory of Tùtrùgbù?
- b) What are the features that define the vowel harmony system of Tùtrùgbù ?
- c) What is the syllable structure of Tùtrùgbù?
- d) What are the functions of tone in Tùtrùgbù?
- e) How are loanwords adapted into the phonology of Tùtrùgbù?



### 1.5 Significance of the Study

The study is significant for the following reasons;

- a) It is a contribution to the existing body of knowledge by providing data from Tùtrùgbù for a cross-linguistic study of Phonology in general.
- b) This study will also serve as a source of reference for other researchers, students and the general linguistics world.
- c) The study will open up the language for discussion and also for linguistic analysis
- d) It will broaden our knowledge by giving us deeper and better understanding of the GTM Languages.

### 1.6 Scope of the Study

This research focuses on some “*Aspects of Tùtrùgbù Phonology*”.

Areas of study are the sound inventory, syllable, tone, ATR vowel harmony, and loanwords phonology.

All the communities in the Nyagbo Traditional area are involved but there is special focus on Nyagbo Sroe for the study because it is set apart on the mountains from the influence of other languages in the area.

## 1.7 Organization of the Study

This thesis is organized into five (5) chapters and sections as follows. Chapter 1 introduces the study by given the background of Tùtrùgbù and its speakers, domains and uses of the language, statement of the problem, research objectives, research questions, significance of the study, scope of the study and the research methodology.

The Chapter 2 reviews the relevant literature and discusses the appropriate Theoretical Frameworks in which the data collected are analyzed whereas Chapter 3 presents the sound inventory of the language, the syllable structure and types of tone and its functions in the language.

In Chapter 4, I present and discuss the ATR Vowel Harmony with the agreement relationships the noun class markers share with other affixes in the language. This chapter also discusses loanwords phonology showing the various strategies with which loanwords are adapted into the language. The chapter ends with the discussion of other Phonological processes which were identified in the language in the course of the study but which were not discussed under the major thematic areas the research was set out to study.

Finally, Chapter 5 presents the Summary of the research Findings and outlines some notable contributions of the Study to the existing body of knowledge on the linguistics of Tùtrùgbù. The chapter also makes some recommendations that will promote the study of linguistics and lastly, it sums up the study with some concluding remarks.

## **1.8 Research Methodology**

This section discusses the research area, sample size, data collection instruments and data collection procedures designed for the study.

### **1.8.1 Research Area**

Tùtrùgbù is spoken in nine (9) Nyagbo communities as indicated above. Data was collected from all the nine communities through the methodology described in §1.8.3 and §1.8.4 below but a lot more of the data was collected in Nyagbo Sroe because of its isolated location on the mountains. The Nyagbo people believe that Sroe is their original home from where they spread out to other communities and that the language at Sroe is considered to be the prototype. The language at Sroe is set apart from exposure to interference from other neighbouring languages due to its geographical location on the mountain. Interference is therefore limited. Data from native speaker informants outside the Nyagbo community were also collected and analyzed in relation to the dialect spoken at Nyagbo Sroe for the signs of interference, borrowing and possible shift.

### **1.8.2 Sample Size of the Research Population**

In all, twenty-one (21) respondents, 11 males and 10 females between 20 years and 78 years were directly involved in the study for interview and audio recording of stories. The number of the respondents is made up of Nyagbo Odumase (2),

Nyagbo Gagbefe (2), Nyagbo Sroe (3), Nyagbo Anyigbe (2), Nyagbo Kume (2), Nyagbo Emli (2), Nyagbo Konda (2), Nyagbo Agordome (2), Nyagbo Fiafe (2), Awudome Anyirawase (1) and Sokode Bagble (1). Many others were indirectly involved during the conversation and spontaneous elicitation of words and utterances. The minimum educational status of the respondents was Junior High School and Middle School. The twenty one (21) respondents were purposively selected to reflect such social factors as **age** (10 adults – 41years – 78 years and 11 youth – 20years - 40years), **gender** (11 males and 10 females) and **education** (Junior High School – 1, Middle School – 8, Senior High School – 10, and Teacher Training College - 2). The purposive selection of the category of respondents stated above was intended to check for variations and changes in the structure of the language.

### 1.8.3 Data Collection Instruments

The instruments used for data collection in the study were **Conversations**, **Unstructured Interviews** and **Content Analysis**. The data were collected using the Ewe language and later written in English language because the researcher is not a native speaker of Tùtrùgbù but the people of Nyagbo speak fluent and excellent Ewe so communication between the researcher and the community members in the research area was not a problem. The researcher's lack of native speaker intuition was a limitation which has prompted a lot of back and forth consultations so there was constant conversation with the native speakers throughout the research period.

#### **1.8.3.1 Conversations**

Conversation is one of the instruments used in the collection of data for this study. The researcher was deeply involved in the daily activities of the people as they chat and conversed with one another in the home, the community center for traditional marriage rites, funeral rites, communal labour, in the local market and other activities of their communal life that kept them engaged. Whilst among them, the researcher observed their speech behaviours critically and sought some clarifications on some utterances and structures. This instrument yielded lots of inputs from the speech community and got the researcher familiar with the dynamic uses of tone in the language.

#### **1.8.3.2 Unstructured Interview**

The interview is a one on one questions and answer interaction between the researcher and the respondents. This interview was unstructured because it was intended to get the respondents talking by producing as much utterances as possible as they respond to open-ended questions. Again, the interview was unstructured because it was momentous and dependent on what the respondents were doing at the time. Wordlists were compared and some utterances and structures were clarified and confirmed from the consultants. Differences and agreements in findings as well as variants and exceptions were also noted and later discussed with the consultants. The interview sheet (elicitation guide) and

the transcription of the frog story, gari processing, palm oil processing and TRPS are shown in the Appendices A, B, C, D and E respectively.

#### **1.8.3.3 Content Analysis**

Murray (2013) explains the process of Content Analysis as searching through one or more communications to answer questions that the investigator brings to the search. According to Murray, Content Analyses are not limited to written or printed documents alone but it is extended as well as to audio recordings, still photographs, motion pictures, films, video recordings and the like. For this study, the researcher used this instrument by audio recording, video recordings and taking snap shots of some interview sessions and engagements with the field consultants after which relevant structures and language items were noted and discussed in the body of the work.

#### **1.8.4 Data Collection Procedures**

Primary data for the study was collected mainly through audio recording of stories narrated by respondents and elicitation through picture stories. Some of the stories include migration stories, folk tales, picture story, description of processes such as palm wine tapping, gari processing, and preparation of some local dishes, giving directions, and proverbs among others. These stories were collected at Sroe, Gagbefe and Odumasi. Some stories were also collected at Sokode Bagble and Awudome Anyirawase from some native Tùtrùgbù speakers domiciled there.

Some data were also taken from secondary sources like Essegbey (2011 and 2012) and Bobuafor (2013) for analysis.

After the audio recordings of the picture story and other elicitations, the data was transcribed word for word using the Leipzig glossing rules with the assistance from native speaker informants. Data that were not clear and meaningful were cross checked, verified and confirmed with other native speakers in the community and the field consultants.

The data obtained was studied for the occurrences of phonological phenomena and processes such as ATR vowel harmony features, syllable structure, tone and loanwords phenomena and other phonological processes for discussion and analysis. Transcriptions of the stories are shown in the Appendices B-E at the end of the thesis.

I present the data in this thesis in four (4) levels. The first line is the utterance. The second line is the morpheme by morpheme presentation of the utterance. The third line is the interlinear glossing of the utterance or the Meta language and the fourth line is the literal meaning of the utterance.

## **1.9 Conclusion**

This chapter lays the foundations for the study. It shows that Tùtrùgbù belongs to a group of languages called the Ghana-Togo Mountain Languages (GTML). It was shown that Tùtrùgbù falls within the Ka-Togo group of the GTM languages.

The main instruments used for data collection are Conversation, Unstructured Interviews and the process of Content Analysis. The data was collected through audio recording of stories and elicitation of utterances and structures using the interview sheet.



## **CHAPTER TWO**

### **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

#### **2.1 Introduction**

This chapter reviews and discusses the relevant literature and the appropriate theoretical frameworks for this study. It is made up of four sections. Section one is the introduction whereas chapter two reviews the relevant related literature. Section three discusses the theoretical frameworks adopted for the study and section four is the conclusion.

#### **2.2 Literature Review**

Many linguists have worked on the Ghana-Togo Mountain languages and other African languages on the Syntax and other aspects of Linguistics. These earlier works have been consulted and reviewed for this study.

Schuh (1995) reports that, the possible syllable types in Avatime are V, CV and CCV which he labels as CGV and CLV. Dakubu and Ford (1988) also identify V, CV, CVN and N for Siwu. In addition to the above, Bobuafor (2013) also notes V/N, VC, CV, CVV, CCV and CL/GV for Tafi. There are clear differences in the syllable structure of languages of the GTM group as can be noticed from Schuh (1995), Dakubu and Ford (1988) and Bobuafor (2013) above.

These differences suggest that Tùtrùgbù, a member of the group, may also have something different. It is in this light that this study examines the syllable structure of Tùtrùgbù for better understanding of the phenomenon and its influences on the grammar of the language. The diagram in example (1) below shows the basic syllable structure of the GTM languages. The diagram illustrates among other things that the onset may be made up of one or two consonant sounds. If two consonants occur at the onset, it would be a consonant cluster in which the  $C_2$  may either be the lateral /l/, the trill /r/ or underlyingly the glides /w/ or /j/. The peak may also be made up of a vowel or a nasal consonant segment while the coda, if it occurs at all, may be a nasal consonant segment.

(1)

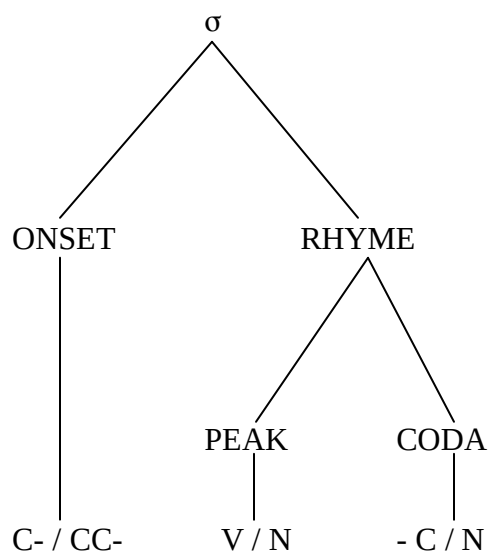


Diagram adapted from Dorvlo (2004:244)

In addition to the above, Heine (1968) also describes the GTM languages of which Tùtrùgbù is one as having either two or three tone-heights, usually with a rising and falling tone marked as tonemes. He presents tone as a prominent and

crucial embodiment of African languages. Aboh and Essegbey (2010) argue that the meaning a speaker intends to communicate in the GTM languages depends on the interaction between tone, prosody and syntax. This statement suggests that, in the GTM languages, word order (syntax) and extra linguistic factors such as gestures, facial expressions and voice quality among others (prosody) alone without tone do not make conversation meaningful. Mispronunciation of words by non-native speakers makes such words funny or meaningless to the native speakers. Interlocutors need to judge by intuition whether the tones are low (L), mid (M) or high (H), rising (LH) or falling (HL) and interpret them as such because each of these phonological patterns mean something to the native speaker grammatically and lexically. This is supported by Yip (1989) who notes that a language with tone is the one in which an indication of pitch enters into the lexical realization of some morphemes. It is this complex nature of tone the researcher undertakes to study so as to establish tone inventory of Tùtrùgbù and confirm what earlier researchers have presented about tone in African languages or otherwise provide what may be different in Tùtrùgbù.

Essegbey (2012) further notes that Tùtrùgbù has eight (8) tense-aspect categories out of which six are aspectual. These grammatical categories are determined by phonological phenomena such as vowel prefixes and tone. The language is presented to have seven (7) oral vowels and six (6) nasalized counterparts which do not only have significant tone but also display a harmonious relationship. This is significant because this study has touched on

phonological phenomena such as the sound inventory, ATR vowel harmony and tone which need further research for better understanding of the language. Again, Essegbey (2012) has demonstrated that the Tense, Aspect and Mood marking in Tùtrùgbù are carried out using affixes. Many of these affixes according to Essegbey (2012) are noun class vowel prefixes which exhibit the harmonious relationship mentioned earlier. Though Essegbey (2012) is a work on Syntax, the vowel prefixes he discussed are shown to undergo a lot of phonological processes in their functioning as Tense, Mood and Aspect markers in the language. This interface between Syntax and Phonology in Tùtrùgbù calls for the description of the vowel sounds of the language which is one of the cardinal objectives of this study.

Casali (2002) also worked on the ATR Vowel Harmony of Nawuri (a North Guang language of Ghana) and established that, the [ATR] harmony in Nawuri includes acoustic overlap of high [-ATR] and mid [+ATR] vowels, high frequency of occurrence of [-ATR] vowels, neutrality of /a/, a greater extent of leftward than rightward [+ATR] spreading and a systematic dominance of [+ATR] over [-ATR] vowels. He also notes a “superficial transparency” of the low vowel /a/ to leftward [+ATR] spreading. Hudu (2013) also reports among other things that in Dagbani (a Gur language of Ghana), the [ATR] harmony system has the [+ATR] value dominant over that of the [-ATR]. The phenomenon of the [+ATR] vowels dominance over the [-ATR] vowels is reported across languages including Nawuri (Casali, 2002) as noted above. These findings of

Casali (2002) and Hudu (2013) are phenomenal of languages that display ATR vowel harmony so the data obtained in Tùtrùgbù will be carefully examined to confirm the patterns noted in Nawuri and Dagbani or otherwise. There are some differences in what ATR phenomenon a particular language exhibits. For instance the low vowel /a/ co-occurs with both sets of [+ATR] and [-ATR] vowels. Also, the ATR vowel harmony is controlled from two directions namely the stem of the word and also from the vowels contained in the affixes. Bobuafor (2013) notes that the vowel harmony system of Tafi is stem-controlled and the ATR value of the initial root vowel spreads to the prefixes of a word and in line with this, it is possible to find polysyllabic words whose vowels do not belong to the same set. Hudu (2013) again reports that in Dagbani, there are three [+ATR] vowels [i, e, o] which trigger [+ATR] vowel harmony targeting underlying [-ATR] vowels. Hudu (2013) concludes that the spread of the ATR vowel harmonic feature is bidirectional in Dagbani, with root and affix vowels as triggers and targets. The bi-directionality of the ATR vowel harmony spreading is also identified in Akanlig-Pare (2002). He observed that the ATR vowel harmony system manifested in Buli is symmetrical – the harmony spread is from stem to affixes. This implies a bi-directional spread. This also means that both [+ATR] and [-ATR] values could spread provided they are located in the stem.

In addition to directionality, Bota and Osam (2004) studied some aspects of the Phonology of Bono (the third largest dialect of Akan) and note that the Advance Tongue Root [ATR] vowel harmony is widespread in Akan, cutting across all dialects. In addition to the ATR vowel harmony, they demonstrate that

Akan has Rounding Harmony, which is used extensively in the Fante and Atebubu sub dialects. The rounding harmony is not exclusive to Akan. Ringen and Vago (1998) also report of backness harmony in Hungarian. Further evidence is provided in Dorvlo (2004) which also intimated among others things that in Logba ATR Vowel Harmony, only the vowels of one harmonic set may occur in any word of two or more syllables. The rounding harmony and cross height harmony is a common phenomenon in Logba. To add to Dorvlo (2004), Schuh (1995) also notes that in Avatime ATR harmony, the vowels participate in a cross-height vowel harmony system whereby roots and associated affixes contain only vowels which match for the feature [ATR]. He further shows that this is easy to illustrate with affixes whose vowels vary depending on the [ATR] feature of the root to which they are attached. Finally in ATR vowel harmony, Ofori (2004) notes that in Larteh [ATR] vowel harmony, most of the reduplicated forms are repetition of the whole or part of a stem because the same vowels are repeated in the prefix making the vowel harmony rule apply absolutely. The works reviewed in this section set out the parameters along which the phenomenon of [ATR] vowel harmony especially in African languages would be studied. This thesis studies the harmonious relationship between the vowels in Tùtrùgbù and comes out to confirm the phonological patterns identified in the various works cited above or establish the variations of the phenomena as may be found in Tùtrùgbù.

To add to the above, many of the earlier researches on the GTM Languages (including Dakubu and Ford, 1988, Schuh, 1995, Blench, 2006, Dorvlo, 2009, Essegbey, 2012 and Bobuafor, 2013) argued that one property that

attracted the attention of linguists to the GTM languages is their active noun class systems which link them to Bantu languages. According to Westermann and Bryan (1952), the GTM languages have vocabulary items that resemble Kwa languages and a noun class system reminiscent of Bantu. This finding from Westermann and Bryan is very important for this study because even though it is not a study on Morphology, some of the noun class markers are vowel prefixes which undergo interesting phonological processes to trigger vowel harmony in Tùtrùgbù. This study brings out the interface between Phonology and Morphology in the language and how it influences its grammar in relation to what obtains in other African languages.

Dakubu and Ford (1988) noted that, the common sources of loanwords in the GTM languages are Akan, English and Ewe. The GTM languages have been in contact with these majority languages for many centuries. This is supported by Winford (2003) which argues that in any contact situation, quite distinct speech communities borrow lexical items and sometimes structures from one another. Loanwords are not sourced from only European languages. There is borrowing also between the indigenous African languages but in this case since the African indigenous languages share similar phonology, what happens to loanwords between African languages is a change of the vowel sound for instance in height, roundness, frontness and backness, assigning of noun class markers in languages that assign class markers and resyllabification among others. Abiodun (1989:52) notes that “grammatical number of singular and plural is overtly marked in Igede by the use of vowels”. In Igede, according to Abiodun (1989);

... nouns are vowel initial so that when a consonant initial noun is borrowed into the language, a vowel is attached before the initial consonant to make the borrowed items conform to the morpheme structure condition of the language

In addition to what Abiodun (1989) identified in Igede, many other strategies are adopted by speakers to accommodate loanwords into their native languages. In Ewe, a Gbe language of the Kwa family of West Africa, from experience, epenthetic vowels /i/ and /u/ are inserted to break the syllable structures of the borrowed item in order to make it admissible into the structure of the Ewe language. Vowels are also suffixed to the end of words that have closed syllables to make them open syllables. Apenteng (2013) also notes that segments in the loanwords from other languages that are not found in Akan are replaced by the closest segments. The phenomenon in Tùtrùgbù is not very different from what happens in the other African indigenous languages as explained above. The data available from Tùtrùgbù show that similar strategies are employed where there is a change in the tone and some segments of such loanwords are changed to suit the phonology of the target language.



## **2.3 Theoretical Framework**

Many theories are employed to describe languages that are not well studied. One of such theories especially for the study of Phonology is the Autosegmental Theory of Goldsmith (1976 and 1990). The Moraic Theory of (Kahn 1976, Harris 1983) is also employed at certain points in the study to explain some parts of the syllable structure.

### **2.3.1 The Autosegmental Theory**

The Autosegmental model of Goldsmith (1976 and 1990) places the articulatory parameters under discussion on independent tiers. This makes it possible to account for the persistence of floating tones. The AT enables the representation of such floating tones which are usually not associated with any segments in the underlying structure on independent tiers. The AT again helps to demonstrate clearly the direction of change in the spreading of processes like nasalization, places of articulation, roundness, [ $\pm$ ATR] and other alternations that occur as a result of the phonological and morphological conditions influencing segments in the environment. It also makes use of association lines and arrows to clearly illustrate segments and processes they undergo.

The Autosegmental Theory views tones as autonomous segments. According to Goldsmith (1999:137), “it is a theory of how the various components of the articulatory apparatus, i.e. the tongue, the lips, the velum and others are co-ordinated”. According to Clark and Yallop (1990:344), the fundamental point is

that, ‘speech, observed as articulatory activity, consists of gestures such as tongue movement, lip movement and laryngeal activity which are co-ordinated but which are by no means started and finished all at the same instance’. The Autosegmental Theory is able to show that tones marked on vowels and other tone bearing units like nasals co-occur with the vowel segments and that it is a simultaneous activity. Though the features are all produced at the same time, each is characterized by different gestural activity hence the autonomy.

Tone is paramount in Tùtrùgbù, and one cannot give a convincing description and analysis of tone without the use of the Autosegmental Theory. Attempting to show the dynamic tone behaviours and tone processes calls for a framework that is able to set features being described on their independent tiers and give true and adequate representations of them in a clear and unambiguous terms. Where it becomes necessary; the Mora Theory is used to support the Autosegmental Theory for a clearer perspective on the syllable structure.

### **2.3.2 The Mora Theory**

According to Crystal (2008) the Mora is a term used in traditional studies of metrics to refer to a minimal unit of metrical time or weight, and now used in some models of non-linear Phonology (e.g. Metrical and Prosodic Phonology) as a separate level of phonological representation. The analysis of segments into moras is usually applied only to the syllabic nucleus and coda (the rhyme), and not to the onset (‘onset/rhyme asymmetry’).

The justification for the choice of this theory is that there are a lot of vowel sequencing in the language under study. These vowel sequences lead to the realization of light and heavy syllable structures. The Mora Theory is therefore employed to analyze and establish the simple light syllables and the complex heavy syllables in the language.

## **2.4 Conclusion**

In this literature review, works on African languages like Dagbani, Akan, Larteh, Avatime, Tafi, Logba and Buli have been discussed. From the discussions, it is noted that the spread of ATR vowel harmony features varies from language to language. But generally it spreads leftward in some languages while the spread is rightward in others. The syllable structure among the GTM languages also varies very greatly as shown in the literature. Again, loanwords are accommodated into the target languages using different strategies. It is also shown that tone is important for communication in African languages. It is obvious from the literature review that there is knowledge gap especially the Phonology of the language to be covered in the linguistic study of Tùtrùgbù. It is expected that data from Tùtrùgbù will confirm the phonological patterns identified in other languages or it will unearth new phonological patterns for the study of African languages especially the minority ones.

The literature review has identified the Autosegmental Theory and the Moraic Model as very useful and adequate for the analysis and discussions of the phonological phenomena outlined in this study because they are able to set segments out to clearly illustrate them on independent tiers and nodes.

## **CHAPTER THREE**

### **SOUND INVENTORY, SYLLABLE AND TONE**

#### **3.1 Introduction**

This chapter discusses the consonants, vowels, syllable structures and tone. Section 1 is the introduction. Section 2 presents and discusses the sound system of the language. Section 3 discusses the syllable and syllable types while section 4 discusses tone and its processes in the language. The section 5 concludes the discussions of the chapter.

#### **3.2.0 Sounds of the Language**

The sound inventory of Tùtrùgbù are presented from collection of stories through recording of stories such as oral narratives, description of processes, giving directions, proverbs, and from articles both published and unpublished. The following sub-sections discuss the consonant and vowel sounds of Tùtrùgbù. The sound segments are presented in minimal pairs in order to establish them as phonemes in the language.

##### **3.2.1 Consonant Sounds**

The consonant sounds are shown in the (1) below.

## (1) Tùtrùgbù Consonant Chart

|                    | Bilabial                                 | Labio-dental  | alveolar      | Post alveolar | Retro-flex | Palat-al                        | Labio - velar | Velar          | Glottal        |
|--------------------|------------------------------------------|---------------|---------------|---------------|------------|---------------------------------|---------------|----------------|----------------|
| <b>Plosive</b>     | <b>p    b<br/>         b<sup>h</sup></b> |               | <b>t    d</b> |               | <b>ɖ</b>   |                                 | <b>kp gb</b>  | <b>k    g</b>  |                |
| <b>Nasal</b>       | <b>m</b>                                 |               | <b>n</b>      |               |            | <b>ɲ</b>                        |               | <b>ŋ</b>       |                |
| <b>Trill</b>       |                                          |               | <b>r</b>      |               |            |                                 |               |                |                |
| <b>Fricative</b>   | <b>ɸ    β</b>                            | <b>f    v</b> | <b>s    z</b> | <b>ʃ    ʒ</b> |            |                                 |               | <b>x    xw</b> | <b>h    fw</b> |
| <b>Affricate</b>   |                                          |               |               |               |            | <b>ts   dz<br/>         dzy</b> |               |                |                |
| <b>Approximant</b> | <b>w</b>                                 |               |               |               |            | <b>j</b>                        |               |                |                |
| <b>Lateral</b>     |                                          |               | <b>l</b>      |               |            |                                 |               |                |                |

The consonant sounds of Tùtrùgbù occur as stops, fricatives, retroflex, affricates, liquids, approximants and nasals. These consonant sounds are described according to their places of articulation, manner of articulation and phonation.

## 3.2.1.1 The Stops

The stops in Tùtrùgbù include /p, b, bh, t, d, k, g/. All the voiced stops have their voiceless counterparts except /b<sup>h</sup>/ which is also written as /bh/. The /bh/ is a distinct phoneme and does not occur in complementary distribution with /b/. The example (2) below are some minimal pairs to distinguish the various stops.

(2)    b/b<sup>h</sup>    i.        **aba** ‘progressive aspect marker’

**abha** ‘top’

                 ii.        **butu** ‘pocket’

**bhutu** ‘mountain’

                 p/b        **a-pè** ‘3SG-like’

**abɛ** ‘proverb’

|     |              |             |
|-----|--------------|-------------|
| t/d | <b>a-tɔ̃</b> | ‘CM-ears’   |
|     | <b>a-dɔ̃</b> | ‘CM-things’ |
| k/g | <b>kɛ</b>    | ‘but’       |
|     | <b>gɛ</b>    | ‘which’     |

### 3.2.1.2 The Fricatives

The fricatives in the language are /f/, /v/, /s/, /z/, /ʃ/, /ʒ/, /ɸ/, /β/, /x/, /h/, /xw/ and /ɸw/.

|        |      |              |              |
|--------|------|--------------|--------------|
| (3) a) | f/v  | <b>ɸɸɸɛ</b>  | ‘evil’       |
|        |      | <b>ɸɸɸɸɛ</b> | ‘little one’ |
|        | s/z  | <b>se</b>    | ‘that’       |
|        |      | <b>ze</b>    | ‘pot’        |
|        | ʃ/ ʒ | <b>shɛ</b>   | ‘go’         |
|        |      | <b>ʒɛ</b>    | ‘sing’       |
|        | x/h  | <b>axa</b>   | ‘fish trap’  |
|        |      | <b>aha</b>   | ‘wine’       |

The voiceless bilabial fricative /ɸ/ also written as /f/ and the voiced bilabial fricative /β/ also written orthographically as /v/ are found only in words borrowed from Ewe. Some examples are shown below.

|        |                |                                    |
|--------|----------------|------------------------------------|
| b) /f/ | <b>sefofo</b>  | ‘flower’                           |
|        | <b>Gagbefe</b> | ‘one of the communities of Nyagbo’ |
|        | <b>Fiafe</b>   | ‘one of the communities of Nyagbo’ |

The voiced bilabial fricative /v/ also occurs in a word with a class. Ewe has **vu** ‘lorry’ while Tùtrùgbù has **ovu** for the same word, ‘lorry’. The class marking is done to make the word conform to the phonological structure of the language. The **vu** is borrowed into the class of concrete nouns where /o/ is the singular class marker. The example is shown below.

|    |     |            |         |
|----|-----|------------|---------|
| c) | /v/ | <b>ovu</b> | ‘lorry’ |
|----|-----|------------|---------|

### 3.2.1.3 The Affricates

This class of consonant sounds is made up of /ts/, /dz/ and /dzy/.

|     |    |       |               |          |
|-----|----|-------|---------------|----------|
| (4) | a) | ts/dz | <b>tsá</b>    | ‘tie’    |
|     |    |       | <b>dzá</b>    | ‘mother’ |
|     |    | /dzy/ | <b>dzyatá</b> | ‘tiger’  |

The labio-velar stops include the following examples as shown in (4b) below.

|    |       |             |                |
|----|-------|-------------|----------------|
| b) | kp/gb | <b>ɛkpã</b> | ‘life, spirit’ |
|    |       | <b>gbã</b>  | ‘roast’        |



### 3.2.1.4 The Nasal Consonant Sounds

Tùtrùgbù has four nasal consonants. These are the bilabial nasal /m/, the alveolar nasal /n/, the palatal nasal /ɲ/ which is represented as /ny/ and the velar nasal /ŋ/. The bilabial nasal /m/ and the velar nasal /ŋ/ occur at word initial, word medial and word final. The palatal nasal /ɲ/ and the alveolar nasal /n/ however occur only at word initial and word medial. The following are examples of the distribution of nasal consonants in Tùtrùgbù.

- (5)      a)            /m/         mᵐ       ‘see’  
                 b)            /n/         nᵑ       ‘the’
- me       ‘in’  
ne       ‘and’

The palatal nasal /ɲ/ is orthographically represented as /ny/ in Tùtrùgbù.

- c) /ɲ/      **nyena** ‘hold’  
                  **banyɛ** ‘men’
- d) /ŋ/      **ŋa** ‘eat’  
                  **ton** ‘be able’

### 3.1.1.5 The Retroflex

There is a retroflex /ɖ/ in the language. It is produced on the alveolar ridge. The following are some examples of words containing the retroflex /ɖ/

- (6) /ɖ/    **ɖɔ**    ‘speak’                      **ɔtsɛɖɛ** ‘foot’  
                                                  **ɖi**    ‘watch’

### 3.2.1.6 The Liquids

The liquids comprise the trill /r/ and the lateral /l/ consonants. The trill /r/ in Tùrùgbù is found in words such as the following examples in (7) below.

- (7) a) /r/    **riɖiɖiɖi** ‘for long time’    **santubrɔ**    ‘ginger’  
                                                  **okoro**    ‘canoe’                      **ɔtsrɛ**                      ‘foot’

Some of the words that contain the lateral /l/ include the following in the example (7b) below.

- b) /l/                      **ɓkɔ**    ‘take’                      **ebělie** ‘antiquity’  
                                                  **ɔglǎ**    ‘jaw’                      **bulĩ**    ‘water’

### 3.2.1.7 The Approximants

The bilabial approximant /w/ occurs in words in the language at word initial, word medial but not word final. The following are examples.

(8) a) /w/     **wulĩ** ‘bathe’                      **awɔɛ** ‘to fall’

**wɔgã** ‘welcome’                      **wĩsĩ** ‘sleep’

The palatal approximant /j/ is orthographically represented as /y/.

b) /y/     **yɔhaɛ** ‘friend’                      **ayaba**                      ‘if it boils’

**yaba** ‘boil’                      **bieyo**                      ‘cry’

### 3.2.1.8 Complex Consonant Sounds

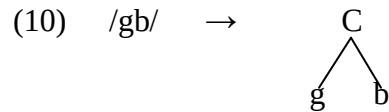
These complex sounds include palatal consonants and labio-velar double stops with simultaneous occlusion. Though these sounds are composed of two simple sounds in the surface forms, they underlyingly represent one consonant segment and they must be treated as such. (cf. Roca, 1994). These complex segments abound in the language. The following are some of the examples showing the complex consonant segments in words. The examples in (9) below illustrate the point.

(9)     /kp/    kɛkpǎ                      ‘the fish’

         /gb/    lugbu                      ‘mouth’

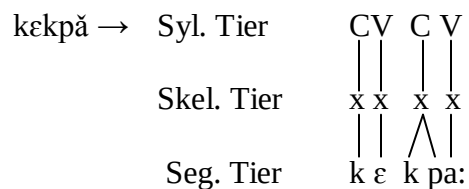
         /dzy/ dzyatá                      ‘lion’

The example (10) shows that the complex segment is made up of two simple segments. In other words, the complex segment is a consonant sound having one root with two germinates.



According to Bata (2002), a more appropriate way to account for such complex segments is to represent them as ‘multiple articulated but phonologically unitary segments’ as shown above. The following example in (11) also demonstrates how to account for complex segments using the word *kekpa* ‘the fish’ in the Autosegmental Framework.

(11) [kekpa:] ‘the fish’



In the example (11) above, the word *kekpa*: ‘the fish’ is composed of two simple segments /k/, /ε/ and /a/ and also the complex segment /kp/. The rising tone LH on the final vowel /ǎ/ of the root of the word shows that it is bi-moraic comprising the vowel of the word /ǎ/ and the determiner /á/ ‘the’. The word without the article ‘the’ is **kekpa** *fish* with the /a/ bearing a mid tone. The final /a/ with the rising tone shows that the article ‘the’ is embedded in it as it will be seen in §4.1.8 below. All the consonant sound segments in this presentation occur intervocalically

### 3.2.2 The Vowel Sounds

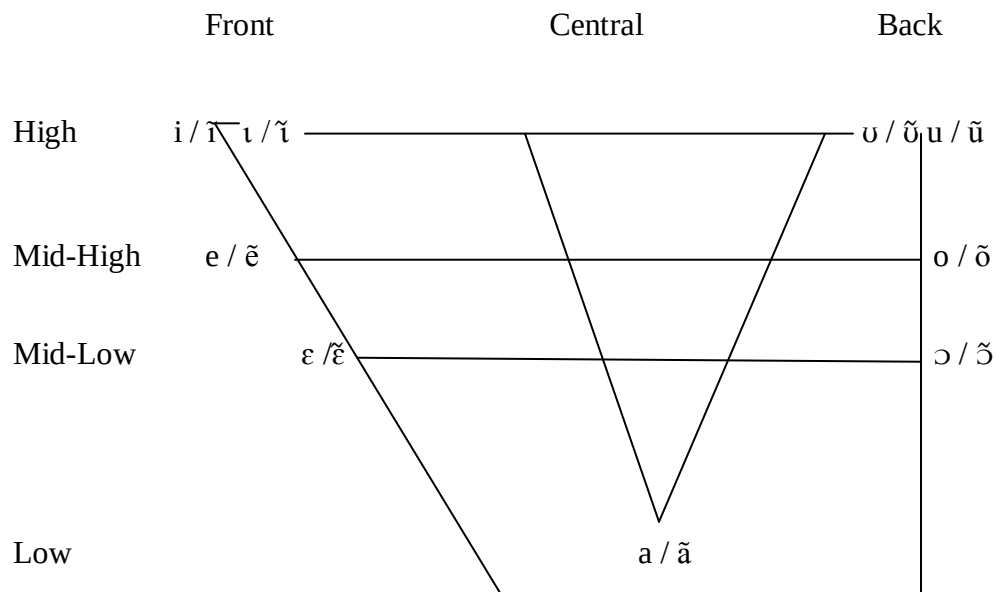
From the data collected for this study, the analyses indicate the following oral vowels and their nasal counterparts in Tùtrùgbù. They are shown in example (12).

(12) Tùtrùgbù Vowels

|      | FRONT  |        | CENTRAL | BACK   |        |
|------|--------|--------|---------|--------|--------|
|      | [+ATR] | [-ATR] | [± ATR] | [+ATR] | [-ATR] |
| High | i    ĭ | ɪ    ĩ |         | u    ũ | ʊ    ǔ |
| Mid  | e    ě | ɛ    ẽ |         | o    õ | ɔ    ǔ |
| Low  |        |        | a    ǣ  |        |        |

All the vowel sounds undergo ATR harmony. Nasality is phonemic in Tùtrùgbù as shown in §3.2.2.2 below. The vowels are shown below on the IPA vowel chart.

(13) The Vowel Chart showing the oral and nasal vowels of Tùtrùgbù



### 3.2.2.1 The Oral Vowel Sounds

The following are the oral vowel sounds in Tùtrùgbù and some of the words that contain them are presented in the examples below. The vowels are described according to the position of the tongue root, position of the velum, lip posture, tongue height, ATR and body of the tongue. The following examples are classification of the oral vowels.

|                      |              |
|----------------------|--------------|
| The Front vowels     | /i, ɪ, e, ε/ |
| The Central vowel    | /a/          |
| The Back vowels      | /u, ʊ, o, ɔ/ |
| The High vowels      | /i, ɪ, ʊ, u/ |
| The Mid-High vowels  | /e, o/       |
| The Mid-Low vowels   | /ε, ɔ/       |
| The Low vowel        | /a/          |
| The Rounded vowels   | /u, ʊ, o, ɔ/ |
| The Unrounded vowels | /i, ɪ, e, ε/ |
| [+ATR] vowels        | /i, e, o, u/ |
| [-ATR] vowels        | /ɪ, ε, ɔ, ʊ/ |
| [±ATR] vowel         | /a/          |

The following is the demonstration of how the vowel sound segments are distributed in words. The examples of words containing each of the vowels are shown below.

(14) The advanced front high vowel unrounded /i/

/i/      *kifu* ‘fire’, *kidzi* ‘heart’

(15) The retracted front high vowel unrounded /ɪ/

/ɪ/,    *kamɪ* ‘sew’, *dalɪ* ‘open’

(16) The advanced unrounded mid-high front vowel /e/

/e/      *ebu* ‘dog’, *hohe* ‘big’, *elititi* ‘up standing’

(17) The retracted unrounded mid-low front vowel /ɛ/

/ɛ/      *εkɛ* ‘there’, *kεpɔɛ* ‘cloth’, *kεvɔbɔ* ‘frog’

(18) The central low vowel /a/ co-occurs with both ATR and –ATR vowels in the language.

/a/      *kasalā* [kasana] ‘tortoise’ *anuvɔ* ‘child’,

(19) The advanced high rounded back vowel /u/

/u/      *ebu* ‘dog’, *taku* ‘head’

(20) The retracted high rounded back vowel /ʊ/

/ʊ/ *ɔhʊalɛ* ‘you’ll grind them’, *kɛmʊ* ‘breast’, *tsɔmʊ* ‘rotten’

(21) The advanced rounded mid-high back vowel /o/

/o/ *ɔnupɛ* [ɔmpɛ] ‘if/when’, *tenukpɔ* ‘one’, *hohɔɛ* ‘big/large’

(22) The retracted rounded mid-low back vowel /ɔ/

/ɔ/ *anuvɔ* ‘child’, *kɛvɔbɔ* ‘frog’, *nɔ* ‘the’

There are situations in which /e/ loses its [+ATR] value to become /ɔ/ for

harmony to be achieved. With vowels from the same [+ATR] set, the /e/ does not change. For example;

**be-dzui** ‘PL-mouse’

**be-blidza** ‘PL-snake’

The examples of words in which the /e/ loses its [+ATR] value in order to harmonize with the vowel of the stem include;

**be-dʒ** ‘PL-item’ becomes **[bɔdʒ]** ‘items’

**be-dzɔ** ‘PL-hail’ becomes **[bɔdzɔ]** ‘they hail’

As noted above, the /e/ in the plural marker prefix [be-] easily loses its [+ATR] values in order to harmonize with the [-ATR] vowel /ɔ/ in the stem of the words illustrated above. The next section presents and discusses the nasal vowel sounds of the language.



### 3.2.2.2 The Nasal Vowel Sounds

The following are the nasal counterparts of the oral vowels described above in examples (14-22). The words containing the nasal vowels are shown in the example (23) below.

- (23) a)
- |     |                                                      |
|-----|------------------------------------------------------|
| /ĩ/ | <i>zĩensi</i> ‘sit’, <i>kizĩ</i> ‘pea nut’           |
| /ĩ/ | <i>apĩ</i> ‘good’, <i>kɛĩ</i> ‘river’                |
| /ẽ/ | <i>asẽ</i> ‘rice’                                    |
| /ẽ/ | <i>adzẽ</i> ‘woman’ <i>anyẽ</i> ‘man’                |
| /ã/ | <i>kasalã</i> [kasana] ‘tortoise’, <i>ɔglã</i> ‘jaw’ |
| /ũ/ | <i>vũ</i> ‘catch’, <i>kɛdulũ</i> ‘entrance’          |
| /ũ/ | <i>kɛwũlakpa</i> ‘leaf’                              |
| /õ/ | <i>kpe.õzi</i> [kpõzi] ‘shout’                       |
| /õ/ | <i>kɛdõ</i> ‘thing/item’                             |

Nasality is contrastive as shown below. The following words in example (23b) are showing nasality as contrastive and phonemic.

- b. i.    *adzɛ*            ‘witchcraft’  
           *adzẽ*            ‘woman’
- ii.    *gba*            ‘break’  
           *gbã*            ‘roast’

### 3.2.2.3 Vowel Sequence

Many words contain vowel sequences in the language. The example below shows some of the possible occurrences of vowel sequence in Tùtrùgbù.

(24) Showing the possible vowel sequence in Tùtrùgbù

|   | i  | ɪ | e  | ɛ  | a  | ɔ  | o  | ʊ | u |
|---|----|---|----|----|----|----|----|---|---|
| i | ii |   | ie | iɛ | ia |    |    |   |   |
| ɪ |    |   |    | ɪɛ |    | ɪɔ |    |   |   |
| e | ei |   | ee |    | ea |    |    |   |   |
| ɛ |    |   |    | ɛɛ |    |    |    |   |   |
| a |    |   | ae |    | aa |    |    |   |   |
| ɔ |    |   | ɔe | ɔɛ |    | ɔɔ |    |   |   |
| o |    |   | oe |    |    |    | oo |   |   |
| ʊ |    |   |    |    | ua |    |    |   |   |
| u | ui |   |    |    | ua | uɔ | uo |   |   |

The following are some examples of vowel sequence found in the language as shown above. The vowel sequences lead to the realization of long vowel sounds in the cases where the same vowel occurs in the sequence. Apart from the /ii/ in *plii* ‘very early’, /ee/ in *petee* ‘all’ or ‘completely’ and /oo/ in *hoo* ‘to watch in dismay’ which are used as intensifiers, the others such as /ɛɛ/, /aa/ and /ɔɔ/ have the determiner ‘the’ inherent in them as shown in the example (25) below. It will

be seen in §3.4.4 on page 80 that there is a  $V_1$  deletion rule in the language which applies when two words are compounded. If the first word ends with a vowel and the second word is also vowel initialed, the final vowel of the preceding word deletes for the prefix vowel of the second word to stay. This rule however has not been observed in the discussion of the vowel sequences because no word with vowel sequence has been compounded. This may be due to the grammatical functions of the  $V_2$  of the VV sequence explained in §3.3.2.6 below. The following are examples of words demonstrating vowel sequences.

- (25) /ii/ *plíí* [plí:] ‘very early’  
 /ie/ *éběífe* ‘antiquity’  
 /iɛ/ *anyɛɛ* [anyíɛ] ‘the man’  
 /ia/ *kanyíaka* ‘everyone’  
 /ɪɔ/ *alɪɔba* ‘be beside’  
 /ee/ *petee* [pete:] ‘all’ or ‘completely’  
 /eɛ/ *ɔdɛɛ* ‘you’ll cover it’  
 /ea/ *yeazã* ‘his stay’  
 /ɛɛ/ *kɛpɔtɛɛ* ‘the cloth’  
 /æ/ *yɔhae* ‘his friends’  
 /aa/ *kasalãa* ‘the tortoise’  
 /ɔɛ/ *anuvɔɛ* [anuvɔɛ] ‘the child’  
 /ɔɛ/ *lɔkɔɛ* ‘take it’

|      |                |                                                               |
|------|----------------|---------------------------------------------------------------|
| /ɔɔ/ | <i>kɛvɔbɔɔ</i> | ‘the frog’                                                    |
| /oe/ | <i>hohoe</i>   | ‘big / large’, <i>kihoe</i> ‘cowries’, <i>kibluxe</i> ‘ladle’ |
| /ui/ | <i>kiblui</i>  | ‘small / large’, <i>bui</i> ‘word’                            |
| /uɔ/ | <i>ebuɔ</i>    | ‘the dog’                                                     |
| /uo/ | <i>kifuo</i>   | ‘fire’                                                        |
| /oo/ | <i>hóó</i>     | ‘to look in dismay’                                           |
| /ua/ | <i>ebualie</i> | ‘the dog’                                                     |
| /ua/ | <i>hualɛ</i>   | ‘grind it’, <i>bualɛ</i> ‘remove it’                          |

### 3.3.1 The Syllable

The consonants and vowels of the language as presented above are combined in different but systematic ways into phonological words. According to Crystal (2008), the syllable is a unit of pronunciation typically larger than a segment but smaller than a word. This description of the syllable is adopted to describe the syllable patterns found in Tùtrùgbù.

### 3.3.2 Syllable Types

Tùtrùgbù has syllable patterns such as V, VC, CV, CCV and CVC as demonstrated below. The C<sub>2</sub> in the CCV structure may be /l/, /r/ or a glide and the coda C in the structure of CVC is normally the bilabial nasal /m/ or the velar nasal /ŋ/. So the CVC could also be labeled as CVN. The syllable as explained is made up of the **onset**, **nucleus** and **the coda**. The onset is usually a consonant, the

nucleus contains the vowels within the syllable while the coda is a consonant (oral or nasal).

### 3.3.2.1 The V syllable type

There are many words having the V syllable type in the language. The V syllable is usually a vowel prefix to the root word as shown in the following examples.

In Tùtrùgbù, there are infinite examples of words in which only a vowel can constitute a syllable. The following are some examples:

(26) ɛ | lí ‘palm fruits’

a | dzẽ ‘woman’

ò | tú ‘gun’

The syllable structure in which a vowel alone constitutes a syllable is labeled **V**. The vowel segments in Tùtrùgbù standing as syllables in the V syllable type are either noun class markers or they are pronominal affixes. Some of the words in which the V syllable is a noun class marker include the following:

(27) a.      ò | lí                    ‘neck’                    →      V | cv

b.            ò | hòε                    ‘hand’                    →      V | cv

c.            ò | tsèdǣ                    ‘foot’                    →      V | cvcv

All the words in the example 27 above fall into the class of body part nouns. They belong to the class 3 singular group. The example of words in which the V syllable pattern is a pronominal is also shown in the example (28) below.

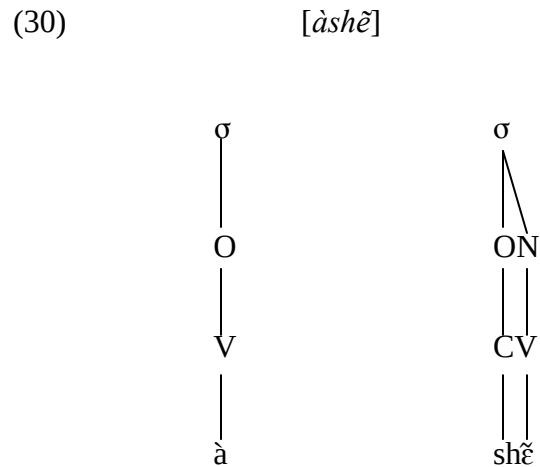
- (28) a.         $\text{ɔ̀} \mid \text{pè}$  2SG.like                       $\rightarrow$         V  $\mid$  cv  
                  ‘You like’        [C.1]
- b.         $\text{ɔ̀} \mid \text{gbã}$  2SG.roast                       $\rightarrow$         V  $\mid$  cv  
                  ‘You roast’        [C.1]

The initial prefix /ɔ̀/ in the words *ɔ̀pè* ‘you like’ and *ɔ̀gbã* ‘you roast’ is the 2<sup>nd</sup> person singular subject pronoun in Tùtrùgbù. It is therefore clear from the examples (27) and (28) above that the V syllable in Tùtrùgbù is made of a noun class marker or a pronominal. The code [C.1] refers to sentence 1 of Appendix C. Other words in which the V syllable is neither class marker nor pronominal are shown in the example (29) below.

- (29) a.         $\underline{\text{a}} \mid \text{nyɛ}$  ‘man’                       $\rightarrow$         V  $\mid$  cv
- b.         $\underline{\text{a}} \mid \text{dzẽ}$  ‘woman’                       $\rightarrow$         V  $\mid$  vc
- c.         $\underline{\text{e}} \mid \text{bu}$  ‘dog’                       $\rightarrow$         V  $\mid$  cv

These nouns however are class 2 nouns whose plural markers are **ba-/be-** in their plural forms presented as *banyɛ* ‘men’, *badzẽ* ‘women’ and *bebu* ‘dogs’.

The following is an example to illustrate the V syllable type using the word *àshě* ‘left (verb)’ in the Moraic Theory.



The illustration in the example (30) above shows clearly that the /a/ in the word constitutes a V syllable type.

### 3.3.2.2 The VC syllable type

The VC syllable, **af** -, comprises a vowel at the peak and a consonant at the coda. As the examples in (31) show, the VC syllable type occurs because a vowel is deleted in the word to make it a VC instead of the VCV. This syllable type is particularly identified in the words *afitalě* [aftalě] ‘forty’, *afitanse* [aftanse] ‘eighty’ and *onupε* pronounced as [ɔmpε] ‘if’.

- (31)
- |                    |                |                      |
|--------------------|----------------|----------------------|
| a) <b>af</b> 'talě | <b>‘forty’</b> |                      |
| afi #              | talě           | →                    |
| bundle             | four           |                      |
|                    |                | af'talě              |
|                    |                | forty (four bundles) |

- b) **af 'tanse** 'eighty'  
 afɪ # tanse → af 'tanse  
 bundle eight eighty
- c) ɔm#pɛ 'if'

The VC syllable as presented in the examples (31) above, shows a rather resyllabification of the words. The V | CV | CVN | CV has been rendered VC | CVN | CV as a result of the deletion of the nucleus of the second syllable. The onset consonant of the second syllable, which has been left alone, realigns itself to the initial vowel to give rise to the structure VC as shown above. This is confirmed in Bobuafor (2013:17). This is further illustrated in the Autosegmental Framework as shown below in example (32).

(32) **afitanse** [aftanse] 'eighty'

|            |                                       |                     |                |
|------------|---------------------------------------|---------------------|----------------|
| Syll. Tier | V   C V   CVN   CV                    | V   C V   CVN   C V | V C   CVN   CV |
|            |                                       |                     |                |
| Skel. Tier | X XX XXX XX → X XX XXX XX → XX XXX XX |                     |                |
|            |                                       |                     |                |
| Seg. Tier  | a f ɪ t a n s ɛ                       | a f ɪ t a n s ɛ     | a f t a n s ɛ  |

As explained above, the illustration shows the deletion of the [-ATR] high front unrounded vowel /ɪ/ from the structure to render the V | C V | CVN | CV syllable pattern to VC | CVN | CV.

These processes can be formalized in the rule (59) as follows:



(33)   afitanse → [afʔtanse]

$$V_1 | \mathbf{C}V_2 | \mathbf{C}VN_3 | \mathbf{C}V_4 \quad \rightarrow \quad \mathbf{V}\mathbf{C}_1 | \mathbf{C}VN_2 | \mathbf{C}V_3$$

$$V \rightarrow \emptyset \quad / \quad C - \#$$

$$\begin{pmatrix} \text{-ATR} \\ \text{+high} \\ \text{-rd} \end{pmatrix}$$

As can be seen from the illustrations in (33) above, the underlying /ɪ/ does not appear in the surface form of the word **afɪtansɛ** [**afʔtansɛ**]. This is as a result of the deletion process. The formalization of the process is therefore summed up in (34) thus:

- (34) a) Delete /r/ from CV<sub>2</sub> (the second syllable)

- b) Re-align the V | C- | CVN | CV into VC | CVN | CV

The resyllabification of the first and the second syllables resulting into the VC as explained above invokes the feeding rule where (34a) applies first for the (34b) to take effect.

### 3.3.2.3 The CV syllable type

The CV syllable is the commonest of all syllable patterns in African languages (cf. Crystal, 2008:468). The CV syllable type may be composed of consonant segments such as /p/, /f/, /s/, /k/, /dʒ/ also /dz/, /tʃ/ also /ts/, /ɲ/ also /ny/, /gb/ and

/kp/. The C may be any consonant segment, both oral and nasal, except /f/, /U/, /x/ and /fiw/ which are not permitted at the onset of syllables in Tùtrùgbù. The peak of prominence or the nucleus V may also be occupied by any vowel segment, oral, or nasal. The example (35) below shows some of the words in Tùtrùgbù which have the CV syllable type. The CV syllable can be a morpheme on its own in monosyllabic words. It can also occur in series or multiples as in polysyllabic words.

(35) a) CV syllable type with simple consonant segments

**tɔ** ‘cook (e.g. soup)’ → **CV**

**gé** ‘cook (e.g. banku)’ → **CV**

**dɔ** ‘thing’ → **CV**

**ɲà** ‘eat’ → **CV**

b) CV syllable type with complex consonant segments

**tɕa** ‘tie’ → **CV**

**kpe** ‘with’ → **CV**

**dzi** ‘buy’ → **CV**

**gbã** ‘roast’ → **CV**

c) CV syllable type in multiples as a morpheme

**kɛ|pɔ|tɛ** ‘cloth’ → **CV|CV|CV**

**bu|ɲa|ɲa** ‘food’ → **CV|CV|CV**

**ka|hɔ|kpɔ** ‘waist’ → **CV|CV|CV**

**té|nú|kpó** ‘one’ → **CV|CV|CV**

**ta|kpu** ‘head’ → **CV|CV**

**ɔ|tsɛ|dɛ** ‘foot’ → **V|CV|CV**

**ba|dzɛ** ‘women’ → **CV|CV**

As indicated earlier, the complex segments are treated as single consonant segments. The next section discusses the CCV syllable type.

### 3.3.2.4 The CCV syllable type

This type of syllable structure is composed of consonant clusters. The C<sub>2</sub> position is occupied by liquids and glides. The following words in examples (36) present some of the words in which the CCV syllable pattern is identified.

(36) a) the CCV syllable with liquids

i. The lateral

**p̣li**-i ‘dawn / early in the morning’ → **CCV | v**

be-**ḅli**-dza ‘snakes’ → **cv | CCV | cv**

kɛ-**ḳla**-gbu ‘stone’ → **cv | CCV | cv**

ii. The trill

san-ti-**bṛ** ‘ginger’ → **cvN | cv | CCV**

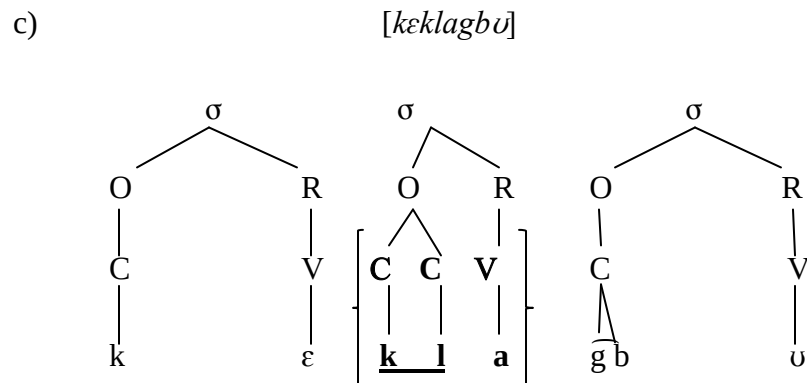
b) The CCV syllable with the glide

ki-**mwi** 'lake' → cv | CCV

ki-**hwi** 'rope' → cv | CCV

**lwe**-titi 'up standing' → CCV | cv | cv

The following is the syllable structure of *kekɫagbu* 'stone' showing consonant clusters in the Moraic Theory.



From the tree above, it is shown that the word *ke#kla#gbu* 'stone' has three syllables with each syllable having one peak of prominence. The break may be done as *ke-kla-gbu* giving the syllable pattern CV-CCV-CV. In the first syllable, there is one consonant at the onset (O) and a vowel at the nucleus or the rhyme (R). The second syllable presents a consonant cluster of a stop and a lateral at the onset (O) (set out in square brackets in the diagram) and a vowel at the rhyme (R) while the third syllable is composed of a complex consonant segment of a labio-velar /gb/ at the onset (O) and a vowel at the rhyme (R).

### 3.3.2.5 The CVN syllable type

The CVN syllable structure may also be called CVC where **N** represents nasal consonants. The onset consonant segment may be any consonant, a vowel at the nucleus and a nasal consonant at the coda. Some of the words which contain the CVN syllable are shown in the example (37) below.

(37) **san**-ti-brɔ 'ginger' → CVN | cv | ccv

**bɔŋ** 'rather' → CVN

**tɔŋ** 'be able' → CVN

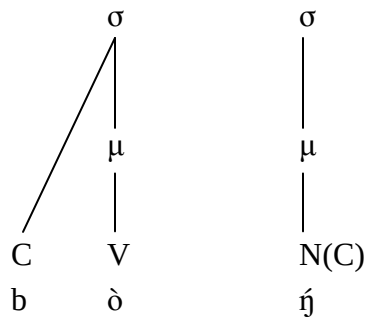
bɔ-**pam** 'house' → cv | CVN

It can be seen that in the coda position of the CVN syllable type is a nasal. It is also evident that the CVN syllable type occurs in words like **bɔŋ** 'rather' and **tɔŋ** 'be able', bɔ-**pam** 'house' and also in polysyllabic word like **san-ti-brɔ** 'ginger'.

As the data in example (37) have shown, the CVN syllable type also occurs in word initial position, within the stem of the word and also at word final position. The CVN syllable is illustrated as disyllabic below in the Moraic Theory.

(38) **bɔŋ** 'rather'

[bò#ń]



As it can be seen from the example above, the word *bòń* ‘rather’ has two syllables namely, CV and N (C). This is shown in the example (39) below.

(39) *bòń* ‘rather’ → *bò|ń* CV | N

As note in §3.2.1.4 above, only the bilabial nasal /m/ and the velar nasal /ŋ/ occupy the coda position in the CVN syllable.

### 3.3.2.6 The CVV syllable type

The CVV syllable type is composed of a consonant segment followed by a sequence of two vowel segments. The C may be any consonant sound while the V<sub>2</sub> in the VV sequence is selected to harmonize with the V<sub>1</sub> either according to height, frontness or rounding even as ATR values are maintained. Some examples are shown in (40) below.

## (40) a) Selection of VV according to height

- i. High vowels → **bui** ‘break’ - CVV
- ii. Mid-High vowels → **kihoe** ‘cowry’ - CVV
- iii. Mid-Low vowels → **lɔkɔɛ** ‘take it’ - cv|CVV
- iv. Low vowel → **kasalãa** ‘the tortoise’ - cv|cv|CVV

## a) Selection of VV according to frontness

- i. **kokonteĩ** ‘dried cassava powder’ → cv|cvN|CVV
- ii. **anyɛɛ** ‘the man’ → v|CVV

## b) Selection of VV according to backness / roundness

- i. **ebuɔ** ‘the dog’ → v|CVV
- ii. **kifuo** ‘the fire’ → cv|CVV

From the data available, two types of the CVV syllable structures are identified. The first of the CVV is the one that may be taken as a single morpheme and the second type is the one that may be taken as two morphemes. In the case of the second type of the CVV syllable type, the VV is not just a sequence of vowels but the  $V_1$  is the vowel segment of the root word whereas the  $V_2$  is a suffix vowel attached to the root word to perform grammatical functions like modifiers, interjectives and pronominals and clause markers. This pattern of words may be

described as di-syllabic. The example (41) shows words containing the CVV syllable types.

(41) a) CVV as a morpheme

|                              |   |        |
|------------------------------|---|--------|
| <b>bui</b> ‘break’           | → | CVV    |
| ki  <b>hoe</b> ‘cowrie’      | → | cv CVV |
| <b>bua</b>  ɛ ‘cover it’     | → | CVV cv |
| ho  <b>hoe</b> ‘large / big’ | → | cv CVV |

b) CVV as two morphemes

This CVV syllable type can be represented as CV|V where the CV is the root word and the V<sub>2</sub> is suffixed for the grammatical reasons outlined above. The examples in (41b (i-iii)) below show the CVV as two morphemes in each case where in (i), the stems and the determiners are separate morphemes.

b) i. CVV in which the V<sub>2</sub> is a determiner

|                      |                |   |           |
|----------------------|----------------|---|-----------|
| kɛ vɔ bɔ#ɔ           | ‘the frog’     | → | cv cv CVV |
| ka sa lã#a [kasanaa] | ‘the tortoise’ | → | cv cv CVV |
| a nyɛ#ɛ              | ‘the man’      | → | v CVV     |
| kɛ pɔ tɛ#ɛ           | ‘the cloth’    | → | cv cv CVV |
| e bu#ɔ               | ‘the dog’      | → | v CVV     |



The second vowel  $V_2$  in each case of the above examples is functioning as the definite determiner ‘the’.

ii. CVV in which the  $V_2$  is an interjective / intensifier

**pli#i** ‘very early in the morning’ → CCVV

**ho#o** ‘to look in dismay’ → CVV

In the examples in (41cii) above, the *plii* ‘very early in the morning’ provides an example of the CCVV syllable structure. The second /i/, the  $V_2$  could be seen as an intensifier emphasizing time. The *hoo* ‘to look in dismay’ is an idiophone expressing dismay as a result of shock or disbelief. It could be concluded that, the  $V_2$  in the CVV syllable type expresses mood.

iii. a) CVV in which the  $V_2$  is a pronominal

lɔ|**ko#ε** ‘take it’ → cv|CVV

The word lɔ|**koε** ‘take it’ is shown in (iii b) below.

b) ɔ-lɔkɔ-ε vè nɔ gaté esí

|                                 |    |     |      |       |
|---------------------------------|----|-----|------|-------|
| ɔ-lɔkɔ-ε                        | vè | nɔ  | gaté | esí   |
| 2SG-take-3SG                    | go | DET | mill | under |
| ‘You take it to the mill’ [C.5] |    |     |      |       |

The  $V_2$  in the CVV syllable functioning as a pronominal is an exception because in Tùtrùgbù, the pronominals are prefix vowels that are prefixed to the verb stem.

The word lɔkɔ ‘take’ is the verb stem and the final vowel  $V_2$  /ε/ is functioning as a 3<sup>rd</sup> person singular pronoun ‘it’.

iv. CVV in which the V<sub>2</sub> is a clause marker

Another grammatical function of the V<sub>2</sub> in the CVV syllable type is acting as a clause maker or topicalizer - a word, and in this case, a vowel segment that indicates the end of a clause or a phrase. The following are some examples as shown in (42) below.

- (42) i. ko|kon|te#i ‘dried cassava powder’ → cv|cvc|CVV  
 ii. pé|té#i ‘completely’ → cv|CVV

The V<sub>2</sub>, /i/, in the examples (42 i and ii) above is functioning as a clause marker. This is further illustrated in the following utterances in example (43) below. Some of the utterances are cross referenced from the appendices as explained above. The reference numbers are shown in square brackets at the end of the literal translations. For example [C.20] means, sentence 20 in Appendix C.

(43) i. onúpè ósè ogé kokonte-i ǝpɛ bulĩ ...

|       |          |          |                  |              |        |
|-------|----------|----------|------------------|--------------|--------|
| onúpè | ósè      | ogé      | <u>kokonte-i</u> | ǝpɛ          | bulĩ,  |
| if    | 2SG.want | LOG.cook | kokonte-CL M     | 2SG.POT.look | water, |

‘If you want to cook kokonte, you look for water, ...’

ii. ǝmpɛ agbe nɔ vũ fú pɛ ye me ákpa pété-i

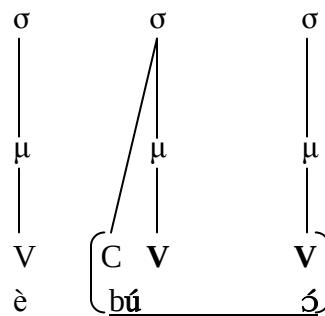
|      |      |     |       |      |      |     |     |      |               |
|------|------|-----|-------|------|------|-----|-----|------|---------------|
| ǝmpɛ | agbe | nɔ  | vũ    | fú   | pɛ   | ye  | me  | ákpa | <u>pété-i</u> |
| if   | pan  | DET | catch | fire | like | 3SG | LOC | dry  | ADV-TP        |

‘If the pan gets hot enough’ [C.20]

The examples in (43 i and ii) have shown that, the  $V_2$  is a clause maker. The CVV syllable is analyzed as di-syllabic because each of the vowels in the VV sequence has peak of prominence. This is shown below using the word *èbúɔ* ‘the dog’.

(44) *èbúɔ* ‘the dog’

[è#bú#ɔ] ‘



The point of interest which the diagram illustrates is the part of the word boldened in square brackets in the example (44) above.

In Tùtrùgbù, the syllable structure of some words change across word boundaries by the process of resyllabification. The following are some examples:

(45)    te-ólóló                      →        tó-lókó  
           FUT-take                      FUT-take  
           ‘You’ll take’

In the example (45) above, the underlying form has the syllable structure CV-V|CV|CV. The structure becomes CV-CV|CV in the surface form. It is

conspicuous that the vowel /e/ has been deleted in the process. The example (46) below is another interesting case for the change of syllable structure.

(46) ονύρε → [ɔmpɛ]  
‘if’ ‘if’

It can be seen that the structure of the underlying form of *onúpe* ‘if’ is V|CV|CV. This has changed to *ɔmpe* ‘if’ with the structure VC|CV. The underlying form of the word has three syllables being V|CV|CV whereas in the surface form, it has reduced to two. The second syllable o[**nu**]pe which is a CV has been replaced by the bilabial nasal consonant /m/ which is a C. the /m/ is realized by two phonological rules. The /u/ was deleted rendering the word [onpe] and by the process of homorganic assimilation, the /n/ got assimilated to the place of articulation of the bilabial /p/ thereby realizing the /m/. The final [-ATR] front-mid high vowel /ɛ/ then triggers a harmony with the initial [+ATR] back mid-high vowel /o/ to realize the [-ATR] back mid-low vowel /ɔ/ to achieve a [-ATR] vowel harmony in the final realization of the word *ɔmpe* ‘if’.

The phonological rules operating in the case above are formalized as follows:

- First delete /u/ to have **onpɛ**
- Change /n/ to /m/ by homorganic assimilation to have **ompɛ**
- Harmonize the [+ATR] back mid-low vowel /o/ with the [-ATR] front mid-high vowel /ɛ/ to become /ɔ/ to have [ɔmpɛ] ‘if’.

The following examples in (47) again show restructuring of syllables at sentence levels across word boundaries.

- (47) a) **bɔ # pa # mɛ** ‘in home’ → **[bɔ pam]** ‘in home’  
 b) **bu # vɔ # mɛ** ‘in room’ → **[buvɔm]** ‘in room’  
 c) **kpi # mɛ** ‘put in’ → **[kpim]** ‘put in’

The **[mɛ]** in each case, is a locative particle meaning ‘in’. It appears that the language does not accept /ɛ/ at word final when it follows the bilabial nasal /m/ so any time it appears in the sequence; it gets deleted as shown in the examples above. It appears therefore that Tùtrùgbù turns a rather open syllable to a closed one in the cases where the word ends with the mid low front vowel /ɛ/ following /m/. Other locatives such as **shu** ‘beside’, **esi** ‘under’, **abha** ‘top’ and others do not have their final vowels deleted. The syllable structure of the examples (47a and b) above can be written as the following in example (48) below:

- (48) CV CVCV → CVCVC

The example (48c) can also be structurally written as CV|CV → CVC. The deletion of the front mid-low vowel /ɛ/ could be formally expressed as:

$$\left( \begin{array}{c} \text{V} \\ +\text{front} \\ \text{Mid low} \\ -\text{ATR} \end{array} \right) \rightarrow \emptyset / m - \# \#$$

The /ε/ however occurs after all other consonant segments at word final position in the language. The following are some words in which the /ε/ occurs at word final position after other consonant segments.

- (49) a) εklε            ‘there’  
       b) kεpɔtε        ‘cloth’  
       c) ɔtsɛdε        ‘foot’  
       d) aǵɪpε        ‘dislike’  
       e) vε            ‘go’

Another instance of syllable restructuring in Tùtrùgbù is shown in the following example.

- (50) i. **kpe kifu** ‘set fire’ → **[kpifu]** ‘set fire’

The syllable structure CV|CV|CV has become CV|CV. In this case, a whole syllable is deleted. The vowel /ε/ is assimilated to the following vowel /i/ in the following syllable [ki] becoming [kpi] after which the [ki] is deleted rendering the verb phrase as *kpi fu* ‘set fire’ with the syllable structure CV|CV instead of the *kpe kifu* ‘set fire’. The verb phrase is shown in example (50 ii) below.

- (ii) ɔbɔ kpi fúo lèbè bí

|                                                       |           |         |            |
|-------------------------------------------------------|-----------|---------|------------|
| ɔbɔ                                                   | kpe-kifúo | lèbè    | bí         |
| 2SG-AUX                                               | set-fire  | 3PL-AUX | cook.COMPL |
| ‘You will attend to the fire until it will be cooked’ |           |         |            |

[D.2]

From the data available, vowel harmony in Tùtrùgbù occurs across consonant segments. The following are some evidence from the language.

- (51) a) **onupɛ** ‘if’ → **[ɔmpɛ]** ‘if’
- b) **kpɛ kifu** ‘set fire’ → **[kpifu]** ‘set fire’
- c) **bé ávè bɔ́pámè** → **[bávɔ́pám]**  
     bé      á-vè              bɔ́pá    mè (me)  
     PL     PST-go          home LOC  
     ‘They went home’

The following examples in (52) also show the patterns discussed in the (50) above.

- (52) a) **ye aba** → **yaba** ‘will boil’
- b) **ebe abɔkɔ** → **ebabɔkɔ** ‘you’ll take’

The examples in (52a and b) also show evidence of segment deletion and restructuring of the syllable structure. The example (52a) has the structures CV|V|CV. The vowel /e/ of the first syllable gets deleted and the onset consonant gets attached to the vowel /a/ at the onset of the following syllable thereby giving rise to a new structure CV|CV. The example in (52b) also exhibits a similar occurrence in that the syllable structures V|CV|V|CV|CV have been realigned to become V|CV|CV|CV.

The syllable structures found in Tùtrùgbù can be summarized as shown in the following examples.

- (53) V - ɔgã ‘bell’
- VC - af’talẽ ‘forty’, af’tanse ‘eighty’
- CV - gé ‘cook’ (as in solid food), shi ‘fetch’, kpɛ ‘put’
- CCV - blí ‘little’, bɔ|bli ‘awhile’
- CVC - toŋ ‘be able’, boŋ ‘rather’
- CCVV - plii ‘very early in the morning’
- CVV - bui ‘word’

The next section presents and discusses tone and its processes in Tùtrùgbù.

### 3.4.0 Tone

One cannot talk about Tùtrùgbù without referring to tones. Like many West African languages, Tùtrùgbù is a tone language because it combines consonants, vowels and tone to form morphemes. The meaning a speaker intends to communicate in a tone language like Tùtrùgbù depends largely on the interaction between tone, prosody and syntax. (cf. Aboh and Essegbey, 2010).



To fully understand the concept of tone, Yip (2002) notes that there are three key terms that we need to distinguish. They are *Fundamental frequency* ( $F_0$ ), *pitch* and *tone*. According to Yip (2002), fundamental frequency ( $F_0$ ) is an acoustic term referring to the sound signal itself, which is, how many pulses per second the signal contains, where, in the case of speech signal, each pulse is produced by a single vibration of the vocal folds. The frequency of these pulses is measured in Hertz (Hz). One Hertz is one cycle per second. He explains *Pitch* as a perceptual term. That is, what is the hearer's perception of the signal: is it heard as high in pitch or low in pitch, the same pitch as the previous portion of signal, or different? She concludes that *tone* is a linguistic term which refers to a phonological category that distinguishes two words or utterances.

Akanlig-Pare (2005) affirms the fact that the vocal folds vibrate in the production of tones and further indicates that in adult males, the vibration occurs between 50 - 250 t/s whereas in children and women, it ranges between 120-480 t/s. Each vibration is considered a complete cycle. Tone is measured in hertz. The number of cycles per second derived, the higher the pitch produced.

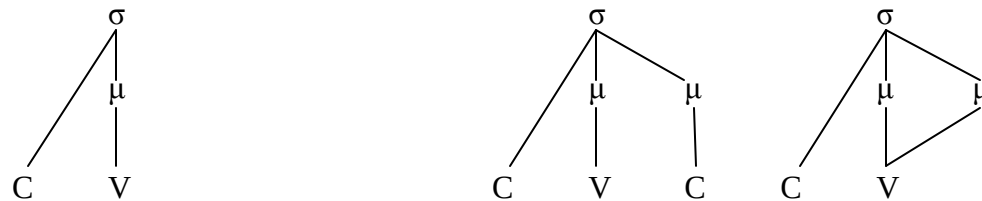
### 3.4.1 Tone Bearing Units (TBUs)

The tone bearing units (henceforth, TBUs) are the sound segments on which tones are superimposed. These TBUs are vowels and nasals in Tùtrùgbù. Akanlig-Pare (2005) states that, tone is a suprasegment and as such, its features reside only at a domain larger than a segment. He further states that, TBU can be the Mora or the

syllable explaining that, one general way of establishing TBUs is to determine the weight of the syllable that bears the particular type of tone. If a language exhibits an occurrence of one tone to one mora, such that monomoraic light syllables bear only a single – simple tone such as a level high, mid or low whereas for complex tone such as rising or falling contour, there would be a bimoraic heavy syllable. In that instance, the mora is the TBU. However, if both light monomoraic and heavy bimoraic syllables can bear the same type of tones both simple and complex in the same language, then the TBU must be the syllable.

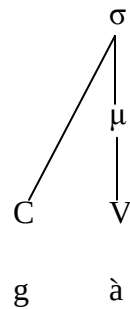
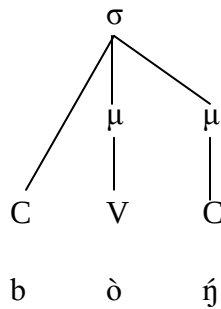
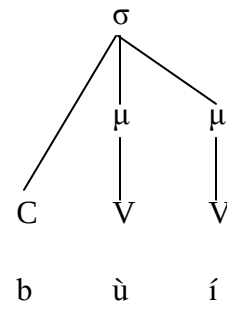
The syllable (TBU) can be represented as the following in (54) below:

(54) i. Light syllable                      ii.        Heavy syllable                      iii. Heavy syllable



[Oostendorp, 2005:2]

The syllable type in i) is CV, ii) is CVC and iii) CVV. The Mora Theory above shows that the CV in i) is a light syllable, the CVC in ii) is a heavy syllable and the CVV in iii) is also a heavy syllable. In Tùtrùgbù, both light and heavy syllable patterns described above bear both simple lexical tones and complex and contour tones in the syllable. The tone bearing unit (TBU) in Tùtrùgbù is therefore the syllable. The TBU is further explained using some words from the language in (55) below.

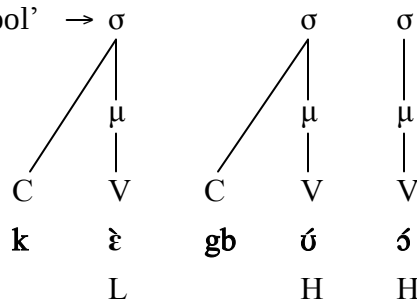
(55) a) **gà** ‘walk’b) **bòŋ** ‘rather’c) **bùí** ‘break’

From the examples in (55a-c) above, it could be seen that the segments on which tones are marked in each case occur within the same domain which is the syllable.

These further show that the TBU in Tùtrùgbù is the syllable.

Further, all the vowel segments in the word *kègbúś* ‘the stool’ in example

(56) below bear tones. Each of these toned vowels occurs within the syllable as illustrated in the Moraic Theory (56) here. This again shows that the tone bearing unit in Tùtrùgbù is the syllable.

(56) *kègbúś* ‘the stool’

### 3.4.2 The Tone Inventory

Tùtrùgbù, as already mentioned, is a tone language with three level tones namely

High, Mid, and Low in addition to two contour tones which are Rising and

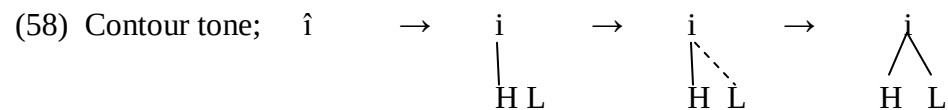
Falling. The tone inventory is shown below in example (57). They are marked with the following diacritics: High [´], Mid [¯], Low [̀], Rising [ ˇ] and Falling [ˆ].

- (57) a) High -      **dzí**    ‘buy’  
                                  **bá**    ‘come’  
                                  **dé**    ‘sell’
- b) Mid    -      **nē**    ‘and’  
                                  **gē**    ‘which’  
                                  **vē**    ‘go’
- c) Low    -      **t̀̀**    ‘cook’  
                                  **m̀̀**    ‘see’  
                                  **z̀̀**    ‘sit’
- d) Rising -      **badzˇ** ‘the women’  
                                  **nikpˇ** ‘the corn’  
                                  **kɛdzˇ** ‘the meat’
- e) Falling -      **nˆ**    ‘on’  
                                  **bɛkˆ** ‘finish’

The examples in (57d and e) have two moras each. The nouns **badzˇ** ‘the women’, **kɛdzˇ** ‘the meat’ and **nikpˇ** ‘the corn’ have their determiner expressed

in the final vowels /ɛ/, /ǎ/ and /ě/. The preposition **nê** ‘on’ and the verb **bəkê** ‘finish’ however do not express grammatical number. The falling tones marked on the final vowels of **nê** ‘on’ and the verb **bəkê** ‘finish’ are therefore lexical and not grammatical.

One of the motivations for the use of the Autosegmental Theory is to demonstrate contour tones. An example of a falling contour tone is shown below in example (58) in the AT.



Some of the tone combinations are shown in the following words (a) and phrases (b) in examples (59) below.

(59) a) Tone combinations in words

|               |              |       |
|---------------|--------------|-------|
| <b>lòkò</b>   | ‘take’       | L L   |
| <b>bàlě</b>   | ‘drop them’  | L H   |
| <b>ēlí</b>    | ‘palm fruit’ | M H   |
| <b>kífú</b>   | ‘fire’       | M H   |
| <b>káná</b>   | ‘so’         | H H   |
| <b>bòmòě</b>  | ‘salt’       | L L M |
| <b>kěkpǎ</b>  | ‘the fish’   | M LH  |
| <b>ōkpūsá</b> | ‘pepper’     | M M H |

|              |                 |       |
|--------------|-----------------|-------|
| <b>ōgégé</b> | ‘cooking stick’ | M H H |
|--------------|-----------------|-------|

|                |         |       |
|----------------|---------|-------|
| <b>sāpráda</b> | ‘onion’ | M H M |
|----------------|---------|-------|

b) Tone combinations in phrases

|             |            |     |
|-------------|------------|-----|
| <b>ō.tò</b> | ‘2SG.cook’ | M L |
|-------------|------------|-----|

|            |            |     |
|------------|------------|-----|
| <b>òpè</b> | ‘2SG.like’ | L L |
|------------|------------|-----|

|             |             |     |
|-------------|-------------|-----|
| <b>òshí</b> | ‘3SG.fetch’ | L H |
|-------------|-------------|-----|

|            |               |     |
|------------|---------------|-----|
| <b>àbá</b> | ‘will become’ | L H |
|------------|---------------|-----|

|             |            |     |
|-------------|------------|-----|
| <b>ō.sè</b> | ‘2SG.want’ | M L |
|-------------|------------|-----|

|              |           |     |
|--------------|-----------|-----|
| <b>nábhà</b> | ‘its top’ | H L |
|--------------|-----------|-----|

|             |            |     |
|-------------|------------|-----|
| <b>ó.gē</b> | ‘2SG.cook’ | H M |
|-------------|------------|-----|

|                 |                   |       |
|-----------------|-------------------|-------|
| <b>yā.bá.zã</b> | ‘3SG.remain.stay’ | M H L |
|-----------------|-------------------|-------|

The above tone combinations are some of the tonal patterns observed in Tùtrùgbù.

### 3.4.3 Functions of Tone

Tones play very important functions in a tone language like Tùtrùgbù. Some of the functions of tone in the language are lexical and grammatical. These functions are discussed below.

### 3.4.3.1 Lexical Functions

Lexically, tones are used to show difference in meaning in words in the language. According to Yip (1989a) in De Lacy (2007:231) a language with tone is one in which an indication of pitch enters into the lexical realization of at least some morphemes. In the examples (60a) below, the difference between the words for ‘left’ and ‘grow’ *shě* is the difference in tone. When it bears the high tone, it means grow as in *shé* ‘grow’ and when it bears a low tone, it means past tense of the verb **go** as in *shè* ‘left’. The following words in (60a and b) are some examples.

- (60)      a)    **shè**            ‘left’  
               b)    **shé**            ‘grow’

Again as explained above, the difference in tone creates difference in meaning of words as shown in the examples below. As shown in example (61) below, the word *shɔ* means either to urinate or to stab depending on the tone it bears. When the high tone is marked, it means to urinate as in *shɔ́* ‘urinate’ and when the low tone is marked, it means to stab as in *shɔ̀* ‘stab’. The words are shown in the examples in (61a and b) below.

- (61)    a)    **shɔ́**            ‘urinate’  
               b)    **shɔ̀**            ‘stab’,                      [Essegbey, 2012:41]

It is not only the high and low tones that are phonemic, the High and Mid tones are also phonemic as illustrated below in example (62a and b) with the following words.

- (62) a) **anó** 'it is black'  
 b) **anō** 'person'. [Essegbey, 2012:41]

It would be observed that, the difference between the meaning of the word *anó* is whether the tone it carries is high or mid. When marked with the high tone, *anó* means 'it is black' whereas the mid tone on the word as in *anō* means a person, so the difference between the word for 'black' and 'person' is whether the word is marked with high tone or mid tone. The words in the example (63) below also show that the occurrence of a low tone or falling tone signals difference in meaning. The low tone on the word *pè* 'like' and the falling tone in *pê* 'intercourse' shows that tone is contrastive among lexical items in Tùtrùgbù.

- (63) a) **pè** 'like'  
           **pê** 'intercourse' [Essegbey, 2012:41]  
 b) **elí** 'palm fruit'  
           **elì** 'mother'  
 c) **kíwí** 'sun'  
           **kìwì** 'day'

Contrast is noted between the high tone and the rising tone as shown in (d) below.

- d) **kihoé** 'cowry'  
           **kihoě** 'the large one'



From the above discussions, it could be summed up that tones in Tùtrùgbù show contrast in lexical items and therefore all the level tones – high, mid and low, and the complex tones – rising and falling are phonemic.

Even though tone is shown to be phonemic in Tùtrùgbù, there are homonyms in which same words bear same tones but have different meanings. The contrast can be seen in context in which the word is used and also with the words such items collocate with. Some of the homonyms identified are shown in the example (64) below.

- (64) a) **kiblui** ‘snail’  
           **kiblui** ‘small’  
       b) **bùí** ‘to break’  
           **bùí** ‘a word’

The difference between the noun *kiblui* ‘snail’ and the adjective *kiblui* ‘small’ is shown in the context of the following utterances. The sentence (65i) shows that the *kiblui* ‘snail’ is possessed by someone known as Mawuse, whereas in the sentence (65ii) the *kènḁbó kiblui nḁ* ‘the small frog’ is shown to be in a location *okoro me* ‘in the canoe’. The utterances are shown in the examples below.

(65) i. **kiblui nḁ alè Mawuse yahḁ**

|               |     |      |        |          |
|---------------|-----|------|--------|----------|
| <b>kiblui</b> | nḁ  | alè  | Mawuse | ya-hḁ    |
| <b>snail</b>  | DET | POSS | Mawuse | 3SG-hand |

‘Mawuse has the snail’

ii. **kènḁbó kiblui nḁ akpase okóró mè**

|          |               |     |        |       |     |
|----------|---------------|-----|--------|-------|-----|
| kènḁbó   | <b>kiblui</b> | nḁ  | akpase | okóró | mè  |
| tortoise | <b>ADJ</b>    | DET | be.LOC | canoe | LOC |

‘The tortoise is in the canoe’ [B.21]

The following sentences also show the difference in meaning of the word *bui* in examples (65b) i and ii below. It would be seen from the utterance in c (i) that *bui* means ‘to break’ whereas in c (ii), *bui* means ‘word’.

b) i. **bùsí télí abùí**

|                     |       |                |
|---------------------|-------|----------------|
| bùsí                | télí  | a-bùí          |
| tree                | INDEF | 3SG-break.PERF |
| ‘A tree has fallen’ |       |                |

ii. **ɔ́díáɔ̀ bùí télí**

|                          |      |       |
|--------------------------|------|-------|
| ɔ́-díáɔ̀                 | bùí  | télí  |
| 2SG-speak.PERF           | word | INDEF |
| ‘You have spoken a word’ |      |       |

### 3.4.3.2 Grammatical Functions

Grammatically, tones are used to express tense and aspect. The following are some examples.

#### 3.4.3.2.1 Tense and Aspect

Tone is used to mark tense and aspect in Tùtrùgbù as the data in example (66) below show. These tense and aspect assigning tones are evidently marked on the vowel prefixes of the verbs. The following sentences show the distinction between the past tense and the habitual aspect. The utterances are shown in the examples (66a-c) below:

(66) a) i. **èbú-ó è-vĩ òkòkó télí** (past tense)

|                                 |                 |       |       |
|---------------------------------|-----------------|-------|-------|
| èbú-ó                           | è-vĩ            | òkòkó | télí  |
| dog-DET                         | 3SG-catch.COMPL | fowl  | INDEF |
| ‘The dog caught a certain fowl’ |                 |       |       |

ii. **èbúó êvũ òkòkó tǎlí** (habitual aspect)

|         |                      |       |       |
|---------|----------------------|-------|-------|
| èbúó    | ê-vũ                 | òkòkó | tǎlí  |
| dog-DET | <b>3SG-catch.HAB</b> | fowl  | INDEF |

‘The dog has been catching a certain fowl’

iii. **bolò-ò á-lè kègbù nǎsí** (present tense)

|          |        |       |      |       |
|----------|--------|-------|------|-------|
| bolò-ò   | á-lè   | kègbù | nǎsí | esí   |
| ball-DET | 3SG-be | chair | DET  | under |

‘The ball is under the chair’ [E.4 TRPS 16]

b) i. **Kofi àṅlòmɛ kekplukpa** (past tense)

|      |                        |           |
|------|------------------------|-----------|
| Kofi | <b>à-ṅlòmɛ</b>         | kekplukpa |
| Kofi | <b>3SG-write.COMPL</b> | book      |

‘Kofi wrote a letter’

ii. **Kofi âṅlòmɛ kekplukpa** (habitual aspect)

|      |                      |           |
|------|----------------------|-----------|
| Kofi | <b>â-ṅlòmɛ</b>       | kekplukpa |
| Kofi | <b>3SG-write.HAB</b> | book      |

‘Kofi has been writing letter’

c) i. **Esi àṅa asě** (past tense)

|     |                      |      |
|-----|----------------------|------|
| Esi | <b>à-ṅa</b>          | asě  |
| Esi | <b>3SG-eat.COMPL</b> | rice |

‘Esi ate rice’

ii. **Esi âṅa asě** (habitual aspect)

|     |                    |      |
|-----|--------------------|------|
| Esi | <b>â-ṅa</b>        | asě  |
| Esi | <b>3SG-eat.HAB</b> | rice |

‘Esi has been eating rice’

From the sentences above, it can be noted that the tones are marked on the resumptive pronouns prefixed to the verbs in each case. The low tone (L) indicates the past tense whereas the falling tone (HL) is used to indicate the habitual tense as shown in bold.

### 3.4.3.2.2 Conditional Clause Marking

Another grammatical function of tone in Tùtrùgbù is to express condition. The ‘if clause’ is covertly marked in Tùtrùgbù using tone. This is demonstrated in the examples below. It could be observed from the examples below that, the change of tone on the first verb in the sequence from Low to High indicates the ‘if clause’ as expressed in the example (67i and ii) below.

#### (67) ò-lòkò-ε tròε-fúo

- |    |                         |          |     |                                   |          |      |
|----|-------------------------|----------|-----|-----------------------------------|----------|------|
| i. | ò-lòkò-ε                | tròε-fúo | ii. | ó-lòkò-ε                          | tròε-fúo | ko   |
|    | 2SG-take-3SG            | put-fire |     | 2SG-take-3SG                      | put-fire | then |
|    | ‘You’ll put it on fire’ |          |     | ‘if you put it on fire, then ...’ |          |      |

The examples in (68) below are the same expressions as in the example (67) above. The difference between the two sets of examples is the word used for put ‘tró’ and ‘tóqó’ (by two speakers who provided the data). The tonal pattern in each case remains the same.

#### (68) òbò lòkò tóqó kifúo

- |    |                           |      |      |       |     |                                   |      |      |       |
|----|---------------------------|------|------|-------|-----|-----------------------------------|------|------|-------|
| i. | ò.bò                      | lòkò | tóqó | kifúo | ii. | óbó                               | lókó | tóqó | kifúo |
|    | 2SG.will take             | put  | fire |       |     | 2SG.will take                     | put  | fire |       |
|    | ‘You will put it on fire’ |      |      |       |     | ‘if you put it on fire ...’ [D.2] |      |      |       |

The example (69) below shows further that the change of tone from Low to High actually encodes condition in Tùtrùgbù. This can be attested in the following examples.

#### (69) abà yábá

- |    |                |      |     |                        |      |        |
|----|----------------|------|-----|------------------------|------|--------|
| i. | abà            | yábá | ii. | ábá                    | yàbà | békě   |
|    | 3SG.will       | boil |     | 3SG.will               | boil | finish |
|    | ‘It will boil’ |      |     | ‘if it has boiled ...’ |      |        |

### 3.4.4 Tone Behaviours

Tone influences many things in languages. In Ewe, for example, Stalke (1971) and Capo (1981) in Dakubu (1988) report that noun prefixes have mid tone when the stem has a sonorant consonant beginning the word while a low tone is retained when the stem begins with a voiceless obstruent. Again in Dakubu (1988), Smith (1968) reports that voiced consonants cause high tone lowering and block high tone spreading in Punjabi. Poser (1981) also cited in Dakubu (1988) indicates that the low tone in Jaben lowers the prefixal high tone and triggers devoicing of the prefixal consonant. A similar phenomenon is identified in Tùtrùgbù also. The examples below illustrate the same word **télí** ‘certain’, bearing different tones as a result of phonological conditioning occasioned by some segments in the utterance. In the examples (70-73) below, the actual utterance is in bold, the second line is the word-for-word gloss, the third line is the meta language and the fourth line is the English translation.

In the examples below, the tone on the indefinite article **télí** ‘certain’ alternates between LL and HH not because of the tone on the preceding vowel, but it is based on the vowels preceding the word **télí**. What is clear here is that, the tone on the word *teli* following the mid-low back vowel /ɔ/ in the example (70) below is LL as well as the example (71) where the word bears LL after the preceding central low vowel /a/. The same word **télí** ‘certain’ in the examples in (72 and 73)

bears the tone HH occurring after the preceding front high vowels /i/ and the back high vowel /u/.

**(70) ābàyókó tètì**

|                            |           |      |
|----------------------------|-----------|------|
| ā.bà                       | yókó      | tètì |
| 3SG.come                   | 3SG.place | some |
| ‘She’ll come to her later’ |           |      |

**(71) sáprádà tètì nê**

|                   |        |     |
|-------------------|--------|-----|
| sáprádà           | tètì   | nê  |
| onion             | Indef. | LOC |
| ‘An onion on ...’ |        |     |

**(72) ādóbūí télí**

|          |        |
|----------|--------|
| ādóbūí   | télí   |
| word     | Indef. |
| ‘A word’ |        |

**(73) yòbìà kukú télí**

|                 |      |        |
|-----------------|------|--------|
| yòbìà           | kukú | télí   |
| friend          | old  | Indef. |
| ‘An old friend’ |      |        |

Another tone behaviour observed in the language is that, a low tone or mid tone can easily be replaced by high tone. That is, when a low tone (L) or a mid-tone (M) on the initial vowel of a word follows a high tone (H) final vowel of a preceding word, two things happen. First, the final vowel of the preceding word gets deleted leaving the high tone (H) floating. Second, the low (L) and mid (M) tones get assimilated to the preceding high tone (H) which hitherto has been left afloat. The output form of the new word then appears with the initial vowel of the following word with the high tone of the deleted vowel on it.

The following examples in (74 i and ii) are some illustrations:

(74) i) **téɔ́lɔ́kɔ́** → **tɔ́lɔ́kɔ́** ‘you’ll take’

té      ɔ́-lɔ́kɔ́

FUT    2SG-take

‘You will take’

ii) **kpé kífú** → **kpífú** ‘set fire’

kpé      kifu

set      fire

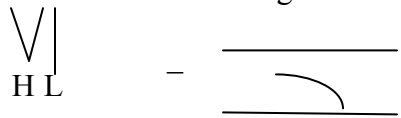
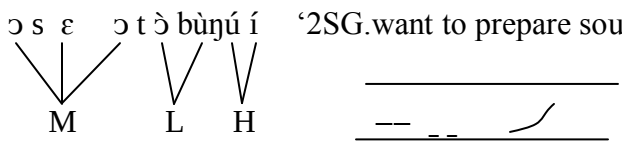
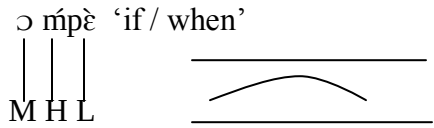
‘Set fire’

It is observable from the examples on (74 i and ii) that the mid tone and the low tone in the respective cases in the underlying form have become high tones in the surface forms as the illustrations have shown. In addition, it would be noted from (74 ii) that there is a consonant deletion that deletes the velar /k/, thus deriving the surface form indicated. These phonological processes can be formally expressed thus;

- 1) delete the V<sub>1</sub> of the first syllable
- 2) attach the onset consonant of the syllable to the initial position of the following word.

### 3.4.5 Gliding Pitches

Gliding pitch (tone) is an instance where the pitch on which tone bearing units are uttered flows into the pitch of the following TBU in an upward or downward manner. (cf. Bota, 2002). Some of the instances of gliding pitch in Tùtrùgbù are exemplified below in examples (75). There are two lines of representation in each of the examples below. The first line is the utterance and the English gloss whereas the second line shows the tonal representations.

- (75) a. yóháè ‘friend or colleague’  

- b) ɔ s ε ɔ t ò bùnú í ‘2SG.want to prepare soup ...’  

- c) ɔ m̀pè ‘if / when’  


The sketches in example (75 a, b and c) above illustrate pitch gliding in Tùtrùgbù.

### 3.4.6 Tone Processes

There are occurrences of tone processes in Tùtrùgbù. Some of the processes identified are automatic down stepping, tone coping, tone polarity, complex tone simplification and tone dumping. These processes are discussed with some examples below.



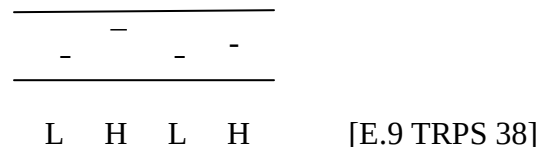
### 3.4.6.1 Down Stepping

In down stepping, a sequence of two high tones is separated by a low tone causing the second high tone to be lower in pitch than the preceding high tone. The intervening low tone spreads to the following high tone and lowers its pitch level creating the situation HLM. (cf. Yip, 1989a) in De Lacy (2007:232). There are two types of down stepping identified in this study namely, automatic down stepping and the non-automatic down stepping. The examples are shown below.

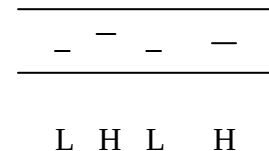
### 3.4.6.2 Automatic Down Stepping

In the automatic down stepping tone process, the change processes are overt. The following are some examples as shown in example (76) below.

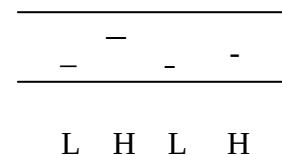
(76 a) kífú nìshú ‘beside the fire’



b) bùṅáṅà nó ‘the food’



c) bùṅáṅà bó ‘food abounds’



From the examples in (76 a - c) above, the up-and-down tonal patterns are obvious and show clear cases of the automatic down stepping of tone in Tùtrùgbù.

It is observable that, the penultimate vowel in each of the above constructions

bears a low tone that intervenes between the high tone on the anti-penultimate vowels and the ultimate vowels. These intervening low tones cause the lowering of the pitch of the affected high tones to mid tone (M). These have resulted in the tone process called down stepping.

### 3.4.7 Tone Copying

Tone copying occurs when a segment that is overtly toneless surfaces with a tone which is the same as the tone of the adjacent TBU. An example from the language is shown in the example (77) below.

(77) a) adàlɛ [adàlɛ̀] ‘he opens it’

|          |         |
|----------|---------|
| a.dà     | lè      |
| 3SG.open | 3SG.OBJ |

$$\text{ad}\bar{a} + l\epsilon \rightarrow [\text{ad}\bar{a}l\bar{\epsilon}] \rightarrow \begin{array}{c} \text{ad}\bar{a}l\bar{\epsilon} \\ \vee \\ l \end{array}$$

It would be noticed that the 3<sup>rd</sup> person object pronoun *le* does not have any overt tone marking in the underlying representation of the utterance whereas in the surface form, the vowel of the 3<sup>rd</sup> person object pronoun *le* bears a low tone same as that of the adjacent vowel in the verb *dà* ‘open’ in the utterance. This is described as tone copying. The tonelessness of the 3<sup>rd</sup> person pronoun *le* ‘it’ is evident in the fact that it appears not to have its own permanent tone. It is shown to be consistently appearing with the tone of the adjacent vowel of the verbs it complements. The following examples show the *le* ‘it/them’ which bears a low

tone in the previous example now bears the high tone of the adjacent vowels of the verbs.

(77b) bá lɛ [bá lé] ‘drop them’

huá lɛ [huá lé]                    ‘grind them’

bua le [bua le]            ‘remove them’

### 3.4.8 Tone Polarity

Tone polarity is a process by which a toneless segment acquires a tone with the opposite value to that of the adjacent TBU. The following are some examples of tone polarity in the language in example (78) below.

(78) a) be + adzẽ → bàdzẽ  
Pl woman women

b)    be                    +            anyé                    →            bànyé  
     Pl                        man                        men

c) e + vũ → évũ  
3SG catch 3SG.catch

From the examples above in (78a-c), the plural morpheme prefixes in (a) and (b) do not carry any tone and so is the 3<sup>rd</sup> person subject pronoun in example (c) but each of them appeared in the surface forms with tones opposite to the adjacent tones in the respective words as shown above. This may be due to the phonological process of deletion of the vowels in the prefixes in (a) and (b). The example in (c) is a natural occurrence because there was no deletion of a vowel in that instance. The evidence is found in the fact that the tone of the segments under

discussion in this section appear consistently with different tones according to the form of the adjacent tone of the other segments in the environment.

### 3.4.9 Low Tone Spreading

Low Tone Spreading (LTS) is a phonological phenomenon in which a low tone spreads to assimilate the high tone or mid tone of an adjacent vowel in a word or an utterance. Tone spreading in the language is generally bidirectional depending on intents of the speaker encoded in the utterance. This phenomenon of low tone spreading is shown in the following words in example (79) below.

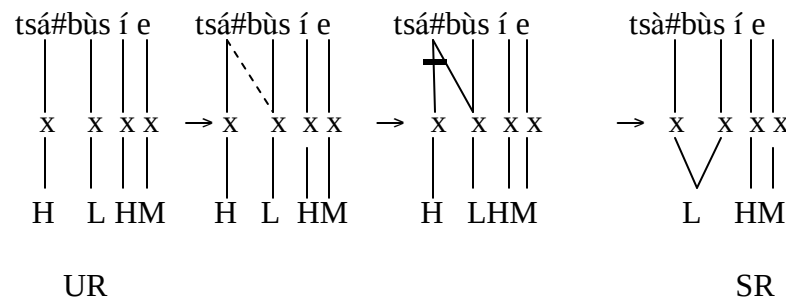
(79 a) i. **tsá** ‘to tie’ + **bùsíe** ‘the trees’ → **[tsàbùsíe]** ‘tie the trees’

ii. **buí** ‘to break’ + **bùsíe** ‘the trees’ → **[buìbùsíe]** ‘break the trees’

iii. **awu** ‘dress’ + **anó** ‘black’ + **kùkú** ‘old’ → awu **[anò kùkú]** ‘old black dress’

It will be observed from the data in example (79a) above that the high tone of the final vowel in the verbs **tsá** ‘to tie’ and **buí** ‘to break’ and also the adjective **anó** ‘black’ has become low tone in the surface forms of the various utterances. This is because the low tone of the vowels in the first syllables of the noun **bùsíe** ‘the trees’ and the adjective **anó** ‘black’ have spread to assimilate the high tones making them low tones. This is shown graphically in the Autosegmental Framework below in example (79b).

b) **tsá** ‘to tie’ + **bùsíe** ‘the trees’ → **[tsàbùsíe]** ‘tie the trees’



From the illustration in (82b) above, it is observable that the low tone of the noun **[bù]sí** ‘trees’ in the noun phrase **bùsíe** ‘the trees’ has spread regressively to absorb the high tone of the verb **tsá** ‘to tie’. This makes the tone combination HLHM to become LLHM.

The next tone process to be discussed in this study is the complex tone simplification.

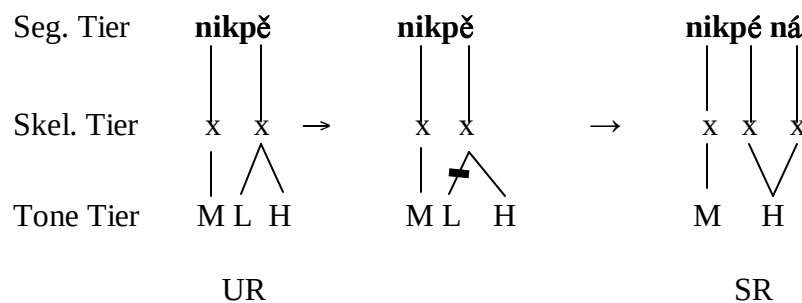
### 3.4.10 Complex Tone Simplification

Complex tone simplification is a process by which complex tones of the pattern LH are simplified or reduced to a high tone H only on the vowel segment. The following are some examples found in Tùtrùgbù to illustrate complex tone simplification in (80).

- (80) a) **nikpě** ‘corn’                      **nikpé ná** ‘corn flour’  
       b) **kedzǎ** ‘meat’                      **òkòkó kedzá** ‘chicken / fowl meat’  
       c) **kihoě** ‘the large one’           **kèvòbó kihoé** ‘large frog’

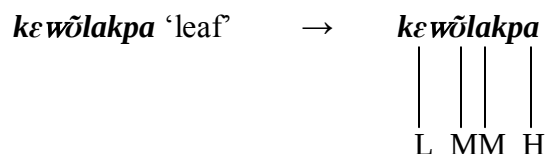
From the examples above, it is shown that the complex tones have been simplified into a high lexical tone as illustrated in the pairs. From the examples (83a-c) above, it is noticeable that are the LH complex tones on the final vowels in **nikpě** ‘corn’, **kɛdzǎ** ‘meat’ and **kihoě** ‘the large one’ have been made a simple high tone by the process of the tone simplification. This complex tone simplification occurs because of the nouns that are attached to them respectively. The complex tone simplification process is illustrated in the Autosegmental Framework as shown below in (80d).

d) **nikpě** ‘corn’ → **nikpé ná** ‘corn flour’

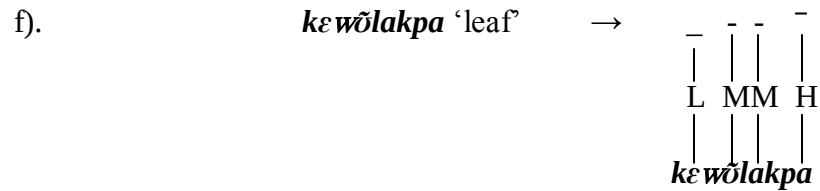


The above illustration shows the process of complex tone simplification. There is an occurrence of tone terracing also in the data. The following examples are some examples from the language as shown below in (80e).

e) **kɛwǒlakpa** ‘leaf’



This can further be shown as terracing in (80f)

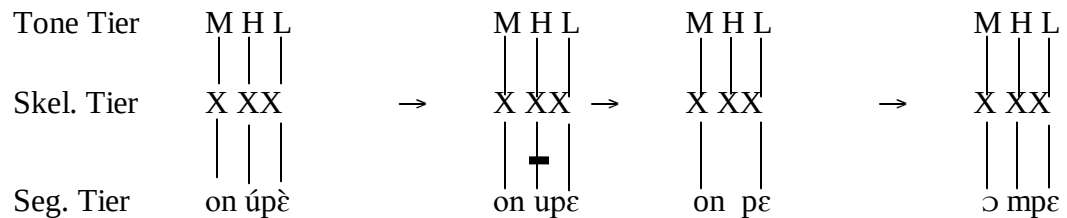


The illustrations in example (80) above seek to show that, beyond the vowel sounds are the tones that co-occur with the vowels. The tones are as autonomous as the vowel segments that contain them. The Autosegmental Framework is able to show as in the above illustrations that the tones co-occur with the vowel segments simultaneously but not at different times. The next discussion is on tone dumping.

### 3.4.11 Tone Dumping

Tone Dumping is where unassociated tones are linked to (dumped on) the nearest vowels. After the word *onúpè* [ɔ́mpè] ‘if’ has gone through the complex phonological processes of deletion of /u/, homorganic assimilation of /n/ to /m/ and [-ATR] vowel harmony that changed /o/ to /ɔ/, it was derived as [ɔ́mpè] ‘if’ from the underlying form *onúpè* ‘if / when’. It could be seen that the high tone (H) borne by the vowel segment /ú/ continues to float after the deletion of the TBU /u/. As a result of the above dumping principle, the floating high tone (H) then dumps itself on the following segment /m/ as shown below in example (81).

(81) **onúpè → ɔmpè** ‘if /when’



As it was indicated earlier, the high tone (H) which was borne by the vowel segment /u/ at the input level has now been dumped on the following /m/ as shown in the output form in the diagram above.

### 3.5.0 Conclusion

In this chapter, the consonant and vowel sounds of Tùtrùgbù were presented and discussed. It was shown that Tùtrùgbù has nine (9) vowels. The basic syllable types identified in the discussions are V, VC, CV, CVC / CVN, CVV and CCVV. The V syllable type was identified as noun class markers and pronominals. All vowels except /ɪ/, /ʊ/ and /u/ function as noun class prefix vowels. The V<sub>2</sub> in the CVV syllable type of some words expresses mood among other things.

Tone has been shown to be very important in Tùtrùgbù because it performs both lexical and grammatical functions in the language. Three level tones and two complex tones were identified in the language. The language exhibits some tonal changes and processes such as gliding pitch, low tone



spreading, complex tone simplification, down stepping and tone dumping. The TBU in the language is the syllable.

## CHAPTER FOUR

### ATR HARMONY, LOANWORD PHONOLOGY AND OTHER PHONOLOGICAL PROCESSES

#### 4.1 Introduction

This chapter presents an analysis of data collected on ATR vowel harmony, loan word phonology and some other phonological processes like rhotacization and retroflexion, deletion, labialization and glide formation. Section 1 discusses ATR vowel harmony including the noun class markers in the language. Section 2 focuses on the phonology of loanwords in Tùtrùgbù and strategies for accommodating such words into the phonology of the language. Section 3 discusses other phonological processes identified in the language but which are not part of the major thematic areas. Section 4 is the summary of the chapter.

##### 4.1.1 ATR Vowel Harmony

ATR vowel harmony is a phonological phenomenon in which vowels distribute in words according to the ATR values of the vowels involved. The classification of vowel segments into definable groups is done according to tongue root posture. The vowels in Tùtrùgbù occur in two harmonic sets. These are [+ATR] vowels which are /i, e, o, u/ and [-ATR] vowels which are /ɪ, ɛ, ʊ, ɔ/. The central low vowel /a/ occurs in both sets of the vowels even though it is underlyingly [-ATR].

In the examples follow, the [+ATR] front high vowel /i/ becomes the [-ATR] front high vowel /ɪ/ in order to harmonize with the final vowels of the words involved. The following are the examples as shown in (1) below.

- (1) a)      **tsi** ‘push’ + **lɛ** ‘it’                      →      **tsɪlɛ** ‘push it’
- adi** ‘poison’ + **nɔ** ‘the’                      →      **adɪnɔ** ‘the poison’
- agi** ‘NEG marker’ + **pɛ** ‘like’ →      **agɪpɛ** ‘dislike’

As shown in the example (1b) above, the /i/ of the first part of the words has become /ɪ/ in order to harmonize with the vowels of the second parts of the words respectively. In the following examples in (1c) also, the /i/ again becomes /ɪ/ for harmony to occur in the respective words. The [ki] is the class marker for the singular nouns in noun class 5, 9 and 13. The /i/ becomes /ɪ/ when the other vowels in the noun stem are [-ATR]. This is demonstrated below.

- |    | [+ATR]                |  | [-ATR]                  |
|----|-----------------------|--|-------------------------|
| b) | <b>ki-gbu</b> ‘stool’ |  | <b>ki-ɣbuhwa</b> ‘comb’ |
|    | <b>ki-mui</b> ‘lake’  |  | <b>ki-mu</b> ‘breast’   |
|    | <b>ki-fu</b> ‘fire’   |  | <b>ki-fɔ</b> ‘ten’      |

From the examples in (1c) above, it is evident that the /i/ in the noun class marker [ki] becomes /ɪ/ if the vowel in the nouns it marks are selected from the [−ATR] set of vowels. This form of spread is referred to as Regressive Harmony Spread. Further examples are shown in (d) below thus;

d) i.    **#wɔ + shupi#** → **[wishupi]** ‘your skin’

ii.    **#avɛ + kepi#** → **[ave kepi]** ‘he goes home’

As shown in the (d i-ii) above, the vowel /ɔ/ of the pronominal **wɔ** ‘your’ and the /ɛ/ in the verb **vɛ** ‘go’ have been regressively harmonized by the [+ATR] vowels in the nouns that follow in the respective cases in order for [+ATR] harmony to take place. This is supported by Dorvlo (2004:242) which notes that, in Logba also, “in any word of two or more syllables, only the vowels of one set may occur”.

#### 4.1.2 Words with [+ATR] vowels

The following are words containing the [+ATR] vowels as shown in the example (2) below.

- (2)    i.        **oli**            ‘neck’
- ii.        **kifu**            ‘fire’
- iii.        **tenukpo**        ‘one’

- iv.      **keli**            ‘river’  
v.        **kibluxe**        ‘ladle’

From the examples above it is obvious that the vowel segments in the words are all drawn from the same [+ATR] set of vowels in a harmonizing manner. In the example (2i) though there is harmony of the vowels produced with the advanced tongue root, the vowels come from a cross height category. In the (ii), both vowels are drawn from the same [+ATR] set and they also agree in height since both /i/ and /u/ are high vowels. The example (iii) also shows cross height harmony of the advanced vowels. Again, though the /e/ and /o/ agree in terms of being mid-high vowels, the intervening /u/ is a high vowel. Again in the same example (iii), /o/ and /u/ are harmonized in terms of backness and rounding. In the example (iv), though /ĩ/ and /e/ come from cross heights, they harmonize in terms of frontness. In the example (v) also, we see the high vowels /i/ and /u/ on one hand, and the mid-high vowels /o/ and /e/ on the other hand agreeing in height. From the examples (i-v) above, it is worth noting that vowels in words in Tùtrùgbù can be drawn exclusively from one harmonizing set of [ATR] vowels. There are words which are also exclusively drawn from the [-ATR] harmonizing set of vowels as well.

### 4.1.3 Words with [-ATR] vowels

The following words in the example (3) below are words in which only [-ATR] vowels occur. These include,

- |     |      |                |             |
|-----|------|----------------|-------------|
| (3) | i.   | <b>bko</b>     | ‘take’      |
|     | ii.  | <b>bomɔɛ</b>   | ‘salt’      |
|     | iii. | <b>kimo</b>    | ‘breast’    |
|     | iv.  | <b>kɛvɔbɔ</b>  | ‘frog’      |
|     | v.   | <b>kɛɛsɔpɛ</b> | ‘so’        |
|     | vi.  | <b>gɔgɔɛ</b>   | ‘remainder’ |

All the words in the example (3i-vi) above show [-ATR] vowel harmony because all the vowel segments are produced with the tongue in retracted state. They all show agreement in height except in (iii) and (v) which have cross height values. The central low vowel /a/ also occurs with vowels from both the [+ATR] and the [-ATR] sets of harmonizing vowels. This data is presented to show that even though the language has definable exclusive sets of [+ATR] and [-ATR] vowels, there are many words in this language which contain mixed vowels. These occurrences of /a/ with vowels from the [+ATR] and [-ATR] vowel sets is shown in the examples (4i-vi) below.

#### 4.1.4 Words with [+ATR] and [-ATR] mixed vowels

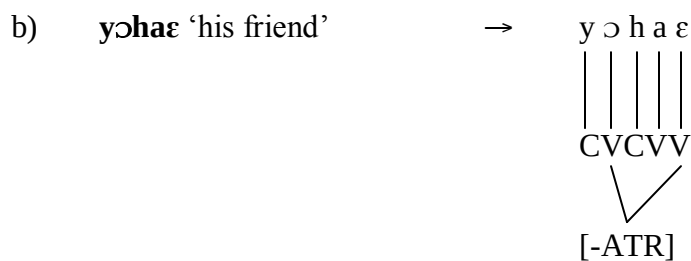
- |     |      |                              |                  |
|-----|------|------------------------------|------------------|
| (4) | i.   | <b>epidzanyɛ</b> [epidzanye] | ‘male goat’      |
|     | ii.  | <b>abitɛɛ</b>                | ‘become’         |
|     | iii. | ɔ. <b>bʊ.alɛ</b>             | ‘2SG.remove.3PL’ |
|     | iv.  | ɔ. <b>hʊ.alɛ</b>             | ‘2SG.grind.3PL’  |
|     | v.   | <b>aba.qiaɖɔ</b>             | ‘will talk’      |
|     | vi.  | <b>gaze.nɔ</b>               | ‘the pot’        |

In the following words, the central low vowel /a/ occurs with the unadvanced tongue root vowels as shown in examples (5i-vii). These examples in which the central low vowel /a/ occurs in words with [-ATR] set of vowels are intended to establish the [-ATR] value of the vowel /a/ in Tùtrùgbù. In many [ATR] vowel harmony languages, the /a/ is shown to be a neutral vowel in that, it co-occurs freely with vowels from either set of the [±ATR] divide. In other [ATR] vowel harmony languages, the /a/ is seen as a [-ATR] vowel. In Gua for instance, Obiri Yeboah (2013) notes that the /a/ has an allophone /æ/ occurring exclusively before [+ATR] vowels /u/ and /i/ while the /a/ occurs exclusively with the [-ATR] vowels. Hudu (2013:59) also notes that in Dagbani, the low vowel /a/ undergoes harmony as a root vowel but it is opaque to harmony as a suffix or clitic. The data

from Tùtrùgbù as presented however do not point to that exclusive distribution of /a/. The following are the examples.

- (5) a. i. **kɛklagbu** ‘stone’  
 ii. **yɔhaɛ** ‘his friend’  
 iii. **kɔyano** ‘father-in-law’  
 iv. **kɛfiwãno** ‘the bone’

The example (5b) below demonstrates the [-ATR] vowel harmony in the AT framework.



The central low vowel /a/ appears in the middle of the words in the examples above. This is pointing to the fact that the central low vowel is transparent to vowel harmony. Casali (2002) explains that if a neutral vowel is transparent, vowels on either side of the neutral vowel will consistently harmonize as if the neutral vowel was not there.

The next set of data shows the occurrence of the central low vowel /a/ with the advanced tongue vowels.



#### 4.1.5 /a/ in words with [+ATR] vowels

The central low vowel /a/ co-occurs in words with [+ATR] set of vowels also as shown below in example (6i-iii).

- (6) i. **yenyina** 'suitor'  
 ii. **kanyiaka** 'everyone'  
 iii. **piapii** 'firm'

The data presented in the example (6i-iii) above show that the central low vowel /a/ co-occurs with [+ATR] vowels as well. In addition to the above, vowel harmony occurs at sentence level in Tùtrùgbù as discussed in the following section.

#### 4.1.6 Harmony at Phrase and Sentence Levels

The following examples in (7i-iii) show ATR vowel harmony at phrase and sentence level.

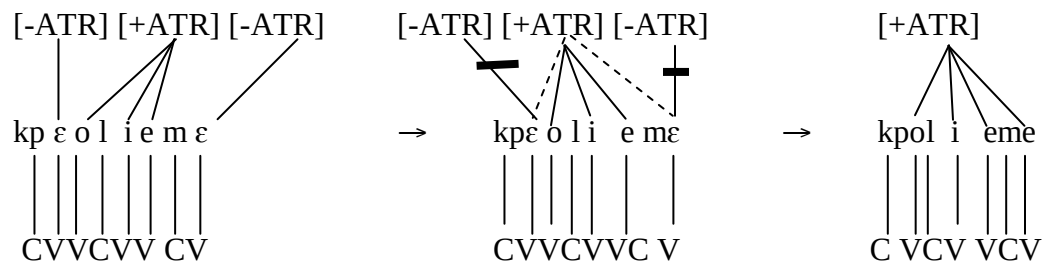
- (7) a. i. **#kpé + olíe + mɛ#** → **kpolíemɛ** [kpolífeme] 'put into the soup'  
 ii. **#té + òlókò#** → **[tólókò]** 'you'll take'  
 iii. **#nɔ́ + ábhà#** → **[nábhà]** 'its top'

In the examples (7 a i) the initial [-ATR] vowel was deleted making way for the [+ATR] vowels. In example (ii), the front vowel /ɛ/ was deleted leaving the back

vowel /ɔ/ to maintain the harmony. In the example (iii), the initial [-ATR] vowel get deleted leaving the central low vowel /a/.

Example (7b) shows harmony at sentence level

b) kpɛ olíe mɛ → kpolíemɛ [kpolíeme] ‘put into the soup’



From the Autosegmental representation above, it would be noted that there are some [-ATR] vowels like /ɛ/ in the first syllable [kpɛ] and again in the final syllable [mɛ]. There are [+ATR] vowels like /o/ in the second syllable, /i/ in the third syllable [li] and /e/ in the fourth syllable. During the process of harmonization, the [+ATR] features of /o/ has spread to harmonize the [-ATR] /ɛ/ to the [+ATR] /e/ to have [kpe]. A deletion rule in Tùtrùgbù which deletes a  $V_1$  when two vowels occur in sequence of VV as a result of compounding two words, has applied and instead of having [kpeoliemɛ] we rather have [kpolíemɛ]. The [+ATR] features of /e/ also spread to assimilate the final vowel /ɛ/ of [mɛ] to make it [me] as shown in the surface form. These phonological processes have rendered the phrase *kpɛ olíe mɛ* as [kpolíeme]. The phrase is glossed below in example (7c).

- (7) c. **kpɛ olie mɛ → [kpolieme]**
- |                     |          |     |
|---------------------|----------|-----|
| kpɛ                 | oli-e    | me  |
| put                 | soup-DET | LOC |
| ‘put into the soup’ |          |     |

#### 4.1.7 Harmonizing Affixes

Another area where vowel harmony is expressed is in the relationship between the vowels in the noun class marker prefixes and those in the root of the words. This is because there is an active interface between phonology and morphology in the language. The aspect of Tùtrùgbù morphology that interfaces with its phonology as discussed in this section is the noun class system, one property that attracted the attention of linguists to the GTM languages. The active noun class systems suggest that there is a link between the GTM languages and Bantu languages (Dakubu and Ford, 1988). A noun class system is a grammatical system that some languages use to overtly categorize nouns according to gender, animacy, shape and others (Dixon, 1968:105). According to Schuh (1995:128) also, the term noun class has been used in at least two senses in African languages. In one sense, it refers to ‘a single set of morphological concords’. In another sense, it refers to ‘a paired set of morphological concords’ where members of the pair refer to singular and the other member is its plural equivalent. The second sense applies in Tùtrùgbù. Tùtrùgbù noun class markers are prefixes in which vowel segments tend to trigger [ATR] vowel harmony. So this discussion on the noun class system of the language is to show how it influences [ATR] vowel harmony.

The noun class prefixes are summarized in the example (8) below.

(8) a) Summary of noun class markers

| Noun class | Noun prefix                                       | Examples                | Meaning                     |
|------------|---------------------------------------------------|-------------------------|-----------------------------|
| 1          | <b>a-</b><br><b>e-</b>                            | ayade<br>ebu            | farmer<br>dog               |
| 2          | <b>ba-</b><br><b>be-</b>                          | bayade<br>bebu          | farmers<br>dogs             |
| 3          | <b>o-</b><br><b>ɔ-</b>                            | opupu<br>ɔkɔkɔ          | door<br>fowl                |
| 4          | <b>i-</b><br><b>ɛ-</b>                            | ipupu<br>ɛkɔkɔ          | doors<br>fowls              |
| 5          | <b>ki-</b>                                        | kizi<br>kine            | peanut<br>tooth             |
| 6          | <b>a<sup>2</sup>-</b><br><b>e<sup>2</sup>-</b>    | azĩ<br>ene              | peanuts<br>teeth            |
| 7          | <b>kɛ-</b><br><b>kɛ-</b><br><b>ka-</b>            | kɛpɔtɛ<br>kɛwɛ<br>kaɲui | cloth<br>finger<br>broom    |
| 8          | <b>a<sup>3</sup>-</b><br><b>bɔ-</b><br><b>bu-</b> | apɔtɛ<br>bɔwɛ<br>buɲui  | cloths<br>fingers<br>brooms |
| 9          | <b>ki-</b>                                        | kigbu                   | stool                       |
| 10         | <b>gbu-</b>                                       | gbugbu                  | stools                      |
| 11         | <b>o-</b>                                         | osi                     | tree                        |
| 12         | <b>bu-</b>                                        | busi                    | trees                       |
| 13         | <b>ki-</b>                                        | kidzĩ                   | ovary                       |
| 14         | <b>∅-</b>                                         | kidzĩ                   | ovaries                     |

The table above summarizes the Tùtrùgbù noun class system. It would be observed from the summary that a singular class marker in one class may be a plural class marker in another class. For instance, [e] and [a] are class 1 singular class markers. The [e] and [a] again are found in class 6 as plural class markers with the same tone. Another example is [ki] which is a singular class marker in classes 5, 9 and 13 also without any change in tone except the [ki-] of class 9 which carries a mid-tone. From the data, the class 14 has null plural marker. In other words, the singular forms of words in class 13 do not have any overt plural marking.

The noun class markers are therefore summed up as follows:

| (8b) | CLASS       | SINGULAR          | CLASS       | PLURAL           |
|------|-------------|-------------------|-------------|------------------|
|      | <b>I</b>    | à-<br>è-          | <b>II</b>   | bà-<br>bè-       |
|      | <b>III</b>  | ò-<br>ò-          | <b>IV</b>   | ì-<br>è-         |
|      | <b>V</b>    | kì-<br>kì-        | <b>VI</b>   | à-<br>è-         |
|      | <b>VII</b>  | kè-<br>kè-<br>ká- | <b>VIII</b> | à-<br>bò-<br>bù- |
|      | <b>IX</b>   | kī-               | <b>X</b>    | gbū-             |
|      | <b>XI</b>   | ò-                | <b>XII</b>  | bù-              |
|      | <b>XIII</b> | kì-               | <b>XIV</b>  | ø                |

The class markers in Tùtrùgbù as shown in example (8b) above are affixes that are prefixed to the noun stems. They have two forms namely the V type and the CV type. The V types are vowel prefixes that mark both singular and plural nouns respectively. Some of the V type class markers are shown in the example (9) below.

(9) a. **V type Singular Class markers**

- i. This is a class of animate, [+human] nouns. The singular class marker for this class is [a-]. Its plural class marker is [ba-].

**a-dzě** ‘woman’

**a-nyě** ‘man’

**a-nɔ** ‘person’

- ii. This group comprises the class 1 [e-] and class 3 [o-]. It is a class of animate, [-human] nouns. The plural marker for this class is [be/i] as shown in the summary above.

**e-bu** ‘dog’

**e-pidza** ‘goat’

**e-blidza** ‘snake’

**o-bushi** ‘sheep’

**b) V type Plural class markers**

- i. The class 4 is a class of [-animate] concrete nouns. The singular marker for this class is [o/ɔ]

**i**-pupu ‘doors’

**i**-tu ‘guns’

**ɛ**-gã ‘bells’

- ii. The class 6 is a class of [+animate] body part nouns. The marker for this class is [a-]. Its singular marker is [ka-].

**a**-hɔɛta ‘elbows’

**a**-hɔkpɔ ‘wrists’

**a**-hɔɛm ‘palms’

As noted above, the noun class markers are also realized as CV. It is a syllable made of a consonant and a vowel. The CV type class markers also show both singular and plural forms of the nouns. The CV type class markers are shown in example (10) below.

**(10) a. CV type singular noun class markers**

- i. This is a class of concrete nouns and singular nouns in this class are marked with [kɛ-]. The plural marker for this class is [a].

**kɛ**-kpã ‘fish’

**kɛ-pɔtɛ**      ‘cloth’

**kɛ-wɔ̃lakpa**      ‘leaf’

**kɛ-klagbu**      ‘stone’

- ii. The second type of singular class marker in this group is [ka-].  
This is a class of [+animate] body part nouns. The plural marker for this class is [a]. The examples are shown below.

**ka-hɔɛm**      ‘palm’

**ka-hɔɛ**      ‘arm’

**ka-tɔ̃**      ‘ear’

#### b) CV type plural noun class markers

- i. This is a class of animate, [+human] nouns. The singular marker for this noun class is [a].

**be-adzẽ** [badzẽ]      ‘women’

**be-anyẽ** [banyẽ]      ‘men’

**be-anɔ** [banɔ]      ‘people’

- ii. This is a class of [-animate], concrete nouns. The singular marker for this noun class is [ka/ki/bu].

**bu-ɲui**      ‘brooms’

**bu-ɲaɲa**      ‘foods’



**bu-lĩ**            ‘water’

**bu-si**            ‘trees’

Tùtrùgbù speakers demonstrate a form of concord in sentence construction. The nouns in the following noun phrases show that all nouns agree in class marking with the adjectives that modify them. The verbs in sentences (b) and (c) also bear same prefixes like the nouns and their modifiers. Demuth (2000) describes a similar phenomenon of the class marking system in Bantu languages where all the nouns and their adjectives must take the same class markers in a sentence. The following are some constructions in example (11).

(11) a. **ke-vɔbɔ** tse **ki-bluiblui-nɔ** ne **ki-hohoe** ...

|                |      |                       |      |                 |
|----------------|------|-----------------------|------|-----------------|
| <b>ke-vɔbɔ</b> | tse  | <b>ki-bluiblui-nɔ</b> | ne   | <b>ki-hohoe</b> |
| CM-frog        | also | CM-little-DET         | CONN | CM-large        |

‘The small and the big frog also ...’ [B.11]

b) **kasalã** **kèféké** **ke-vɔbɔ-ɔ** ...

|               |                |                  |
|---------------|----------------|------------------|
| <b>kasalã</b> | <b>kèféké</b>  | <b>ke-vɔbɔ-ɔ</b> |
| CM.tortoise   | CM.carry.COMPL | CM-frog-DET      |

‘Tortoise carried the frog’ [B.21]

c) **kasalãa** tse **ke-lititi** **kányáná** ...

|                 |      |                  |                |
|-----------------|------|------------------|----------------|
| <b>kasalã-a</b> | tse  | <b>ke-lititi</b> | <b>kányáná</b> |
| CM.tortoise-DET | also | CM-stand         | CM.hold ...    |

‘The tortoise also stands holding ...’

The class markers used above show much agreement in the three examples from Tùtrùgbù in examples (11a-c) above. It is worth noting that, the [kɛ-] and [ki-] used in each case are singular class markers in classes 5 and 7 respectively. It is also observed that the [ka-], [ke-] and [kɛ-] are singular class 7 markers indicating agreement in number.

The noun class marking in Tùtrùgbù highly influences the [ATR] harmony features of the vowels segments in the root of words. Essegbey (2012) indicates that most of the TMA affixes he discussed in his paper are influenced by root and pronominal prefixes. As observed so far, an advanced vowel in the class marker will select another advanced vowel in the root of the word in order to harmonize. In the same way, an unadvanced vowel in the class marker will also select another unadvanced vowel to harmonize within the root. The example is shown in the example (11d) below.

d) *a-ba-bá* ‘he will come’ → *ɔ-bɔ-bá* ‘you will come’

[Essegbey, 2012:2]

Other harmonic features observed include height, frontness, roundness and cross height. There are however some exceptions in which both [+ATR] and [−ATR] vowels may be found in the same word as demonstrated in §4.1.3 above. The following are some examples of words in which the [ATR] values of vowels segments in the noun class prefix markers determine the selection of vowels in the root of the adjective *ténúkpó* ‘one’. This points to the prefix controlled harmony.

- (12) i) **e-pidza**      **ténúkpó**      ‘one goat’  
                  **e-bú**      **ténúkpó**      ‘one dog’

In (12i) above, the prefix vowel /e/ of the nouns are of the [+ATR] vowel set same as those vowels in the numeral **ténúkpó** ‘one’ so there is no change in the structure of the word but there is rounding harmony in the example (ii) below. The initial class marker vowel /o/ of the noun has assimilated the /e/ of the numeral **ténúkpó** ‘one’ to render the word **tónúkpó** ‘one’ in order to harmonize the noun and the numeral. This harmonic feature may be described as backness and rounding harmony as shown in the examples (ii) below.

- ii)      **o-lí**      **tónúkpó**      ‘one neck’  
                  **o-tu**      **tónúkpó**      ‘one gun’

In the following examples in (iii) also, there is a front high harmony in the first and second syllables of the word **ténúkpó** ‘one’ as a result of the initial vowel /i/ of the class marker [ki-]. The /i/ in the class markers has selected the front high vowel /i/ for the word **ténúkpó** ‘one’ as explained above to render it **tíníkpó** ‘one’ as shown in the words in the construction in (iii) below.

- iii)      **ki-dzi**      **tíníkpó**      ‘one heart’  
                  **ki-zĩ**      **tíníkpó**      ‘one pea nut’

The word for the numeral one in Tùtrùgbù, as explained above, is *ténúkpó* but as noticed from the examples in (12 i-iii) above, the word *ténúkpó* ‘one’ is realized variously as *tónúkpó* ‘one’ in (12 ii) and as *tínúkpó* ‘one’ in (12 iii). The various realizations of the word are as a result of the vowels in the class marker prefixes of the nouns being modified by the numeral. The following examples in (13) below also show the same phenomenon of harmony between the initial vowels of the class marker and the initial vowel of the words following them.

- (13) i) *ɛgã* *tɛbha* ‘two bells’  
 ii) *bɔwɛ* *tɔbha* ‘two fingers’

It should be noted that the word for two in Tùtrùgbù is *tabha* but in the examples in (13) above, it is pronounced [*tɛbha*] and [*tɔbha*] respectively because of the /ɛ/ in *ɛgã* ‘bell’ and the /ɔ/ in *bɔwɛ* ‘fingers’. This heavy influence of the noun class prefixes is phenomenal in Tùtrùgbù.

Again in Tùtrùgbù, number is marked with the noun class prefixes on the root of the words as shown in the following examples. The vowels in the class marker prefixes harmonize with the vowels in the root of the words in each of the examples cited below. It is observable from the data that there is [+ATR] vowel harmony in examples (i-vi), in both singular and plural forms of the words at cross height. There is also a harmony of [-ATR] vowels in the words in examples

(vii-x). Some of the [-ATR] vowels also occur in harmony at cross height. Such examples include those in (viii) and (ix).

|      |       |                    |                   |                |
|------|-------|--------------------|-------------------|----------------|
| (14) |       | Singular           | Plural            | Gloss          |
|      | i.    | <b>e-pidza</b>     | <b>be-pidza</b>   | <b>goats</b>   |
|      | ii.   | <b>e-blidza</b>    | <b>be-blidza</b>  | <b>snakes</b>  |
|      | iii.  | <b>o-li</b>        | <b>i-li</b>       | <b>necks</b>   |
|      | iv.   | <b>o-si</b>        | <b>i-si</b>       | <b>trees</b>   |
|      | v.    | <b>o-tu</b>        | <b>i-tu</b>       | <b>guns</b>    |
|      | vi.   | <b>o-bushi</b>     | <b>i-bushi</b>    | <b>sheep</b>   |
|      | vii.  | <b>ɔ-tsɛdɛ</b>     | <b>ɛ-tsɛdɛ</b>    | <b>legs</b>    |
|      | viii. | <b>kɛ-wɔ̃lakpa</b> | <b>a-wɔ̃lakpa</b> | <b>leaves</b>  |
|      | ix.   | <b>kɛ-klagbu</b>   | <b>a-klagbu</b>   | <b>stones</b>  |
|      | x.    | <b>kɛ-we</b>       | <b>bɔ-we</b>      | <b>fingers</b> |

In example (viii) - *kɛwɔ̃lakpa* ‘leaf’, there is a [-ATR] harmony of /ɛ/ and /ɔ̃/ at cross height because /ɛ/ is front mid-low half open whereas /ɔ̃/ is back high round.

The example (ix) - *kɛklagbu* ‘stone’ also shows the same form of [-ATR] vowel harmony at cross height as explained above for the example (viii).

#### 4.1.8 Harmonizing Article

Another instance of vowel harmony in the language is the phenomenon in which the definite determiner which is suffixed to the word harmonizes with the final vowel of the root. The following are some examples in (15).

- (15)
- i. **Batrugbu-ɔ** ‘the Batrugbu’,
  - ii. **busi-e** ‘the tree’
  - iii. **keɔtɛ-ɛ** ‘the cloth’.
  - iv. **kekpa-a** ‘the fish’
  - v. **santɪbrɔ-ɔ** ‘the ginger’
  - vi. **olɪ-e** ‘the soup’
  - vii. **eli-e** ‘the palm fruits’

From the above data, there are clear instances of a harmony of backness and rounding in (i) though the word has both [+ATR] and [-ATR] vowels. There is frontness harmony of vowels in (ii, vi and vii) on one hand and [+ATR] harmony on the other hand. Also, there is a harmony of the mid-low [-ATR] vowels in (iii).

It is obvious from the above examples that the ATR harmony in Tùtrùgbù is both prefix controlled as shown in the examples (12i - 14) and root controlled as shown in example (15) above.

It could be summed up that, vowel harmony in Tùtrùgbù is prefix controlled when the words in which vowels harmonize have noun class markers. Also, the ATR vowel harmony is root controlled when the vowel harmony is triggered from the root of the word.

#### 4.2.0 Loanwords Phonology

Loanword phonology is another phonological phenomenon that displays a lot of phonological process identified in Tùtrùgbù. Thomason (2000) notes that, the phenomenon of loanword arises as a result of languages in contact. Borrowing of lexical items and structures into African languages results from contact between European and African languages on one hand and also between the indigenous African languages on the other hand.

Thomason (2000) further proposed that in identifying loanwords, it must be established that there was contact intimate enough to permit contact-induced structural change. Also, enough evidence should be produced to show that several independent shared features in language X and language Y, ideally, features in different grammatical subsystems. Again, evidence must show that the shared features were not present in pre-X but were present in pre-Y.

All the four conditions proposed by Thomason (2000) apply well in Tùtrùgbù because there is intimate interaction between Ewe, the regional lingua franca, English, language of Education, Akan, sub-regional dialect and language for trade. This relationship between the languages in the area has lasted for over 200 years of existence. (cf. UNDP report, 2012). Borrowing therefore is obvious and a common phenomenon. Asilevi (1990) indicates that the reason why people mix codes [borrowing] is for syntactic convergence, lexical gap filling, and lack of appropriate register and economy of word. He concludes further that there are psychological factors such as lack of attention to one's speech, and social factors

such as subject matter, prestige, social identity among others are things that influence borrowing. Once people are exposed to other majority languages, borrowing is the resultant language behaviour.

#### **4.2.1 Sources of Loanwords**

The major sources of borrowing loanwords as explained above include Ewe, Akan and English. Other minor sources of loanwords in Tùtrùgbù are Ga and Hausa (cf. Dakubu and Ford, 1988). Dakubu and Ford (1988) affirms that the “three languages – Ewe, Akan and English effectively fulfills the functions of a language of wider communication”. These media of communication have provided the opportunity for borrowing. Some of the contact situations include trade, education, religion, the mass media, migration, industrialization and community interactions such as greetings, festivals, worship and communal labour.

#### **4.2.2 Some Identifiable Loanwords**

Nouns loaned into the language exhibit various phonological patterns as shown below. The loanwords from Ewe show tonal changes as in examples (16) below. It is evident that the tone in the first syllable of the words in the source language has changed from a high tone to a low tone in the target language.



| (16) | Ewe    |   | Tùtrùgbù | Meaning   |
|------|--------|---|----------|-----------|
| i.   | mókēkē | → | mòkēkē   | ‘holiday’ |
| ii.  | kpóxa  | → | kpòxa    | ‘toilet’  |
| iii. | nyónu  | → | nyònu    | ‘woman’   |

Some animate nouns with vowel prefixes are borrowed into the language. These nouns are prefixed with CV syllables. The V of the CV is either /ε/, /i/ or /a/.

These are attested in (17) below.

(17) CV- Prefixed Loanwords

|      | Ewe    |   | Tùtrùgbù            |
|------|--------|---|---------------------|
| i.   | akpa   | → | kε-kpa ‘fish’       |
| ii.  | ale    | → | ki-le ‘lizard’      |
| iii. | ahlɔ̃ε | → | ka-hlɔ̃ε ‘antelope’ |

The items in the (18) below are [-human] objects and body part nouns. When nouns in this category are borrowed into Tùtrùgbù a low tone vowel is prefixed to them. These are low tone back vowels. This is exemplified in (18) below.

## (18) V- Prefixed Loanwords

|      | <b>Ewe</b> |   | <b>Tùtrùgbù</b>    |
|------|------------|---|--------------------|
| i.   | <b>tu</b>  | → | <b>ò-tu</b> ‘gun’  |
| ii.  | <b>ga</b>  | → | <b>ḍ-ga</b> ‘bell’ |
| iii. | <b>glã</b> | → | <b>ḍ-glã</b> ‘jaw’ |

The words loaned from Akan also exhibit a change in the form of the vowels as shown in (19). The change is an (a/o → ɔ) alternation in the V- prefixes of the words as observed below. In (19i), the initial vowel /a/ changes to /ɔ/ and the mid vowel /o/ also becomes /ɔ/ in the loanword. In (ii), the initial back vowel /o/ changes to the back /ɔ/.

|      |                    |   |                        |
|------|--------------------|---|------------------------|
| (19) | <b>Akan</b>        |   | <b>Tùtrùgbù</b>        |
| i.   | <b>akokɔ</b>       | → | <b>ɔkɔkɔ</b> ‘fowl’    |
| ii.  | <b>oman [omaŋ]</b> | → | <b>ɔma</b> ‘community’ |

A handful of loanwords from English are also found in the language. The words from English have closed syllable patterns so there is a phenomenon of vowel insertion. The vowels which are inserted to open the closed syllables of the English words are /i/, /ɪ/, /ʊ/ and /u/. These loanwords from English are presented and discussed in (20) below.

(20) a) /i, ɪ/

- |      |                         |   |                          |
|------|-------------------------|---|--------------------------|
| i.   | <b>bucket</b>           | → | <b>bokiti</b> ‘bucket’   |
| ii.  | <b>matches</b>          | → | <b>madzesi</b> ‘matches’ |
| iii. | <b>police</b> [pə'li:s] | → | <b>polisi</b> ‘police’   |
| iv.  | <b>queen</b>            | → | <b>kuini</b> ‘queen’     |
| v.   | <b>tʃɔ:k</b>            | → | <b>tsɔki</b> ‘chalk’     |

The occurrence /i/ and /u/ in **ʃipu** ‘ship’ in (20 b (i)) below demonstrates the harmony of the high [+ATR] vowels whereas the /ʊ/ and /ɔ/ in the (20 b (ii and iii)) are examples of a rounding harmony of the back [-ATR] vowels.

b) /u, ʊ/

- |      |              |   |                     |
|------|--------------|---|---------------------|
| i.   | <b>ship</b>  | → | <b>ʃipu</b> ‘ship’  |
| ii.  | <b>cup</b>   | → | <b>kɔpu</b> ‘cup’   |
| iii. | <b>court</b> | → | <b>kɔtu</b> ‘court’ |

Other strategies adopted to accommodate loanwords into the language are discussed in the next section.

### 4.2.3 Accommodation Strategies

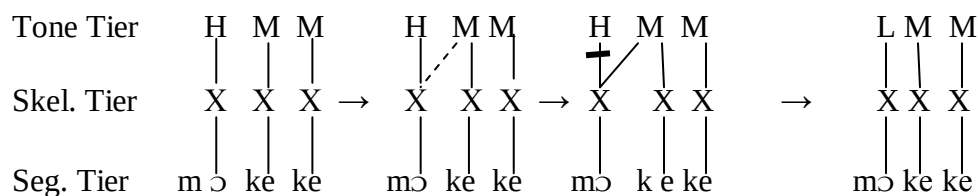
Accommodation strategies as used in this thesis here refer to phonological processes and conditions that are applied to foreign words borrowed into the language in order to make them conform to the phonology of the target language. Some of these strategies include change of tone, assigning class marker prefixes, change of place of articulation, change in phonation of some segments, epenthesis and deletion.

#### 4.2.3.1 Change of Tone

One of the identifiable areas loaned words are influenced to conform to the phonology of Tùtrùgbù, from the data collected, is the change of tone of the borrowed word as shown in (16) above. An example to illustrate this point is the word, **mɔ́kēkē** ‘holiday’ borrowed from Ewe into Tùtrùgbù.

The consistent change in tone of the initial vowel from high tone in Ewe to the low tone in Tùtrùgbù as shown in the words in example (16) above is the evidence of one of the strategies the speakers of Tùtrùgbù use to accommodate the Ewe word into the Tùtrùgbù language. The change of tone is illustrated in example (21) using the AT framework as follows:

(21) **mɔ́kēkē** → **mɔ̀kēkē** ‘holiday’



From the Autosegmental representation above, the tone borne by the /ɔ/ of the initial syllable [mɔ] is high (H). The mid-tone of the second syllable [kē] has spread in a regressive manner to lower the pitch of the initial high tone of the first syllable. After the assimilation process, the high tone on the initial syllable has become a low tone [mɔ̃]. This change of the tone of the initial syllable of the loanword got it lexicalized into Tùtrùgbù.

As can be seen, the illustration above explains the change that has occurred to the structure of the word from a high (H) tone to low (L) tone through the various stages. Akanlig-Pare (2005) also noted that in Buli, the only occasion where stems manifest tonal combinations is in the loanwords, especially from English. For example, disyllabic words with primary stress on the initial syllable will also attract high tone (H), while the unstressed second syllable will attract low tone (L). The following words from Buli in (18) below are some examples.

- (22)            a) 'ti:tʃə → títʃə 'teacher' [Akanlig-Pare, 2005]  
                   b) 'lɔ:rɪ → lɔrɪ 'lorry' [Akanlig-Pare, 2005]

The tone combinations reported from Buli is observed in Tùtrùgbù. The following are some other examples as shown in (23) below.

- (23)            English            Tùtrùgbù  
                   a) 'bʌkɪt → bókítì 'bucket'  
                   b) 'səʊdʒə → sódzà 'soldier'  
                   c) 'mætʃɪz → mádzésì 'matches'

In the examples above, all the loanwords with primary stress in the source language were assigned high tone in the target language whereas the unstressed syllables are assigned the low tone.

#### 4.2.3.2 Class Marking of Loanwords

Loanwords without noun class markers are assigned the appropriate class markers. The following are some examples from Ewe into Tùtrùgbù as shown below.

(24) **ahlɔ̃e** → **kahlɔ̃ɛ** ‘antelope’

The word for antelope in Ewe is *ahlɔ̃e* but it has been assigned the noun class 7 marker [kɛ] to make the new word *kahlɔ̃ɛ* ‘antelope’ in Tùtrùgbù. The rest of the instances of assigning noun class markers to loanwords are shown in the examples below. Ewe is the source language from which the words are loaned into Tùtrùgbù. The last example is sourced from English as indicated.

| (25) | Ewe                |   | Tùtrùgbù              | Noun Class |
|------|--------------------|---|-----------------------|------------|
|      | <b>tu</b>          | → | <b>otu</b> ‘gun’      | III        |
|      | <b>ga</b>          | → | <b>ɔga</b> ‘bell’     | III        |
|      | <b>akpa</b>        | → | <b>kɛkpa</b> ‘fish’   | VII        |
|      | <b>ale</b>         | → | <b>kile</b> ‘lizard’  | XIII       |
|      | <b>phone (Eng)</b> | → | <b>kifoni</b> ‘phone’ | IX         |

These nouns are assigned the noun class markers as shown above in order to admit them into the language. They have thus become lexicalized into Tùtrùgbù.

Assigning noun class markers to loanwords is confirmed in Abiodun (1989:52) which notes that “grammatical number of singular and plural is overtly marked in Igède by the use of vowels” so loanwords having consonant initials are prefixed with vowels.

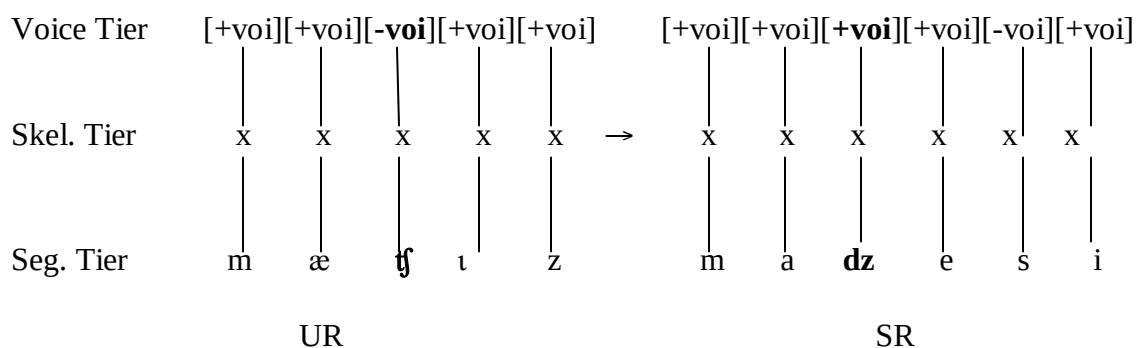
#### 4.2.3.3 Change of Phonation

Another way by which loanwords are accommodated into Tùtrùgbù is through the change of place of articulation, manner of articulation and phonation of some segments in the word. An example is shown in example (26) below.

(26) a) 'mætʃɪz → mǎdzésì ‘matches’

The change in phonation of segments as a result of accommodating them according the phonology of the language is illustrated in the example (26b) below in the Autosegmental framework.

b) 'mætʃɪz → mǎdzésì ‘matches’



As indicated above, the voiceless palato-alveolar stop /tʃ/ in the word from the source language, Ewe, has become the voiced palato-alveolar stop /dz/ in the loaned word in Tùtrùgbù. Other examples include the following also from Ewe.

- c) i.      ahiãvi → aziãvi ‘concubine’
- ii.      e.gale → a.kale ‘it persists’

From the examples in c) above, it can be seen that the glottal fricative /h/ in *ahiãvi* ‘concubine’ from Ewe has been changed to the voiced alveolar fricative /z/ in the loanword into Tùtrùgbù and pronounced as *aziãvi* ‘concubine’. This is an instance of change of the place of articulation. In the example (cii) also, the voiced velar stop /g/ in *e.gale* ‘it persists’ from Ewe has been devoiced into its voiceless counterpart /k/ as *a.kale* ‘it persists’ in Tùtrùgbù. These are some examples of the phenomenon in which segments are changed in order to accommodate them into the target language.

#### 4.2.3.4 Deletion to satisfy syllable structure

Some segments of the loanwords are deleted to make such words fit into the lexicon of the language. In example (27i), the final velar nasal was dropped making it acceptable into Tùtrùgbù from its original form in Akan, the source language. In example (27ii) below, the final high back rounded vowel /u/ was dropped and in addition, the front mid high unrounded vowel /e/ was replaced



with the back mid high rounded vowel /o/ making it a completely new lexical item in Tùtrùgbù. What remains unchanged is the meaning of the words in each case. The following are the examples in (27) below.

- (27)
- |     | Source Language          |   | Tùtrùgbù        |
|-----|--------------------------|---|-----------------|
| i.  | Akan: <b>Oman</b> [ɔman] | → | ɔma ‘community’ |
| ii. | Ewe: <b>te ŋu</b>        | → | toŋ ‘be able’   |

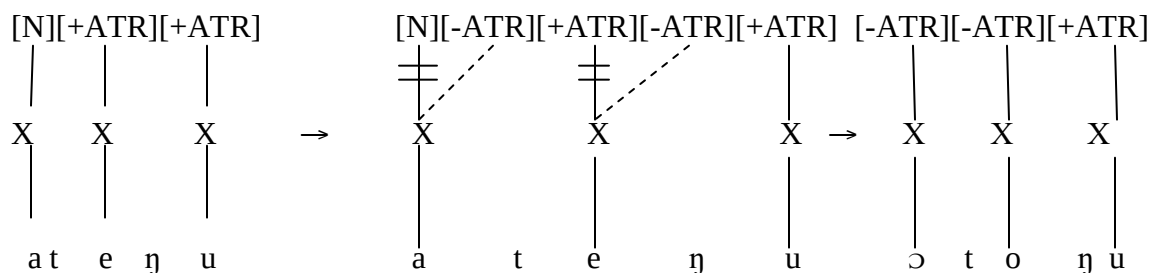
The following example also demonstrates the changes and modifications the Tùtrùgbù speaker makes to the words *ate ŋu* ‘will be able’ after borrowing it in order to accommodate it in Tùtrùgbù. It would be observed that the Tùtrùgbù speaker pronounces the words *ate ŋu* ‘will be able’ from Ewe as *ɔtoŋ* ‘will be able’ in Tùtrùgbù. Another significant thing to note is that the expression from the source language is composed of two words but has become one in Tùtrùgbù. An example of the word *ɔtoŋ* ‘will be able’ is shown in an utterance as captured below (27b):

- b) **onúpè òpè la ɔtoŋ dẽdẽ**
- |                                 |          |      |         |             |
|---------------------------------|----------|------|---------|-------------|
| onúpè                           | òpè      | la   | ɔ-toŋ   | dẽ-dẽ       |
| if                              | 2SG.like | CL.M | 2SG-can | cover-thing |
| ‘If you like, you can cover it’ |          |      |         |             |

It can be seen that the initial low central vowel /a/ is raised a level higher to back mid-low vowel /ɔ/. The front mid-high vowel /e/ is also replaced by the back mid-high vowel /o/ and the back high vowel /u/ is deleted. It could be explained that the language has an active [ $\pm$ ATR] vowel harmony system so the vowel segments especially the /a/  $\rightarrow$  /ɔ/ and the /e/  $\rightarrow$  /o/ alternations are made in order to achieve a rounding and back vowel harmony as in Turkey and Hungarian (cf. Ringen, 1998), among others. Again, the language accepts the velar nasal /ŋ/ at word final so the deletion of the final high back vowel /u/ is necessary in order to avoid redundancy. The following Autosegmental representation illustrates the modifications in example (28) below.

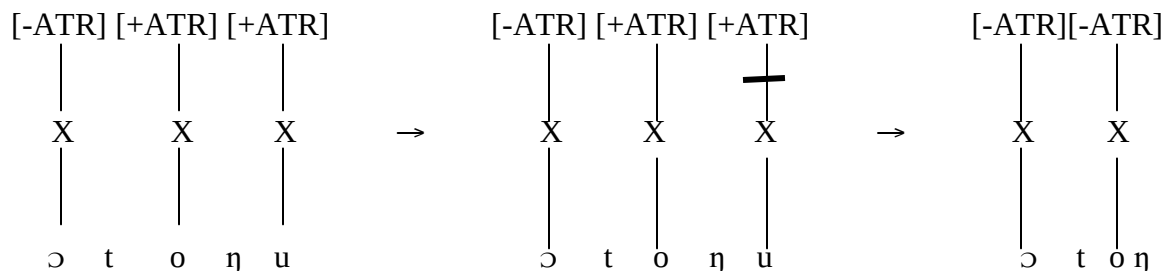
(28) a. **Raising of /a/ and /e/ to /ɔ/ and /o/**

*ate ŋu*  $\rightarrow$  *ɔtoŋ* ‘will be able’



b. **Deletion of /u/**

*ate ŋu* → *ɔtoŋ* ‘will be able’



As it has been explained earlier above, though the /ɔ/ and /o/ have different [ATR] values, they still constitute a rounding and back harmony. The /u/ is elided because the velar nasal /ŋ/ being the final consonant segment does not violate the syllable structure of the language. The bilabial nasal /m/ and the velar nasal /ŋ/ are the only consonant sound segments that serve as coda in a closed syllable in Tùtrùgbù. This is due to the fact that they have high sonority value and they can bear their own tone.

#### 4.3.0 Other Phonological Processes

The following phonological processes were also identified in the course of the study but were not discussed under the major thematic areas but it is necessary to give them some attention because they will enhance our understanding of the phonology of the language. These other phonological processes include rhotacization and retroflexion, deletion, labialization and glide formation.

### 4.3.1 Rhotacization and Retroflexion

Tùtrùgbù has both the retroflex /d/ and the trill /r/ which are in free variation. This is evident in the word for foot thus; ɔtsrɛ ‘foot’ versus ɔtsɛdɛ ‘foot’. In a careful speech, the Tùtrùgbù speaker would say ɔtsɛdɛ for foot but in rapid speech the same speaker would say ɔtsrɛ for foot. In the same manner, the word tɔdɔ ‘put’ is pronounced trɔ ‘put’ for the same verb. This phenomenon of giving ‘r’ colouration to /d/ is described as **rhotacization**. The examples are set out in (29) below.

- (29)
- |    |          |   |          |                   |
|----|----------|---|----------|-------------------|
| a) | ɔtsɛdɛ   | → | ɔtsrɛ    | ‘foot’            |
| b) | tɔdɔ     | → | trɔ      | ‘put’             |
| c) | riɖiɖiɖi | → | ririɾiri | ‘for a long time’ |
| d) | tɔɖifuɔ  | → | torifuɔ  | ‘put on fire’     |

The retroflex /d/ is pronounced as the trill /r/ in all the cases as shown above. This phenomenon is described as rhotacization.

### 4.3.2 Deletion at Clause Level

The examples (i) and (ii) below show that, when words are joined at clause level where the vowels may occur in sequence, the V<sub>1</sub> would delete.

(30) i. **ove + afla + vε** → **[ovaflave]** ‘we by passed’

|                |                |    |
|----------------|----------------|----|
| o-ve           | a-fla          | vε |
| 1PL-go         | 3SG-pass.COMPL | go |
| ‘We by passed’ |                |    |

ii. **agbă + mε + otutɔ** → **agbamotutɔ** ‘back biting’

In the utterances above, the deletion rules still apply in that where a word ending with a vowel is joined with another word having a vowel prefix as shown in the examples above. In example (30i), the final vowel /e/ in *o.ve* ‘we go’ is deleted when the prefix vowel /a/ of *a.flā* ‘3SG.pass’ to have *[ovaflave]* instead of *\*[oveaflavε]*. In the same way, in the example (30ii), the /ε/ in *mε* is deleted when the /o/ of *otutɔ* is joined to it.

### b) Deletion of class marker

There is also a deletion of class marker in the realization of new words, phrases and clauses. An example is shown below in (31).

(31) **zã + [ke-]si** → **ziěsi** ‘sit down’

The above example shows some complex phonological processes that are brought to bear as a result of the combination of the verb *zã* ‘sit’ and the noun *kesi* ‘ground’ to form the verb phrase *ziěsi* ‘sit down’. It is noticeable first and foremost that *kesi* ‘ground’ was derived as a result of the combination of the class

marker prefix [kɛ-] and the noun *esi* ‘ground’ where the /ɛ/ was deleted from *kɛ-esi* to have *kesi* ‘ground’ to satisfy the deletion rule condition which says that where two vowels occur in sequence as a result of compounding, V<sub>1</sub> must be deleted. Further, the /k/ of *kesi* ‘ground’ gets deleted to have *esi*. When the verb *zã* ‘sit’ and the noun *esi* ‘ground’ are combined in *zã esi* ‘sit down’, the deletion rule of the V<sub>1</sub> in that sequence fails to apply. What is noticeable rather is the coalescence of /ã/ and /e/ into /ẽ/. The new word now should read \*zẽsi ‘sit down’ but the /e/ in *esi* ‘ground’ fails to delete even after the coalescence so the *ẽe* sequence has yielded the glide *iẽ* [jẽ] to make the new word derived from the combination as *ziẽsi* ‘sit down’. The appearance of the palatal glide /j/ explains why the nasality of /a/ that was coalesced to the /e/ but not the /i/. The language does not have nasalized consonants and since glides share much with consonants than vowel, the nasal feature was dumped on the vowel /e/ which is a potential bearer.

#### 4.3.3 Labialization and Glide formation

Some [-round] segments are labialized when they are followed by the round vowels /u/, /ʊ/ or /ɔ/ and other vowels which are [-rnd]. The following in the example (32) are shown below.

|      |       |                  |                                          |                      |
|------|-------|------------------|------------------------------------------|----------------------|
| (32) | i.    | <b>ka-ɔɛ</b>     | <b>[kaɔ<sup>w</sup>ɛ]</b>                | ‘bird’               |
|      | ii.   | <b>kɛ-ɸoã</b>    | <b>[kɛɸ<sup>w</sup>ã]</b>                | ‘bone’               |
|      | iii.  | <b>ɔ-elititi</b> | <b>[l<sup>w</sup>etiti]</b>              | ‘stand’ (imperative) |
|      | iv.   | <b>kɛ-boɛboɬ</b> | <b>[kɛb<sup>w</sup>ɛboɬ]</b>             | ‘few’                |
|      | v.    | <b>ki-mui</b>    | <b>[kim<sup>w</sup>i]</b>                | ‘lake’               |
|      | vi.   | <b>ki-ɸui</b>    | <b>[kifi<sup>w</sup>i]</b>               | ‘rope’               |
|      | vii.  | <b>ɔɬɔɛ</b>      | <b>[ɔɬ<sup>w</sup>ɛ]</b>                 | ‘hand’               |
|      | viii. | <b>ɔmɔɛ</b>      | <b>[ɔm<sup>w</sup>ɛ]</b>                 | ‘salt’               |
|      | ix.   | <b>bui</b>       | <b>[b<sup>w</sup>i]</b>                  | ‘cut’                |
|      | x.    | <b>boɛtakpɔɛ</b> | <b>[b<sup>w</sup>ɛtakp<sup>w</sup>ɛ]</b> | ‘think’              |

It would be seen from the above examples that, /u/ and its [-ATR] counterpart /ɔ/ are able to labialize the consonant segments preceding them as a result of their lip rounding features. As shown in the underlying form (in square brackets) /ɔ/ became /ɔ<sup>w</sup>/, /ɸ/ became /ɸ<sup>w</sup>/, /l/ became /l<sup>w</sup>/, /b/ became /b<sup>w</sup>/ in (iv), (ix) and (x), /m/ became /m<sup>w</sup>/ and /p/ became /p<sup>w</sup>/ in each case in the examples above. The bilabial glide /w/ has thus been formed in the words above when the [+rnd] vowels are followed by other vowels that are [-rnd].

#### 4.3.4 Nasalization

Nasalization is another important phonological process observed in the language.

Nasalization is a secondary articulatory feature. In Tùtrùgbù, nasality is contrastive and this is shown in the example (33) below.

- (33) i.     **bɔwa**           ‘medicine’  
               **bɔwã**           ‘vainness’
- ii.    **kidzi**           ‘heart’  
               **kidzĩ**           ‘ovary’
- iii.   **kɛkpa**          ‘fish’  
               **kɛkpã**          ‘life’

In the example (33) above, the difference between the words for medicine and vainness is nasalization of the central low vowel /a/. The difference in meaning caused by nasality is evident in the other minimal pairs in the example (33) above.

Nasality spreads to assimilate orality of segments that occur with the nasal sounds as shown in the example (34) below.

- (34) *mini* [mĩni] ‘taste’

|            |        |        |        |        |   |        |        |        |        |
|------------|--------|--------|--------|--------|---|--------|--------|--------|--------|
| Nasal Tier | [+Nas] | [-Nas] | [+Nas] | [-Nas] |   | [+Nas] | [-Nas] | [+Nas] | [-Nas] |
|            |        |        |        |        |   |        |        |        |        |
| Skel. Tier | X      | X      | X      | X      | → | X      | X      | X      | X      |
|            |        |        |        |        |   |        |        |        |        |
| Seg. Tier  | m      | i      | n      | i      |   | m      | i      | n      | i      |



The illustration above shows how the nasality of /**n**/ in *mini* ‘taste’ has spread to assimilate the orality of the /**i**/ which has occurred between the two nasal segments /**m**/ and /**n**/. The spreading of the nasal is shown by the broken lines in the diagram. From our cross linguistic experience, it is possible that the /**m**/ too can spread its nasality to assimilate the orality of /**i**/ but in Tùtrùgbù, the data available do not show /**m**/ spreading but rather /**n**/ is shown to be spreading retrogressively as exemplified in the following pairs in (34b).

- b.     i.     **dzi**   [dzi]   ‘buy’  
               **dzini** [dzĩni] ‘wife’
- ii.    **nyi**   [nyi]   ‘know’  
               **nyini** [nyĩni] ‘husband’

From the examples above, it is obvious that the alveolar nasal /**n**/ spreads leftward and nasalizes the /**i**/ that precedes it.

#### 4.4.0 Conclusion

In sum, this chapter discussed two main aspects of Tùtrùgbù phonology namely ATR vowel harmony and loanword phonology. Other identifiable phonological processes have also been discussed. It was found that Tùtrùgbù has two sets of ATR vowel harmonic sets with /**a**/ occurring with the two sets though it is underlyingly [-ATR]. It has also been shown that the low central vowel /**a**/ is

neutral and shows transparency to both [+ATR] and [-ATR] set of vowels. Again, noun class marking affixes and determiners harmonize with the stems they are attached to. It was again shown that ATR vowel harmony in the language is controlled from the stem when the phonological word does not have a prefix. The harmony is as well controlled from the prefixes when vowel in the noun class prefixes and pronominals trigger harmony with vowels in the stem. It has also been shown that the class marker **[ki-]** prefixes nouns from the [+ATR] harmonic vowel set whereas the **[kɪ-]** is prefixed to nouns having vowels from the [-ATR] harmonic set. Finally, some of the strategies by which loanwords are lexicalized and accommodated into Tùtrùgbù are by class marking, change of tone, change of phonation, epenthesis and deletion to satisfy syllable structure conditions.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION**

#### **5.1 Introduction**

The purpose of this study is to describe some aspects of Tùtrùgbù Phonology in the framework of the Autosegmental Theory (AT) and the Mora Theory. The Autosegmental Theory demonstrates that tones are not inherent in the segments that bear them but they are autonomous segments that must be placed on separate tiers different from that of the phonological segments. This principle has been extended to other phonological phenomena and processes. It is based on this principle that the thematic areas of Tùtrùgbù Phonology identified were discussed in the study.

This chapter summarizes the thesis in five sections. Section 1 introduces the chapter whereas the section 2 presents the summary of the findings. Section 3 is about the contributions this study makes to the body of knowledge on general linguistics study; in section 4 are some recommendations for future research and section 5 is the conclusion of the study.

## 5.2 Summary of Findings

The study has described the sound inventory of Tùtrùgbù. The consonant sounds are made up of stops, fricatives, affricates, nasals and approximants. Apart from the bilabial nasal /m/ and the velar nasal /ŋ/ which distribute word initially, medially and finally, all other consonants distribute only word initially and word medially as well as intervocalically. There are some sound segments like /x/ in *axa* ‘fish trap’ and /fw/ in *kɛfwã* ‘bone’ which distribute only word medially.

The V syllable type may be a noun class marker, a pronominal, a singular number marker and a plural number marker. The V<sub>2</sub> in the vowel sequence of the CVV syllable may also be a clause marker, a pronominal, a determiner, intensifier and topicalizer. The C<sub>2</sub> in the consonant cluster of the CCV syllable may be a lateral /l/, a trill /r/ or a glide /w/. The coda position, if required, is occupied by the bilabial nasal /m/ or the velar nasal /ŋ/. Some of the processes by which changes in the syllable structure of Tùtrùgbù occur are deletion and epenthesis.

Two harmonic sets of vowels have been identified in the language. Vowel harmony occurs exclusively with only [+ATR] vowels and also exclusively with only [-ATR] vowels. There are some instances also where vowels from both sets co-occur in the same word. As mentioned earlier also, /a/ occurs with vowels from both sets. Vowel harmony also occurs across word boundaries and also at phrase and clause levels. The language has harmonizing affixes and harmonizing articles. The ATR vowel harmony in Tùtrùgbù is both prefix controlled and stem

controlled as the data show. The [ki-] marks nouns which contain [+ATR] vowels whereas [kɪ-] marks nouns containing vowels from the [-ATR] harmonic set as illustrated in example (1c) in §4.1.1. It is also evident in the study that, some of the features that define the vowel harmony system of Tùtrùgbù include rounding or labial harmony, frontness harmony, backness harmony, height and cross height harmony of both [+ATR] and [-ATR] vowels.

Tone has also been identified as a very prominent segment in the language. The study discussed three (3) level tones and two (2) contour tones identified in the language. Tone performs lexical functions such as homonymy and grammatical functions like tense, aspect, mood and expression of emotions such as uncertainty, surprise, caution, affirmation, non-affirmation, jeering and doubt. Tone also signals conditional clauses. It was found that tones in the language undergo processes like gliding pitch, down stepping, down drifting, tone copying, tone polarity, low tone spreading and complex tone simplification. The tone processes add some enrichment to the language and its phonological structure.

The study has revealed the following notable differences that are occasioned by the influences of the social status of the speakers of the language.

## a) Notable differences in the class marking of some lexical items

| Young speakers<br>in the diaspora | Young speakers<br>at home | Gloss  |
|-----------------------------------|---------------------------|--------|
| amɔ                               | ki-mɔ                     | breast |
| ne                                | ki-ne                     | tooth  |
| kplɔ̃                             | ɔ-kplɔ̃                   | table  |
| ahɔɛ                              | ka-hɔɛ                    | hand   |
| atɔ̃                              | ka-tɔ̃                    | ear    |

It can be observed from the example a) above that the young speakers outside the Nyagbo community are no longer marking noun classes whereas those at home still mark noun classes.

## b) Some notable differences between the highland speakers on the mountain and the lowland speakers in the valley.

| Speakers at<br>Nyagbo Sroe | Speakers at<br>Gagbefe and<br>other<br>communities | Gloss    |
|----------------------------|----------------------------------------------------|----------|
| bhutu                      | kitu                                               | mountain |
| buŋaŋa                     | keŋaŋa / gbɔŋaŋa                                   | food     |
| kɛxwã                      | bɔhwã                                              | bone     |

It is also evident from the data collected and shown in the example b) above that the highland speakers at Nyagbo Sroe mark same nouns differently from the communities like Gagbefe and Odumase which are located in the valley.

The study further notes that there are lots of loanwords in Tùtrùgbù. The major sources of these loanwords included Ewe, English and Akan. When words are borrowed into the language, such words go through accommodating processes phonologically to become lexicalized. Some of the processes loanwords undergo in order to be accommodated into the phonology of the language include class marking, change of tone, change of place of articulation, change of phonation, epenthesis and deletion. One of the major influences of languages in contact with Tùtrùgbù is the loss of its active and complex noun class system which Essegbey (2009) describes as decaying. Welmers (1973:184) in Sanusi (2003) describes such loss of the noun class system as noted in Tùtrùgbù as vestigial and decadent. This calls for concerted efforts to stop the deterioration of the noun class system before it is lost completely.

### 5.3 Contributions of the Study

The following are some significant contributions this study on “*Aspects of Tùtrùgbù Phonology*” has made to the study of Linguistics in general and African languages in particular. Firstly, it provides the platform for further discussions and research on the linguistics of the language. It also opens up the language and

subjects it to discussion and linguistic analysis. It is also a contribution to the existing body of knowledge by providing data from Tùtrùgbù for a cross-linguistic study especially on phonology. This study will also serve as a source of reference for other researchers, students and the general linguistics world. This study has added to our knowledge and understanding of the Ghana Togo Mountain languages (GTMLs). Finally, this thesis is another step and contribution towards efforts being made to document this language.

#### **5.4 Recommendations**

After exploring aspects of Tùtrùgbù phonology, the following are some recommendations I have proposed for the advancement of the study of Linguistics in Ghana, Africa and the general linguistic world.

Firstly, I recommend strongly that other aspects of Linguistics of Tùtrùgbù be explored and researched in order to tap the wealth of knowledge yet to be discovered in this language.

Secondly, I recommend a sociolinguistics and ethnopragmatic studies of the language in order to unearth the dynamic linguistic behaviours of the people and the language.

Finally, I recommend that Language Documentation Centers and donor institutions interested in the study of the African native and indigenous languages should vote grants to fund research work on unwritten, endangered and minority



languages in contact like Tùtrùgbù in order to encourage lots of linguistic studies of the languages.

## 5.5 Conclusions

Finally, from the data collected, it has been noted that the social status of the speakers of the language has great influence on the language. The following conclusions were very evident from the research. It was noted that the native speakers at home and the non-literates still preserve the noun class system of the language. The native speakers in the diaspora and the young educated tend to simplify the noun class system. No significant differences were identified in the data provided by men and women speakers. Some differences were however noted between the noun class marking of some lexical items from the data provided by highlanders and the lowlanders. Some of the influences were exemplified in the §5.2 above. Beside all that, copious empirical and natural data have been provided in this study in the various examples to adequately describe the language in very clear terms using the Autosegmental Theory and the Mora Theory. This study again is another further step taken to transform an oral culture into a literate culture since language and culture are inseparably linked. The study has been very exciting, insightful and nerve wracking. It is my fervent hope that all who would come across this work will find it worthy to build upon it for the development of the study of Linguistics.

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## APPENDIX A

### The Interview Sheet

The questions were asked in Ewe but the responses were provided in Tùtrùgbù.

a) Nú ka wɔ ele? ‘What are you doing’?

.....

.....

.....

b) Nú ka ta ele wɔ́? ‘Why are you doing that’?

.....

.....

.....

c) Nú ka agawɔ le eke megbe? ‘What will you do after this’?

.....

.....

.....

.....

d) Né èdù lótò Ghana Cedi akpe ewo ɔ́, aleke àzẽ? ‘If you win a  
fortune of GH¢10 000.00 how will spend it’?

.....

.....

.....

.....

## APPENDIX B

### The Frog Picture Story

This picture story was narrated by Mr. Ben Dzokpo (78years) at Nyagbo Sroe on 25<sup>th</sup> September, 2013. Mr. Ben Dzokpo is an indigene of Nyagbo Sroe. He is an elder in the community.

The frog picture story is a story about a child who was on a journey home with companions which are a big frog, a small frog, tortoise and dog. On their way home, the big frog was very naughty and fomented lots of troubles. This story was cast in sketches and is intended to elicit the language from respondents in a natural and everyday communication of the native speakers. The following utterances are sentences (language structures) recorded as narrated by Mr. Ben Dzokpo.

#### Scene 1

##### (1) anuvɔ̀ɔ̀lɛ́títí né aɖáka nɔ́ shú áɖàǎ́ aɖáka nɔ́

anuvɔ̀ɔ̀      èlí-títí      né      aɖáka nɔ́      shú      á-ɖàǎ́      aɖáka nɔ́  
child-DET   be-standing   be.at   box DET   skin   3SG-open   box   DET  
‘The child is standing beside the box. He opens the box’

##### (2) èbú á-lɔ̀bà, kɛ̀vɔ̀bɔ́ hɔ́hɔ́è, kɛ̀vɔ̀bɔ̀yí tsé áplénò

èbú      á-lɔ̀bà      kɛ̀vɔ̀bɔ́      hɔ́hɔ́è      kɛ̀vɔ̀bɔ̀yí      tsé      á-plénò  
dog   3SG-be.lying   frog   large-FOC   frog-little   also   3SG-be.present  
‘The dog is lying down, the big and the small frogs are also round’

##### (3) bɔ̀dɔ́ tùtí

bɔ̀dɔ́      tùtí  
PL-thing   five  
‘Five items in all’

## Scene 2

## (4) ανυόε άλéké àkpá hðε αdάka nó me

ανυό-ε            άλéké    àkpé            àhðε    αdάka    nó        me  
 child-DET        EMPH    3SG-put            hand    box        DET        LOC  
 ‘The child puts his hand into the box’

## (5) ěvũ κενοbό bluí nó àló κενοbό yíε kásálā aplíníí

ěvũ            κενοbό    bluí    nó        àló κενοbό    yíε    kásálā    a-plíníí  
 3SG-catch    frog        small    DET    or    frog        little    tortoise    3PL-be.present  
 ‘He catches the small or the little frog. Tortoise is present’

## (6) κενοbό hohoe tse áltobà

κενοbό            hohoe    tse        áltobà  
 frog                large    also        3SG-lying  
 ‘The big frog is also lying there’

## Scene 3

## (7) ανυόε abðbð ěvũ κενοbό yie

ανυό-ε            a-bðbð            é-vũũ            κενοbό            yie  
 child-DET        3SG-bend        3SG-catch        frog                small  
 ‘The child bends down to catch the small frog’

## (8) κενοbό hóhóè tse plénο èbúó ne kásálā bèdǵí ανυòò hóó

κενοbό    hóhóè    tse    plénο        èbú-ó        ne        kásálā-ā        bè-dǵí  
 frog    big    also    be.present    dog-DET    CONN    tortoise-DET    PL-watch  
 ‘The big frog is around, the dog and the tortoise are looking on’

ανυòò            hóó  
 child-DET        [idio]  
 ‘The child’

**Scene 4****(9) anuvò àléké elítítí ěđji kevobó tábhá ne ebú-ɔ ne kásálǎ**

anuvò àléké elítítí ěđji kevobó tábhá ebú-ɔ ne  
 child 3SG.EMPH stand 3SG.PROG.watch frog two dog-DET CONN

kásálǎ-ǎ

tortoise-DET

‘The child is standing and looking at the two frogs and the dog and the tortoise’

**(10) anuvò elítítí akpá hɔɛ ne titie me**

anuvò elítítí akpá hɔɛ ne titie me  
 child-DET standing 3SG-fold hand PREP chest LOC

‘The child is standing and folds his arms across the chest’

**(11) kevobó tse kibluiblui nɔ ne kihóhóe kásálǎ ebú-ɔ beđi anuvó**

kevobó-ɔ tse kibluiblui nɔ ne kihóhóe kásálǎ ebú-ɔ  
 frog-DET also CL-little DET CONN CL-big tortoise dog-DET

be-đi anuvó-ɔ

PL-watch child-DET

‘The small and the big frog, tortoise and the dog are looking at the child’

**Scene 5****(12) anuvò elítítí ké gè ěđi kásálǎ ne èbú-ɔ**

anuvò-ɔ e-lítítí ké gè ěđi kásálǎ ne èbú-ɔ  
 child-DET 3SG-stand CONN REL 3SG.watch.HAB tortoise CONN dog-DET

‘The child stands watching the tortoise and the dog’

**(13) èbú-ɔ ne kásálǎ tse ěđi kle anya la akpòzĩ àló akā kevobó hohoe ke lá me**

èbú-ɔ ne kásálǎ tse ěđi-i kle anyalá akpe òzĩ  
 dog-DET CONN tortoise also 3SG.watch-INT there make.PROG make shout

‘The dog and the tortoise are also there watching and making noise’

àló akā kevobó hohoe kele áme  
 or 3SG.command frog large ADV face  
 ‘or rebuking the big frog’

**Scene 6****(14) anuv̀̀ aleke évũũ kev̀̀b́ ne blui nɔ ṽnu ya hɔɛ me**

anuv̀̀-ɔ aleke évũũ kev̀̀b́ ne blui nɔ ṽnu ya hɔɛ me  
 child-DET EMPH 3SG.catch frog Adj small DET within 3SG.POSS hand LOC  
 ‘The child carries the small frog in his hand’

**(15) klɛ akã kev̀̀b́ hóhóè name sɛ kɛlɛ sobi abɛta nadza?**

klɛ akã kev̀̀b́ hóhóè nɔ ame sɛ kɛlɛ sobi abɛta nadza?  
 Adv 3SG.command frog large DET face that why do AUX Q  
 ‘He rebukes the big frog saying, “why are you doing that?”’

**(16) kásálã la plinii èbúɔ tse la plinii**

Kásálã-ã la plinii èbúɔ tse la plinii  
 tortoise-DET DEM be.present dog-DET also DEM be.present  
 ‘The tortoise and the dog are also around’

**Scene 7****(17) bávé b̀̀pám**

bá-vè b̀̀pám  
 3PL-go.PST home  
 ‘They went home’

**(18) anuv̀̀ pút̀̀ ebualie de kásálã le ebualie de**

anuv̀̀-ɔ ɔ-pút̀̀ ebu-alie de kásálã le ebu-alie de  
 child-DET 2SG-lead dog-EMPH follow tortoise be.present dog-EMPH follow  
 ‘The child is ahead followed by the dog and tortoise is behind them’

**(19) kásálã kefeke kev̀̀b́ hóhóè ne kibluiblui nɔ àló eyie**

Kásálã kefeke kev̀̀b́ hóhóè ne kibluiblui nɔ àló eyie  
 tortoise carry frog large CONN small DET or little  
 ‘Tortoise carries the big and the small frog’

**(20) betsiɖi kásálã nábhà**

be-tsiɖi kásálã-nɔ ábhà  
 PL-place tortoise-DET top  
 ‘place them on the tortoise’

## Scene 8

## (21) kásálā káféké keṽbó hóhóè ne keṽbó kibluiblui nɔ

|          |        |       |       |      |       |            |     |
|----------|--------|-------|-------|------|-------|------------|-----|
| Kásálā   | káféké | keṽbó | hóhóè | ne   | keṽbó | kibluiblui | nɔ  |
| Tortoise | carry  | frog  | large | CONN | frog  | small      | DET |

‘Tortoise carries the big and the small frogs’

## (22) belíe de gake keṽbó hóhóè kètáa keṽbó bluiblui nɔ

|       |      |      |       |       |          |       |          |     |
|-------|------|------|-------|-------|----------|-------|----------|-----|
| belíe | de   | gake | keṽbó | hóhóè | kètáa    | keṽbó | bluiblui | nɔ  |
| put   | back | but  | frog  | large | kick.PST | frog  | small    | DET |

‘... at the back but the big frog kicked the small one ...’

## (23) ɔtsɛɖɛ sise té ne kásálā nàbhá

|        |      |      |    |              |      |
|--------|------|------|----|--------------|------|
| ɔtsɛɖɛ | sise | té   | ne | kásálā-nɔ    | ábhà |
| foot   | away | from | be | tortoise-DET | top  |

‘... away from the back of the tortoise’

## Scene 9

## (24) anɔvɔɔ akpómɔ̀xɔ́ɛ ké laākā keṽbó hóhóè náme sɛ

|           |             |       |       |        |          |           |           |
|-----------|-------------|-------|-------|--------|----------|-----------|-----------|
| anɔvɔɔ    | akpómɔ̀xɔ́ɛ | ké    | laākā | keṽbó  | hóhóè-nɔ | áme       | sɛ        |
| child-DET | Adv         | again | FOC   | rebuke | frog     | large-DET | face that |

‘The child again sternly rebukes the big frog’

## (25) kelɛsobíabɛtà nàdzà klɛ akpɛ wòɛ nɔ

|                 |       |       |      |          |         |
|-----------------|-------|-------|------|----------|---------|
| kelɛ-sobí-abɛtà | nàdzà | klɛ   | akpɛ | wòɛ      | ɛ-nɔ    |
| why-do-AUX      | Q     | there | put  | 2SG.POSS | 3SG-DET |

‘why do you do that to your fellow?’

## (26) ne keṽbó hóhóè ná mɛ

|      |       |       |     |      |
|------|-------|-------|-----|------|
| ne   | keṽbó | hóhóè | nɔ  | áme  |
| CONN | frog  | large | DET | face |

‘... for the big frog’

**(27) kásálã tse tsína bebedi titi asise kana**

kásálã            tse    tsína   be-beḍi        titi    asise   kana  
 tortoise        also   turn   AUX-watch   rise   away   what  
 ‘Tortoise also stretched and turns to watch what ...’

**(28) γε ανυψακãã hóhóè κε lá me**

γε    ανυψα            a-kãã            hóhóè   κελε    áme  
 REL   child-DET   3SG-rebuke   large   ADV   face  
 ‘... the big frog which the child rebukes’

**Scene 10****(29) ανυδãléké yènè bødð toló petee**

ανυδ    àléké            yè    nè            bødð   toló            petee  
 child   EMPH        3SG   CONN        items   INDEF        all  
 ‘This child and all the items ...’

**(30) bàló bávé bðpám**

bà-ló            bá-vè            bðpám  
 3PL-stand    3PL-go            home  
 ‘The left for home’

**(31) tebeti kúo kèvðbó bluiblui nó tizíku kèlĩe me**

tebeti   kúo    kèvðbó            bluiblui        nó    tizíku   kèlĩ-e        me  
 ADV   bank   frog            small        DET   fall   river-DET   LOC  
 ‘While at the river bank, the small frog falls into the river’

**(32) κε ακπòzĩανυδ ακπòzĩ**

κε            ακπòzĩ            ανυδ            ακπòzĩ  
 CONN        3SG.shout    child            3SG.shout  
 ‘... and the child shouts’

**(33) kásálãã tse ḍíĩανυδò hòóó**

kásálãã        tse    ḍíĩ            ανυδò-ò        hòóó  
 tortoise-DET   also   watch        child-DET    Adv  
 ‘The tortoise looks at the child in dismay’

**Scene 11****(34) ànυvðṽ é-vũ òsí batsakε kèlĩ bávè bðpám**

ànυvðṽ      é-vũ      òsí      batsakε      kèlĩ      bá-vè      bðpám  
 child-DET    3SG-catch    stick    paddle      river    PL-go home  
 ‘The child holds a stick to paddle them through the river to go home’

**(35) gake kènðbó bluiblui nó**

gake    kènðbó      bluiblui      nó  
 but    frog            small            DET  
 ‘but the small frog ...’

**(36) kεwð ezikúbulĩε me**

kεwð    ezikú    bulĩ-ε      me  
 drop    fall    river-DET    LOC  
 ‘... falls into the river’

**(37) kásálāànυvó ne kènðbó hóhóε**

kásálā      ànυvó ne      kènðbó      hóhóε  
 tortoise    child    CONN      frog      large  
 ‘Tortoise, child and big frog ...’

**(38) kekpàsè okóróme bávðpám**

kekpàsè      okoro      me      bá-vð      pám  
 SM-stay      canoe      LOC    PL-go      home  
 ‘... on board a canoe no their way home’

**Scene 12****(39) kεvðbó hóhóε zetá kibluiblui tseḡε exœ tεkpεkelĩε me**

kεvðbó    hóhóε    zetá    kibluiblui    tseḡε    exœ    tε-kpε    kèlĩ-ε      me  
 frog      large    throw    small    foot    push    SM-put    river-DET    LOC  
 ‘The big frog kicked the small one into the river’



## Scene 13

## (40) ànuvɔɔ ne kásálã ne keɔbɔ́ hóhóe

|           |      |          |      |        |       |
|-----------|------|----------|------|--------|-------|
| ànuvɔɔ-ɔ  | ne   | kásálã   | ne   | keɔbɔ́ | hóhóe |
| child-DET | CONN | tortoise | CONN | frog   | large |

‘The child, tortoise and big frog ...’

## (41) bakpàsè okóró me èbá-tsake kèŋ

|          |       |     |                |       |
|----------|-------|-----|----------------|-------|
| ba-kpàsè | okóró | me  | èbá-tsake      | kèŋ   |
| PL-stay  | canoe | LOC | 3PL-cross.PROG | river |

‘They are crossing the river with canoe’

## Scene 14

## (42) ànuvɔɔ nyena àtákpúɔ́ klɛ e-bíeyo

|           |       |           |     |         |
|-----------|-------|-----------|-----|---------|
| ànuvɔɔ    | nyena | à-tákpúɔ́ | klɛ | e-bíeyo |
| child-DET | hold  | 3SG-head  | Adv | 3SG-cry |

‘The child holds his head and he is crying’

## (43) Kásálã tse ketsína tɔŋ keɔbɔ́ hóhóe-ɛ

|          |      |         |         |        |           |
|----------|------|---------|---------|--------|-----------|
| Kásálã   | tse  | ketsína | tɔŋ     | keɔbɔ́ | hóhóe-ɛ   |
| tortoise | also | face    | towards | frog   | large-DET |

‘Tortoise also turned towards the big frog’

## (44) ébísíasi kɛɛ sobi abetá nadza?

|              |     |      |       |        |
|--------------|-----|------|-------|--------|
| é-bísí-asì   | kɛɛ | sobi | abetá | nadza? |
| 3SG-ask-word | why | do   | AUX   | Q      |

‘He asks, why are you doing that’

## (45) etí elie nakpe kèŋ me tsá

|              |           |       |       |     |     |
|--------------|-----------|-------|-------|-----|-----|
| e-tí-í       | eli-e     | nakpe | kèŋ   | me  | tsá |
| 3SG-kick-DET | child-DET | into  | river | LOC | Adv |

He kicks the small one into the river’

## Scene 15

(46) *otsíe batse kekeke kpuó*

otsíe    ba-tse            kekeke            kpuó  
 ADV   PL-enter           cross.PROG   river bank  
 ‘Presently, they are at the bank to cross the river’

(47) *ànúvɔɔ ézèkú kɛ́ɛ me ányénà òglā*

ànúvɔɔ            ézèkú            kɛ́ɛ    me            ányénà            òglā  
 child-DET    3SG.enter       river   LOC   3SG.hold       jaw  
 ‘The child enters the river with the hand on the cheek’

(48) *klɛ á-pè kɛvɔbɔ bluiblui nɔ ne kɛ́ɛ me*

klɛ            á-pè            kɛvɔbɔ    bluiblui    nɔ    ne    kɛ́ɛ    me  
 CONN   3SG-look   frog   little   DET   ADV   river   LOC  
 ‘... and the child looks for the little frog’

(49) *kásálā ne kɛvɔbɔ hóhóe kpàse kɛ́ɛ me*

kásálā            ne            kɛvɔbɔ            hóhóe            kpàse    kɛ́ɛ    me  
 tortoise        CONN        frog            large            stay    river   LOC  
 ‘The tortoise and the frog are in the river’

(50) *plini ne kɛ́ɛme*

plini-i            ne            kɛ́ɛ    me  
 with-3SG        CONN        river   LOC  
 ‘They are with him in the river’

## Scene 16

(51) *ànúvɔɔ etsi kpoo gè ányɔ́náo ebieyo*

ànúvɔɔ            etsi    kpoo    gè            ányɔ́náo            e-bieyo  
 child-DET    turn    ADJ   REL   toward       3SG-cry  
 ‘The child looked away in a pensive mood and cried’

(52) *ebuɔ tse tsitse ányɔ́náo ebieyo*

ebuɔ    tse        tsitse    ányɔ́náo            e-bieyo  
 dog    also    turn    toward       3SG-cry  
 ‘Dog also looked away and cried’

**(53) kɛvɔbɔ ne kásálã budzidzi kpoo adàná sise**

kɛvɔbɔ            ne            kásálã            bu-dzidzi            kpoo    adàná    sise  
 frog            CONN            tortoise            3PL-silence    ADV    watch    afar  
 ‘Frog and tortoise sat in silence and watch from afar’

**Scene 17****(54) ànúvɔɔ ne èbúɔ ne kásálã ne kɛvɔbɔ hóhóe**

ànúvɔɔ            ne            èbúɔ    ne            kásálã    ne            kɛvɔbɔ            hóhóe  
 child-DET    CONN    dog    CONN    tortoise    CONN    frog            large  
 ‘The child, dog, tortoise and the big frog’

**(55) petee kɪdɪkɪ kúpá mè**

petee    kɪ-dɪkɪ            kúpá            mè  
 all    SM-reach    home            LOC  
 ‘They all get home’

**(56) ko bèdɪ dzɪɔm ko kɛvɔbɔ yíe tse**

ko    bè-dɪ            dzɪɔm            ko    kɛvɔbɔ            yíe    tse  
 then    3PL-watch    path            then    frog            small    also  
 ‘As they look onto the path, the small frog also’

**(57) etsi kɔɛnɪ kɛfɛ ábá bɔ̀lá pá**

etsi            kɔɛnɪ            kɛfɛ            ábá    bɔ̀lá            pá  
 3SG-turn    from            river-DET    come    PL.POSS    well  
 ‘it returns to the group in safety’

**(58) soɛwu nahɔɛ tití gɛ bàlé petee amò sàmè**

so    ɛwu            nahɔɛ            tití    gɛ    bàlé    petee    amò            sàmè  
 so    3SG.raise    3SG.POSS.hand    up    REL    PL    all    see            joy  
 ‘So he raised his hand and they were happy together’

**(59) se kɛvɔbɔ yie la ayálá gake**

se    kɛvɔbɔ            yie    la    ayálá            gake  
 that    frog            small    DET    3SG.isot            but  
 ‘... that the small frog was lost but ....’

**Scene 18****(60) bèdǵ kùpámè piapíi ko bàléo petee**

bè-dǵ            kùpá   me   piapíi            ko   bàléo   petee  
 3PL-arrive   home   LOC   strong            then   PL   all  
 ‘They all arrive home well’

**(61) bevũ àkóló kpli gè bá-mò sàme**

be-vũ            àkóló   kpli   gè   bá-mò            sàme  
 PL-catch   neck   ADV   REL   PL-see            joy  
 ‘They embraced joyfully’

**(62) sɛ bàlé petee bèdǵíkú piapíi**

sɛ            bàlé   petee   bè-dǵíkú            piapíi  
 that   PL   all   PL-arrive   strong  
 ‘That they all arrived safely’

**(63) ànuvɔ tse kásálǎ ebuɔ tse kɛvɔbɔ**

ànuvɔ            tse   kásálǎ            ebuɔ   tse   kɛvɔbɔ  
 child            also   tortoise            dog   also   frog  
 ‘The child, tortoise, dog and frog also ...’

**(64) tse petee bá-mò sàme**

tse            petee   bá-mò            sàme  
 also   all   PL-see            joy  
 ‘They are all happy’

## APPENDIX C

**Gari Processing**

The procedure for **Gàrí Gbagbã** ‘gari processing’ was narrated by Madam Eunice Kumah from Nyagbo Gagbefe on 23<sup>rd</sup> April, 2014 at 7:21am. Madam Eunice Kumah is a 50 year old lady who is engaged in gari processing. Her gari is sold to people in the local community and adjoining towns.

Gari is one of the staple foods served across West Africa and elsewhere in the world. It is a convenience food ready to serve at any moment either hot or cold. Varieties of dishes are prepared from gari. Some of such dishes include **eba** or **pino** in Nigeria and Ghana, **gari fɔtɔ** among the Gas, **gari bake** among the Ewes and ‘**students’ companion**’ among college students. A kind of snack called **gari biscuit** is prepared from gari. The following are the utterances describing the procedure for processing gari as recorded.

**(1) ɔ́mpɛ̀ ɔ̀pɛ̀ sɛ̀ɔ̀gbã gari, gbãɔ̀vɔ̀ yàm**

|        |          |      |           |       |       |            |       |
|--------|----------|------|-----------|-------|-------|------------|-------|
| ɔ́mpɛ̀ | ɔ̀pɛ̀    | sɛ̀  | ɔ̀gbã     | gari, | gbã   | ɔ̀-ve      | b̀yàm |
| if     | 2SG-want | that | 2SG-roast | gari  | first | 2SG-go.AUX | farm  |

‘If you want to process gari, you will first go to farm’

**(2) kãɔ̀dì tsú wɔ̀ àgbèlì nò pété**

|      |         |        |          |         |     |      |
|------|---------|--------|----------|---------|-----|------|
| kã   | ɔ̀-dì   | tsú    | wɔ̀      | àgbèlì  | nò  | pété |
| then | 2SG-AUX | uproot | 2SG.POSS | cassava | DET | ADV  |

‘Then you will uproot the cassava’

**(3) ɔ́mpɛ̀ɔ̀tsúàgbèlì nò békée kãɔ̀dì bhàtì**

|        |                  |         |     |        |      |         |       |
|--------|------------------|---------|-----|--------|------|---------|-------|
| ɔ́mpɛ̀ | ɔ̀tsú            | àgbèlì  | nò  | békée  | kã   | ɔ̀-dì   | bhàtì |
| if     | 2SG-uproot.COMPL | cassava | DET | finish | then | 2SG-AUX | bring |

‘If the cassava is uprooted, then you will bring it home’

(4) **ómpè̀d̀q̀ì bhátì békěe kã oplúi**

|                                          |         |       |              |      |              |
|------------------------------------------|---------|-------|--------------|------|--------------|
| ɔ́mpɛ̀                                   | òdì     | bhàtì | békēe        | kā   | o-plú-i      |
| if                                       | 2SG-AUX | bring | finish.COMPL | then | 2SG-peel-3SG |
| 'If it is brought home then you peel it' |         |       |              |      |              |

(5) ómpò oplúi békěe la, 3l3kòe vè nò gaté esí

ómpò o-plú-i      békěe      la, ó-lókò-ε  
if      2SG-peel-3SG      finish.COMPL      TP 2SG-take-3SG

vè            nò            gaté    esí  
go            DET            mill    under  
'When you have peeled it, take it to the mill'

(6) gàté nó mè eklé bàqì hòe

|                                  |     |     |      |         |           |
|----------------------------------|-----|-----|------|---------|-----------|
| gáté                             | nó  | mè  | ɛklé | bà-dì   | hò-ɛ      |
| mill                             | DET | LOC | ADV  | 3PL-AUX | grind-3SG |
| ‘They will grate it at the mill’ |     |     |      |         |           |

(7) kãɔ́lókòɛ vè nò gáté nó esí kã baɖi hɔɛ

kā ɔ-lɔkɔ-ε vè nò gáté nó esí kā bà-dì hò-ε  
 then 2SG-take-3SG go DET mill DET under then 3PL-AUX grind-DET  
 ‘Then you take it to the mill for grating’

(8) òmpò h́óe békée klé òyé kpé kotokú mè pétée ko

ɔmpɔ́ hɔ́-ɛ      békēe   kle   ɔ́-yé      kpé      kotokú      mè      pétée   ko  
 if      grind-3SG   finish   ADV   2SG-3SG   put      sack      LOC   all      PART  
 ‘After milling it, you put it into sack’

(9) ozíi kpé kèklàgbú hòhòe télí esí

|                                                  |     |          |       |       |       |
|--------------------------------------------------|-----|----------|-------|-------|-------|
| ozí-i                                            | kpé | kèklàgbú | hòhòe | téli  | esí   |
| 2SG-lay-3SG                                      | put | stone    | large | INDEF | under |
| 'In the sack, you'll put it under a large stone' |     |          |       |       |       |

(10) **tàzã klãse ewi tata**

te àzã kle ãse ewi tata  
 3SG AUX.sit ADV about day three  
 ‘It should be there for about three days’

(11) **kã bulĩε pétée kpó èlíe me**

kã bulĩ-ε pétée kpó èlíe me  
 then water-DET all out drain LOC  
 ‘Then all the starchy fluids in it will drain out’

(12) **kòàkpáà pìapíí**

kò à-kpá-à pìapíí  
 then 3SG-dry-AUX hard  
 ‘Then it will become fairly hard’

(13) **ómpèàkpáà békěe,**

ómpè àkpáà békěe,  
 if 3SG-dry-AUX finish.COMPL  
 ‘If it becomes dry’

(14) **ómpè ákpá bũlíε ékpó èlíe me**

ómpè á-kpá bũlí-ε é-kpó èlíe me  
 if 3SG-dry water-DET 3SG-out drain LOC  
 ‘If it is drained dry’

(15) **kε òshì née òbo ní kotokú pétéeftòsrá me**

kε ò-shì née òbo ní kotokú pétée té ò-srá me  
 then 2SG-fetch CONN dough from sack ADV then 2SG-sieve LOC  
 ‘Then you remove the cassava dough from the sack and sieve it’

(16) **ómpè ósrá mei, nê kekeãka ana**

ómpè ó-srá me-i, nê kekeãka a-na  
 if 2SG-sieve.PST LOC-TP CONN everything AUX-set  
 ‘After you have sieved it and everything is set’

(17) **sè ògbā wó gàrí nórí**

sè ògbā wó gàrí nórí  
 that 2SG-roast 2SG.POSS gari DET-TP  
 ‘You roast your gari’

(18) **kā ɔ́lókò wó agbe nó òlì ba tò**

kā ɔ́lókò wó agbe nó òlì ba-tò  
 then 2SG-take 2SG.POSS pan DET AUX 3PL-roast  
 ‘Then you take your pan to roast’

(19) **wó gbātò nó tró kífù abhá**

wó gbātò nó tró kífù abhá  
 2SG.POSS first DET put fire top  
 ‘Put your first pot of gari on fire’

(20) **ómpè agbe nó vū fú pè ye me ákpa pétéei**

ómpè agbe nó vū fú pè ye me ákpa pétée-i  
 if pan DET catch fire like 3SG LOC dry ADV-TP  
 ‘If the pan gets hot enough’

(21) **kā oshí mawóε nó gè òsrà**

kā o-shí mawóε nó gè òsrà  
 then 2SG-fetch cassava dough DET REL 2SG-sieve.COMPL  
 ‘Then you fetch the cassava dough which you sieved’

(22) **kpé agbeli nò gè òsrà kpéi,**

kpé agbeli nò gè òsrà kpé-i,  
 put cassava DET REL 2SG-sieve put-TP  
 ‘the cassava which has been processed’

(23) **àgòtí srà mè kā ɔ́lókòε kpé agbe nó me**

àgòtí srà mè kā ɔ́lókòε kpé agbe nó me  
 repeat sieve LOC then 2SG-take-3SG put pan DET LOC  
 ‘Sieve another one and put it into the pan’



- (24) **né kífú nábhà kǎ óblui me pétée**  
né kífú nábhà kǎ ó-blui me pétée  
CONN fire top then 2SG-stir LOC ADV  
‘On fire and then stir’
- (25) **ko ányázǎ b̀̀̀̀̀̀̀̀ ko**  
ko á-nyá-zǎ b̀̀̀̀̀̀̀̀ ko  
then 3SG-remain-sit little then  
‘Then it will on fire for some time’
- (26) **étsì nàzù gàrí ń ríqìqìqì kǎ àkpáà pétée**  
étsì nàzù gàrí ń ríqìqìqì kǎ àkpáà pétée  
3SG-turn become gari DET ADV then 3SG-dry-AUX ADV  
‘It will dry up and become gari’
- (27) **ko ògbǎ ẃ gari békèe**  
ko ògbǎ ẃ gari békèe  
then 2SG-roast 2SG.POSS gari finish  
‘Then your gari is roasted’

## APPENDIX D

**Palm Oil Processing**

This procedure for *belie* ‘processing palm oil’ was narrated by Madam Atsufœ aged 45 at Nyagbo Sroe on Tuesday 22<sup>nd</sup> April, 2014 at 2:22pm. Madam Atsufœ is a middle aged woman whose vocation was mainly processing of palm oil called **bb̃b̃** in Tùtrùgbù. She sells her palm oil in the surrounding market centers at Logba Alakpeti, Kpeve and Ho.

The palm oil is used primarily for preparation of food, soups and sauces. The palm oil is also used as base in the preparation of carbolic soaps, creams and body lotions. The following utterances are the recording of the processes involved in the processing of palm oil as described.

**(1) ɔmpɛ̃ɔ́tɔ́ b̃b̃b̃ɔ́lɔ́k̃ɔ́ atɔ́rì fúo klé èlíe**

|       |          |          |           |         |      |     |                |
|-------|----------|----------|-----------|---------|------|-----|----------------|
| ɔmpɛ̃ | ɔ-tɔ́    | b̃b̃b̃ɔ́ | ɔ-lɔ́k̃ɔ́ | a-tɔ́rì | fúo  | klé | èlí-e          |
| if    | 2SG-cook | oil      | 2SG-take  | 3PL-put | fire | ADV | palm fruit-DET |

‘If you want to prepare palm oil, you’ll put the palm fruits on fire’

**(2) ɔ̀b̃ɔ́ kpifúo lèbè bí**

|         |           |         |            |
|---------|-----------|---------|------------|
| ɔ̀b̃ɔ́  | kpe-kifúo | lèbè    | bí         |
| 2SG-AUX | set-fire  | 3PL-AUX | cook.COMPL |

‘You will attend to the fire until it will be cooked’

**(3) lé bí békēe ɔ̀b̃ɔ́ w̃ɔ́ p̃é sàlĩ**

|     |      |              |         |      |      |      |
|-----|------|--------------|---------|------|------|------|
| lé  | bí   | békēe        | ɔ̀b̃ɔ́  | w̃ɔ́ | p̃é  | sàlĩ |
| 3PL | cook | finish.COMPL | 2SG-AUX | 2SG  | like | wood |

‘When it is cooked, you look for a piece of wood (designed for the purpose)’

**(4) òbò yálá lèbú, óyálà lè bú békēe**

|         |        |       |                |      |              |
|---------|--------|-------|----------------|------|--------------|
| ò-bò    | yálá   | lèbú, | ó-yálà         | lèbú | békēe        |
| 2SG-AUX | remove | them  | 2SG-remove.PST | them | finish.COMPL |

‘You will take them off the fire. If you have taken them off ...’

**(5) òbò kákà lé mè là-bà yó**

|         |        |     |     |         |      |
|---------|--------|-----|-----|---------|------|
| ò-bò    | kákà   | lé  | mè  | là-bà   | yó   |
| 2SG-AUX | spread | 3SG | LOC | 3SG-AUX | cold |

‘You will spread it to cool off’

**(6) láyóòtótálí,ótóalíe békēe ko**

|          |                |               |              |      |
|----------|----------------|---------------|--------------|------|
| lá-yó    | ò-tóá-lí,      | ótóá-líe      | békēe        | ko   |
| 3SG-cold | 2SG- pound-3SG | 2SG-pound-3SG | finish.COMPL | then |

‘When it cools off, you pound it. When you pound it, then ...’

**(7) obo lilà lí òbò dídàlí pétée**

|         |           |         |           |       |
|---------|-----------|---------|-----------|-------|
| o-bo    | lilà-lí   | ò-bò    | dídà-lí   | pétée |
| 2SG-AUX | knead-3SG | 2SG-AUX | raise-3SG | ADV   |

‘You will it until it rises’

**(8) ódídàlí békēe ko òtí ní abhà**

|               |              |      |           |     |      |
|---------------|--------------|------|-----------|-----|------|
| ó-dídà-lí     | békēe        | ko   | òtí       | ní  | abhà |
| 2SG-raise-3SG | finish.COMPL | then | 2SG-scoop | DET | top  |

‘You make it rise and take off the paste on the surface’

**(8) ótíí békēe óbó dzìni**

|               |              |         |       |
|---------------|--------------|---------|-------|
| ótí-í         | békēe        | óbó     | dzìni |
| 2SG-scoop-3SG | finish.COMPL | 2SG-AUX | lift  |

‘When you scoop off the oily paste, you’ll take ...’

**(9) tódó kifúo èbè lóló**

|      |       |         |      |
|------|-------|---------|------|
| tódó | kifúo | è-bè    | lóló |
| put  | fire  | 3SG-AUX | melt |

‘Put on fire and it’ll melt’

**(10) koòdzìnì òsísè, ósísí békěe,**

ko ò-dzìnì ò-sísè, ó-sísí békěe,  
 then 2SG-lift 2SGstrain, 2SG-strain finish.COMPL  
 ‘Then you strain it. When you strained it ...’

**(11) òdzìnì tódí fúo**

ò-dzìnì tódí fúo  
 2SG-lift put fire  
 ‘You will put it on fire’

**(12) òkpìfúo ní esí èbè bí**

ò-kpe-kìfúo ní esí è-bè bí  
 2SG-put-fire DET under 3SG-AUX cook  
 ‘You will keep it on fire to cook’

**(13) ébí békěe òdzìnì bòbó**

é-bí békěe ò-dzìnì bòbó  
 3SG-cook finish.COMPL 2SG-lift oil  
 ‘When it is cooked, you’ll scoop the oil’

**(14) shí ní békù nàbhà**

shí ní békù nó àbhà  
 fetch DET pulp DET top  
 ‘Take off the oil from the surface of the pulp’

**(15) óshí békù nàbhà békěe**

ó-shí békù nò àbhà békěe  
 2SG-fetch pulp DET top finish.COMPL  
 ‘Take the oil off completely from the top of the pulp’

**(16) ólókó túdzù bùvóm**

ó-lókó túdzù bùvóm  
 2SG-take into room-LOC  
 ‘Take the oil into room’

## APPENDIX E

## TOPOLOGICAL RELATIONS PICTURE SERIES [TRPS]

The TRPS description was provided through a collaborative work of the team comprising Emmanuel (55years from Gagbefe), Mr. Dzokpo (78years from Sroe), Fo Kwame (58 from Odumase), Dora (54years from Gagbefe) and Sakora (46years from Odumase). This was done at a meeting with the team on Thursday 7<sup>th</sup> February, 2013.

The Topological Relations Picture Series are sketches intended to elicit one or more descriptions that represent what consultants feel is a natural response, in everyday speech. The following utterances are description of ten (10) of the sketches as indicated at the end of each utterance and its transcription with the numbers of the entries in the field manual.

## 1. ànòdzrà mè tàkpú kùmù kèkúkú

|                  |       |      |        |           |
|------------------|-------|------|--------|-----------|
| ànòdzrà mè       | tàkpú | kùmù | kèkúkú |           |
| human            | head  | wear | hat    |           |
| ‘Head wears hat’ |       |      |        | [TRPS 05] |

## 2. bótà atsídí èhě nó shú

|                          |         |       |     |           |
|--------------------------|---------|-------|-----|-----------|
| bótà                     | a-tsídí | èhě   | nó  | shú       |
| butter                   | 3SG-be  | knife | DET | skin      |
| ‘Butter is on the knife’ |         |       |     | [TRPS 12] |

## 3. kèkplùkpá kpàsè bági nóm

|                      |       |      |         |           |
|----------------------|-------|------|---------|-----------|
| kèkplùkpá            | kpàsè | bági | nó-m    |           |
| book                 | be    | bag  | DET-LOC |           |
| ‘Book is in the bag’ |       |      |         | [TRPS 14] |

**4. bɔlɔ̀ɔ̀ álɛ̀ kɛ̀gbù nésí**

|                               |        |        |     |       |
|-------------------------------|--------|--------|-----|-------|
| bɔlɔ̀ɔ̀                       | á-lɛ̀  | kɛ̀gbù | nó  | esí   |
| ball-DET                      | 3SG-be | chair  | DET | under |
| ‘The ball is under the chair’ |        |        |     |       |
| [TRPS 16]                     |        |        |     |       |

**5. àtɔ́ nó ákpàsè àgbégbàdzè nóm**

|                            |     |         |            |         |
|----------------------------|-----|---------|------------|---------|
| àtɔ́                       | nó  | á-kpàsè | àgbégbàdzè | nó-m    |
| apple                      | DET | 3SG-be  | tray       | DET-LOC |
| ‘The apple is on the tray’ |     |         |            |         |
| [TRPS 19]                  |     |         |            |         |

**6. bànyá fúfúlètè nê òsí shú**

|                                 |          |    |           |      |
|---------------------------------|----------|----|-----------|------|
| bà-nyá                          | fúfúlètè | nê | òsí-e     | shú  |
| 3PL-tie                         | balloon  | be | stick-DET | skin |
| ‘They tie balloon on the stick’ |          |    |           |      |
| [TRPS 20]                       |          |    |           |      |

**7. ɔ̀tséǵé kpàsè àfùkpá nóm**

|                    |       |        |         |
|--------------------|-------|--------|---------|
| ɔ̀tséǵé            | kpàsè | àfùkpá | nóm     |
| foot               | be    | shoe   | DET-LOC |
| ‘Foot in the shoe’ |       |        |         |
| [TRPS 21]          |       |        |         |

**8. kètsá pú bàpépàa**

|                          |            |               |
|--------------------------|------------|---------------|
| kètsá                    | pú         | bà-pépà-a     |
| pin                      | pierce.PST | 3PL-paper-DET |
| ‘Pin pierced the papers’ |            |               |
| [TRPS 22]                |            |               |

**9. ànúvɔ̀ zìěsí kífú nì shú**

|                                  |           |      |     |      |
|----------------------------------|-----------|------|-----|------|
| ànúvɔ̀                           | zìěsí     | kífú | nì  | shú  |
| child-DET                        | sit-under | fire | DET | skin |
| ‘The child sits beside the fire’ |           |      |     |      |
| [TRPS 38]                        |           |      |     |      |

**10. bùsí tsíǵí bhùtú nábhà**

|                                      |       |          |     |      |
|--------------------------------------|-------|----------|-----|------|
| bùsi-e                               | tsíǵí | bhùtú    | nɔ̀ | ábhà |
| tree-DET                             | be    | mountain | DET | top  |
| ‘The tree is on top of the mountain’ |       |          |     |      |
| [TRPS 65]                            |       |          |     |      |