A PHONOLOGICAL STUDY OF WA AT BAN SANTISUK
MOO 19, TAMBOL PATUNG, MAE-CHAN DISTRICT,
CHIENGRAI PROVINCE

WATTANA TANTIWUTHIPAKORN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS (LINGUISTICS)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
1998
ISBN 974-661-019-8
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Thesis
entitled

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TAMBOL PATUNG, MAE-CHAN DISTRICT, CHIENGRAI PROVINCE

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A PHONOLOGICAL STUDY OF WA AT BAN SANTISUK MOO 19, TAMBOL PATUNG, MAE-CHAN DISTRICT, CHIENGRAI PROVINCE

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Arts (Linguistics)
on

May 20, 1998

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ACKNOWLEDGEMENT

For their supports in the completion of this thesis, I wish to express my appreciation to the following people.

I would like to express my sincere and grateful thanks to Assistant Professor Dr. Sujaritlak Deepadung, my major advisor, for her valuable suggestion and comment. I appreciate her kindness in helping me to examine and rectify the contents and the English writing through all my draft. I would like to show my deep thank and acknowledgement to my committees, Assistant Professor Sukhuma-Vadee Khamhiran, Assistant Professor Payau Charoenchai and Dr. Pattiya Jimreivat, who discuss to improve my thesis. I would also thank Assc. Prof. Dr. Suwilai Premsrirat and Archan Naraset Pisitpanporn who indicated me the location of Wa people in this study.

I gratefully acknowledge all the Archans at the Institute of Language and Culture for Rural Development for providing me the most valuable experience I gained from my studying with them.

I owe my appreciation to Mrs. Nahae and Mr. Cati, my language informants, who gave me the thesis data. I also wish to express my thanks to Archan Huang and his wife, Archan Jariya, the missionaries at the church of Ban Santisuk Moo19, for arranging a residence and providing food for me. I also thank the Wa people at Ban Santisuk Moo19 who gave me a good friendship during my fieldwork.

I express my sincere appreciation to my friends, Miss Wasana Sanson, who went to the fieldwork with me at first, Mr. Itisak Urramphorn who provided transportation, guided me to the visiting places, offered a lot of convenience and sincere encouragement to me when I stayed in Chieng Rai and Mr. Suriya Sodsonggrit who gave me good friendship. My heartfelt thanks are forwarded to Mr. Amphorn Wichithkhachee who gave me a helpful hand, good suggestion, and took care of me during my fieldwork. I express my sincere appreciation to my classmates for their sincere encouragement.

My expression of deep gratitude is due to my beloved mother, Mrs Siwakki Tantiwuthipakorn, for her endless and selfless moral and financial support and all my brother and sisters who kindly give me everything that cannot be mentioned here.

There are still many more people whose names have not been mentioned here; I wish to thank everyone of them for making my completion of the thesis possible.

Wattana Tantiwuthipakorn
The main objective of this thesis is to present a phonological study of Wa spoken at Ban Santisuk Moo 19. A phonological sketch of the phonemes, syllable, phonological word and intonation group is presented in a Tagmemic theory. The data of more than 1,000 words and some sentences were analyzed to provide a Wa phonology. The data was collected by interviewing informants who use Wa language in their daily life and also live in the village.

The results of the study reveal that the phonemes are composed of 27 Consonant phonemes /p, ph, m, t, th, n, d, c, ch, k, kh, ?, v, f, s, h, m, n, r, n, r, l, l, r, r, g/, 9 single vowel phonemes : /i, e, e, w, a, u, o, o, o/, 11 diphthongs : /ia, iu, ui, wa, ai, aoi, ao, ui, ua, oj, oj/ and 2 triphthongs : /iau, uai/. There are four types of syllable : the major syllable, the minor syllable, the presyllable and the nasal syllable. The major and minor syllables can be either open or closed. The presyllable can only be an open syllable. The nasal syllable does not have the structure of a normal syllable because it is not composed of a consonant and vowel but only a consonant. The nasal syllable in this study is consisted of /m, n, n/. There are three types of word : monosyllabic word, disyllabic word and trisyllabic word. Each word-type must be stressed strongly on the final syllable of word. There are two types of intonation groups : rising contour and mid level contour. The rising contour is used for commands and questions, both content and polar questions. The mid level contour is used for affirmative, negative and replied statements.

In this study, it should be noted that the voiceless alveolar fricative [s] which is found rarely in the final position in Waic language but occurred in Milne's short collection of Wa word still is retained finally in this dialect. This final consonant /s/ corresponds to proto-Waic *s.
วิทยานิพนธ์ฉบับนี้ เป็นการศึกษาระบบเสียงของภาษา มีจุดมุ่งหมายเพื่อศึกษาระบบเสียงภาษาที่วันนี้คิดสุขุณย์ที่ 19 ที่กล่าวถึง ที่กล่าวถึง จังหวัดเชียงราย ที่เริ่มจากหน่วยเสียง พยางค์ การเปลี่ยนเสียง และทัศนงของเสียง โดยใช้ทฤษฎีแท้กิมิค (Tagmemic Theory) ในการวิจัย ผู้วิจัยได้เก็บรวบรวมข้อมูลโดยการสอบถามภาษาซึ่งใช้ภาษาไทยกว่า 1,000 คำ และประโยค จากผู้บอกภาษาทั้งหมดที่เกิดในรัฐวุ้นและพญาเขาขาดอยู่ในประเทศไทยที่ ที่กล่าวถึงสุขุณย์ที่ 19 และถึงลงในการวิจัยในชีวิตประจวบันที่ผู้กล่าวแต่ละคน และตรวจสอบข้อมูลเพื่อเปรียบเทียบผู้ที่สูญเสียภาษาหลัก

ผลจากการศึกษารูปได้ดังนี้ หน่วยเสียงประกอบด้วยหน่วยเสียงพยัญชนะ 27 หน่วยเสียงได้แก่ / p, pʰ, m, b, t, tʰ, d, c, č, k, kʰ, ?, v, f, s, h, m, ך, n, ρ, r, ŋ, ง, ฮ, l, й, r, ร, ย/ หน่วยเสียงสะกดอิม 9 หน่วยเสียงได้แก่ / i, e, a, ə, o, ɔ / หน่วยเสียงระดับ 2 ส่วน 11 หน่วยเสียงได้แก่ / ia, iu, ai, ya, a, a, o, ao, ɔi / และระดับ 3 ส่วน 2 หน่วยเสียงได้แก่ / iau, uai / พยางค์มี 4 แบบคือ พยางค์หลัก พยางค์รอง พยางค์หน้า และพยางค์หลัง โดยพยางค์หลักและพยางค์ของสามารถปรากฏเป็นได้ทั้งพยางค์ปกครองและพยางค์ปกครองเป็นพยางค์หน้าปรากฏได้ในพยางค์ปกครองเป็นย่อยเดียว และพยางค์ภาษิตซึ่งเป็นพยางค์ที่มีโครงสร้างพิเศษคือ ประกอบด้วยหน่วยเสียงพยัญชนะเพียงอย่างเดียว โดยหน่วยเสียงพยัญชนะที่สามารถปรากฏในพยางค์ภาษิตได้แก่ หน่วยเสียงพยัญชนะภาษิต / m, n, й/ ที่มีการมี 3 ประโยคคือ คำพยางค์เดียว คำพยางค์ต่าง และคำพยางค์โดยในคดีแต่ละประโยคจะมีได้รับการเมื่อยทันทีเสียงที่นิยามกับพยางค์ทุกคำของคำ ทั้งนี้เสียงมีสองลักษณะคือ ทันทีเสียงนั้น และทันทีเสียงระดับ โดยทั้งหมดเสียงขับปรากฏในประโยคคำสั่งและประโยคคำถาม ส่วนทันทีเสียงระดับ ปรากฏในประโยคปฏิสัมพันธ์ประโยคบอกเล่า

ผลการศึกษาพบว่าภาษาที่วันนี้คิดสุขุณย์ที่ 19 มีลักษณะพิเศษที่พูดได้อย่างมากในภาษาสายออทวี กล่าวคือ เสียงพยัญชนะ / s/ สามารถปรากฏในตำแหน่งท้ายคำ
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CHAPTER I

INTRODUCTION

1.1 Background of study

While staying at Ban Santikhiri Tambol Mae-Salong, Mae-Faluang district, Chieng Rai province during my field methods in Linguistics Course in March 1996, I heard from some villagers of Yunnanese village at Ban Santikhiri that there are Wa people living at Ban Santisuk Moo 19, Tambol Patung, Mae Chan district, Chieng Rai province. I got interested in this language, so I started searching for the research of the Wa to get some knowledge about the language. I found that there were just a few work on Wa in Thailand. Thus, I thought that I should definitely study the phonology of Wa language of this village.

1.2 The objective of the thesis

The objectives of the study are to describe the sound system of the Wa language spoken in Santisuk Moo 19, Tambol Patung, Mae Chan district, Chieng Rai province and to make phonological data available to scholars and others who are interested in this language.

1.3 Scope of the study

This study presents a phonological system of the Wa language spoken by Wa people at Ban Santisuk Moo 19, Tambol Patung, Mae Chan district, Chieng Rai province. It is organized as follows: the phonemes, the syllables, the phonological words and the intonation groups.

1.4 The descriptive approach

The phonological approach adopted in this study is Tagmemics, which is the study of phonology as a hierarchy of ranks. The four ranks in this study are the phonemes, the syllables, the phonological words and the intonation groups. Each rank is stated in terms of structure and function.
The example in this thesis will be written in phonemic transcription, except when the phonetic description of phonemes is being discussed, square bracket [ ] will be used for the phonetic description. When phonemic transcription needs to be distinguished: slash mark / / will be used.

1.5 General information on Wa

The Wa are people who live in the hilly region between the Salween and Mekong rivers. Wa were known as the head-hunted tribe in the past. They believed that if they could hunt human’s head, their communities would have good crops and good lives. They also had the reputation of being the fierce people and of producing opium (Lebar and other 1964:129-132). They are one of the minority groups in Burma and China. Their places are located in Wa States; the East of Burma, and in Yunnan province of China. In Yunnan province, they live in Cangyuan, Ximeng, Lancang, Gengma, Menglian, Yongde, Shuangjiang, Zhenkang, Jingdong, Menghai, Puer and other counties (Zhi Zhi 1983). At present time, some of the Wa can be found in Chiang Rai Province in Thailand. They migrated from Wa States of Burma into Thai territory about 16 years ago.

According to my informants, The Wa people are called by many names. They call themselves “ʔavuaʔ”, the Burmese call them “Lawa”, the Thai call them “Wa” and Yunnanese Chinese call them “Lacia”. They prefer to be called “ʔavuaʔ” than others. However, they like the name “Lawa” and “Wa” more than the name “Lacia”.

From the various ethnic names, the two ethonyms “Lawa” and “Wa” are nearly the same and their languages are precisely like each other (see 7.2 Remarks on Wa at Ban Santisuk Moo 19). Both names refer to people speaking Mon-Khmer language of Palaungic branch. Diffloth (1980) classified “Wa” and “Lawa” in Wa-Lawa group of Waic sub-branch in East-Palaungic of Palaungic branch (see 1.5.1 Language Affiliation). From Diffloth’s subclassification within Waic, it was noticed that “Wa” and “Lawa” showed more affinity to each other than any other languages of Palaungic. Lebar (1964:120) stated that “Young (1961:65-68), basing his remarks on firsthand experience with both Wa and Lawa, sees a definite relationship between the two, but feels there can be only a very remote Mon-Khmer influence”.

The name Wa will be used in this study because this term is name well-known in this area to the other people for a long time and because the name “ʔavuaʔ” is rather unknown to other people; it is used only by the Wa people themselves. Also, the name Lawa is used to refer to many other groups of people such as; Nyahkur, Ugong, Lua and Lawa of Mae Sariang-Hot area, South-West of Chiang Mai.
Figure 1: Location of Wa people (Adapted from Diffloth: 1980:5)
1.5.1 Language affiliation

Wa is an Austroasiatic language of the Mon-Khmer family. It belongs to the Palaungic branch (see figure 2) in the Waic sub-branch (see figure 3). The following figures show the position of Wa within the Palaungic branch and within the Waic sub-branch; according to Diffloth (1980).

Figure 2: The position of Wa in the Palaungic branch (Diffloth: 1980:13).
Figure 3: The position of Wa in the Waic sub-branch (Diffloth 1980:14)
1.5.2 Wa in Chiang Rai province

As I mentioned in 1.5 General information on Wa, there are Wa people living in Burma, China and Thailand. In Thailand they are found in Chiang Rai province.

Chiang Rai is a province in the North of Thailand. It is 829 kilometres from Bangkok. It is adjacent to Burma to the North and the West, to the South, it borders on Lampang and Phayao province. Or its Western border is Chiang Mai and Burma; and on its Eastern border is Laos.

According to the report of the information office of Chiang Rai province, there are 16 districts and 2 sub-districts in Chiang Rai, they are: Muang, Mae-Sai, Mae-Chan, Mae Fa Luang, Mae-Suai, Wieng Pao, Wieng Chai, Phan, Paa Daet, Thoeng, Chiang Khong, Chiang Saen, Wieng Kaen, Phaya Mengray, Mae Lao, Khun Tan, Wieng Chiang Rung Sub-district, Dao Luang Sub-district. There are the Wa people in Mae Fa Luang, Chiang Saen and Mae Chan districts.

According to my informants and Naraset (personal reference), the Wa people in Chiang Rai are in the following places:

1. Mae Fa Luang district

   at Ban Hauy Phung Moo 1
   at Ban Hauy Mao Moo 2
   at Ban Thoed Thai
   at Ban Santikhiri Moo 1

2. Chiang Saen district

   at Ban Mae Aep Moo 5
   at Ban Pha Tang

3. Mae Chan district

   at Ban Santisuk Moo 19
Figure 4: Map of Chieng Rai province showing all districts
Source: The report of the information office of Chieng Rai province
1.5.3 Wa at Ban Santisuk Moo 19

Geographical features and historical background

Ban Santisuk Moo 19 is in Tambol Patung, Mae Chan district, Chieng Rai province. It is about 30 kilometers from Mae Chan district office and 60 kilometers from Muang district. It is surrounded by mountains and was officially named “Santisuk Moo 19” in 1981. The name “Santisuk” stands for the happiness and peace of the village.

Ban Santisuk Moo 19 consists of Wa, Yunnanese Chinese, Lahu and Akha who have intermarried into this village. The whole village is unofficially divided into 6 groups according to the location of the village. They are:

Group 1-2 are Yunnanese Chinese
Group 3 is Wa and some Lahu
Group 4-5 are Wa and some Akha
Group 6 is Lahu

All 6 groups were ordered consecutively from group 1 at the beginning of the village to group 6 at the end of the village, from the East to the West. Wa people live condensely in group 4 and 5. The Wa at Ban Santisuk Moo 19 migrated from many villages of the Wa States: “ʔajsavaj”, “pəŋkʰriam”, “ʔœŋm’breʔ”, “pəŋkʰwək”, “vaŋlum”, “muŋsaj” and “ʔœŋʔo”. My informants came from “pəŋkʰriam” village and lived in group 4.

According to the Tribal Research Institute, there are 9 hilltribe groups in Thailand: Karen, Hmong, Lahu, Yao, Akha, Lua, Thin, Lisu and Khmu. The people of these hilltribes who settle in Thailand before the year 1980 can get the ID card, i.e., they are Thai (Lewis: 1984). According to my informants Wa at Ban Santisuk Moo 19 do not belong to any groups, so they are named “Lahu” by the officials and they can have the same privileges as the other hilltribe groups in Thailand.
Figure 5: Map of Mae Chan district showing Tambol Patung
Source: The report of the information office of Mae-Chan district
Figure 6: Map of Ban Santisuk Moo 19
(Adapted from map of Ban Santisuk Moo 19 of the healthcare center)
Population

According to the healthcare center at Ban Santisuk Moo 19, the total population of this village is about 970, consisting of 508 males, 462 females. Most of them are Wa, Yunnanese Chinese, Lahu, some are Akha who have intermarried into the village. It is difficult to tell the real number of Wa population in this village because they are named “Lahu” in the official record, i.e., there is no Wa population in the official record. However, my informants told me that there are about 28 households of Wa people at Ban Santisuk Moo 19 (4-5).

Occupation

Most of the Wa at Ban Santisuk Moo 19 work in the field and raise pigs, but some are wage-earners. They grow corn, lichee, taro, etc, and they sell them to merchants who will come to get the produce at the village. Most of the incomes comes from pig-raising. For the young generation or teenagers, most of them are wage-earners. They go to work in Bangkok and other provinces, and send back the money to their families.

Wa and their daily lives

Wa at Ban Santisuk Moo 19, like other hilltribes, are very diligent and work hard in their fields which are mountainous area. They wake up very early in the morning and prepare themselves for their daily work. The house-wives prepare food for the families. They always have breakfast together before 8.00 a.m. After having breakfast, the children go to school and their parents prepare food for lunch and start to work. Some people feed pigs and then go to work in field and forest. They also bring home a lot of firewood from the forest every day. Coming back home about 5 p.m., they take a bath and have dinner. Then, some watch television program and some will go to see the neighbors. Sunday is their holiday they will not work; however, they usually go to church in the morning and relax in the afternoon.

Dwelling

The house of these Wa people are located on the slope of a hill. It is a one-storey house. Generally, we can notice that the house of these people are made of clay. The wall of the house are made of clay mixed with rice straw, using bamboo as a frame inside. The roof is made of lalang grass. There are one or two rooms in the house. A kitchen is beside the house. (Some houses have a lavatory near the houses).

Religion

All the Wa at Ban Santisuk Moo 19 are Christians while the other hilltribes are other religion; i.e., Yunnanese Chinese are Buddhists, Akha and Lahu believe in animism. However, my informants said that in the past
they were Buddhists and believed in spirits. When Chinese missionaries came to this village and made their living situation better, they became Christians. There is only one church in this village. On Sunday, they go to church to listen to the sermon by Chinese missionaries from Taiwan.

1.6 Researchs on the Wa language

The important articles are mentioned here to provide a basic overview of the study that has been done on the Wa language.


Drage described the Wa culture in his article. He also recorded a lot of words and sentences in the Wa language. The transcription in this article is “based on the Hunterian system and Government rules for the transliteration of Burmese and Shan, modified by the author’s own attempt to record words, unpronounceable by, or unusual to these systems”(Drage 1907 : 7) with no analysis.


He presented the reconstruction of the proto-Waic sub-branch of Palaungic branch. His work was based on the six basic sources as follows:

1. Lawa
   ■ Boluang, Umphai and Ban Phae dialects from Mitani’s 1972
   ■ The Northern and Ban Saam dialects from Diffloth
   ■ Ban Pa Pae dialect from Dr. Suriya Ratanakul’s 1985
   ■ The Northern and the La?up dialects from Don Schlatter
2. Samtau from J. Harris and J. Gainey’s 1976
3. South Wa from Diffloth (J. Gainey provided Diffloth with copies of tape.)
5. Kawa in China from several pamphlets in Kawa (anon : 1958, 1959a, b, 1960,a, b, c, d, e)
6. Drage’s Wa

and also on some other minor sources (see detail in Diffloth 1980 : 8-13). The proto-Waic that he reconstructed is presented briefly below.

-Phoneme

1. Consonant phonemes

   1.1 The final consonant system of proto-Waic can be reconstructed as follows:

   *p  *t  *c  *k  *ʔ
1.2 The initial consonant system of the proto-Waic can be reconstructed as follows:

- Simple initials

*\(m\) *n *\(\eta\) *\(\eta\) 
*\(r\) *\(s\) *\(h\) 
*\(w\) *\(l\) *\(y\) 

- Initial clusters

*\(pl\) *\(pr\) *\(kl\) *\(kr\) 
*\(bl\) *\(br\) *\(gl\) *\(gr\) 

- Complex initials

A. preaspirated sonorants

*\(hm\) *\(hn\) *\(\eta\eta\) *\(h\eta\) 
*\(hw\) *\(hy\) 
*\(hl\) 
*\(hr\) 

B. preglottalised sonorants

*\(\eta m\) *\(\eta n\) *\(\eta\eta\) *\(\eta\eta\) 
*\(\eta r\) 
*\(\eta l\)
C. complex initials starting with a liquid

*\text{i}?  *\text{I}?  

2. Vowel phonemes

The vowel phonemes system of proto-Waic can be reconstructed as follows:

*\text{I}  *\text{e}  *\text{a}  *\text{d}  *\text{d}  *\text{e}  *\text{o}  *\text{e}  *\text{E}


They proposed the consonant reconstruction of the Wa language by comparing the three dialects of the Wa. The three dialects for the reconstruction are A-wa, Parauk and Wa. They stated that the important characteristics of the three dialects concerned gave the following features to the ancient Wa: namely,

A-Wa composed of plentiful consonants, no tense versus lax, fewer vowels.

Parauk consisted of plentiful consonants, tense versus lax exists, a lot of vowels.

Wa consisted of fewer consonants, tense versus lax exists, a lot of vowels.

Consequently, he concluded that the features of Ancient Wa should consist of considerably more consonants, no tense versus lax in its vocalism and fewer vowels.


They proposed the phonology of Lawa spoken at Ban Papae, Amphoe Mae-Sariang, MaeHongson province. The Lawa phonology presented is as follows:

-The phonemes: there are consonant and vowel phonemes.

 There are 37 consonant phonemes: /p, p\text{h}, b, m\text{b}, t, t\text{h}, d, c, c\text{h}, j, n, c, ʔ, k, ʔ\text{g}, g, m, h, n, h, n, d, n, n, h, n, h, ʔ, ʔ, f, v, s, ʔ, r, h, l, l\text{h}, l\text{h} / all of them can occur initially; 10 consonant phonemes can occur finally: /p, t, c, k, ʔ, ʔ, h, m, n, ʔ, ʔ/ and 2 consonant phonemes can be consonant clusters: /l, j/.
There are 10 simple vowels: /i, e, ɛ, i, w, a, u, o, ɔ/; 14 complex vowels: /iə, iɛ, uə, ɔi, ɔi, əə, ai, ao, ui, ɔi, oi, ɔɛ/ and 1 triphthong: /æiə/.

- The syllable:

There are 2 types of syllable in this dialect; they are open syllables and closed syllables. The structure of an open syllable is c(c)v(v)(v). The structure of a closed syllable is c(c)v(v)v.c.

- The stress group:

There are 2 types of word in this dialect: monosyllabic words and disyllabic words. Each word must be stressed. There are also three types of stress: stressed syllable, weakly stressed syllable and unstressed syllable.

- Intonation

There are 2 types of intonation in this dialect: rising intonation and mid-level intonation. The intonation in this dialect is phonemic.
CHAPTER II

METHODOLOGY

The study has been designed as a phonological study. The method of studying is to interview the Wa people who use Wa language in their daily lives. The methodology of this study can be divided into steps as follows:

2.1 Preparation

2.1.1 Surveying the research area and all the written records

I surveyed the Chiang Rai province with special emphasis on Tambol Patung; i.e., about its geography and history from the report of the information office at Chiang Rai province. Then, I started investigating published and unpublished documents on the Wa language to get some general ideas such as language, culture, history and etc. in order to make myself acquainted with the people and the language. After that, on November 18-24, 1996, my friends and I went to Ban Santisuk Moo 19 to make our first visit of Wa people. There, I were informed that there were Wa people lived in group 4-5 (see sec. 1.5.3). I found them, then I started to elicit some preliminary data by using 300 basic vocabularies of South-East Asia wordlist.

2.1.2 Selecting the informants

To choose native speakers of Wa as informants, the criteria were set up as follows:

1. The informants should be Wa migrated from ‘paŋkʰriam’ village of Wa States and lived at Ban Santisuk Moo 19 in group 4. As mentioned earlier, Ban Santisuk Moo 19 at the present time is inhabited by Wa people from different villages of Wa State. There consequently is a slightly different way of speaking but they can communicate intelligibly. Most of the Wa people at Ban Santisuk Moo19 migrated from ‘paŋkʰriam’ village, about 9 households, so I decided to choose Wa people migrated from ‘paŋkʰriam’ village as my informants.

2. The informants must have a complete set of articulators so that they can pronounce the sounds clearly and fluently.
3. The informants must know the Thai language, but must use the Wa language in their daily life.
4. The informants must have enough time to work with me.
5. The informants age must be over 25 so they have sufficient experience in their own language.

2.1.3 Selecting the lists of data for interview

The sample of background knowledge questions was based on the following materials:
1. Basic vocabularies of South-East Asia wordlist.
2. Aiding materials such as pictures or real objects.
3. Outline of some basic sentences.

The words that were collected from the above resulted in more than 1,000 words. I analyzed all words to get a rough sketch of its language as a phonological hierarchy. The four ranks in this study are the phoneme, the syllable, the phonological word and the intonation group.

2.2 Field work

2.2.1 The data collection

Collecting data. On the 13th of December 1996, I again went to Ban Santisuk Moo 19 and chose the language helpers (see sec.2.2.2) for interviewing data. It took me one month staying there collecting data. To elicit data, I used the following procedures:

i I prepared to interview the language helpers, both Thai vocabularies and aiding materials such as pictures or real objects.

ii I requested them to pronounce each Wa word at least three times or more for difficult words. Each word would then be pronounced by me till my accent was accepted by my informants then I transcribed them immediately in phonetic symbols based on those of the International Phonetic Alphabets (I.P.A.).

iii I rechecked the transcribed words with my informants by pronouncing them.

iv I recorded all data on the tape recorder.

The medium used during the interview was standard Thai and Yunnanese Chinese. From the 2nd of February 1997 to the 8th of March 1997, I collected more data. I rechecked all words, which had been categorized by rhyming according to the vowels and final consonants, and tape-recorded all of them.
2.2.2 The source of data

The data used in this study were collected at Ban Santisuk Moo 19, Tambol Patueng, Mae Chan district, Chieng Rai province and were based on the speech of:

1. Mrs. Nahae, my main informant. She is 39 years old. She was born and got married with a Wa man at ‘pank³riam³’ village of Wa States before migrating into Thailand about 16 years ago. At first, she stayed at Ban Hua-Maekham for a few years, after that she and her family moved to Ban Santisuk Moo 19(4). She is a housewife and also works in the field. She can speak Thai a little but cannot read or write Thai. She speaks Yunnanese Chinese fluently.

2. Mr. Cati, the assistant informant. He is 29 years old. He also was born at ‘pank³riam³’ village and migrated to Thailand at the same time as Mrs. Nahae. He just got married with an Akha woman during my second visit to this village. He used to work in Bangkok for one year. He told me that he would not go to work again in Bangkok. Now, he works in the field growing corn and lychee. He did not go to school so formerly he can neither read nor write Thai; however, at present time he started to study both reading and writing Thai at the church (there is a Thai missionary who got married with a Taiwan missionary, she teaches Thai at the church). He can speak both Thai and Yunnanese Chinese. I rechecked the collected data with him.

2.2.3 The recording of data

I recorded all the prepared wordlist in the field notebook and also on cassettes. The data were transcribed immediately in phonetic symbols based on those of the International Phonetic Alphabets (I.P.A.) after interviewing and being accepted by my informants

2.3 The data analysis

The analysis of the data follows the phonological hierarchy of the Tagmemic school, which has set up four levels: the intonation group, the phonological word, the syllable and the phonemes (as in figure 7). The units of each rank have a structure stated in terms of units of the rank below (except for the lowest, the phoneme) and have function in the structure of the rank above (except for the highest, the intonation group). In this study the phonology will be described from the lowest rank to the highest rank.
Figure 7: The phonological hierarchy
CHAPTER III

PHONEMES

3.1 General definition

The phoneme rank is defined as the rank whose units function in the syllable. It is the lowest rank of the phonological hierarchy so it has no statable structure, but its phonetic form in various contexts may be described.

According to their functions in the syllable, the phonemes of Wa at Ban Santisuk Moo19 are divided into two classes: consonants and vowels. There is no tone phoneme in this language, but there are non-contrastive word pitch that can be described in phonetic forms (see 5.3).

3.2 Consonant phonemes

Consonant phonemes usually function as syllable nucleus in the nasal syllable and as syllable periphery in the presyllable, minor syllable and major syllable. There are 27 consonant phonemes of Wa spoken at Ban Santisuk Moo19: /p, pʰ, m̥b, t, tʰ, n̥d, c, cʰ, k, kʰ, ?, v, f, s, h, m, m̥, n̥, γ̥, n̥, ɲ̥, ɲ̈, l̥, ḷ, r, ŋ, j/.

These consonants can be divided into 3 sub-classes in terms of their distribution in the syllables:

3.2.1 Consonant sub-class 1 (C1)

This consonant sub-class I functions in syllable initial position and consists of all the consonants.

Ex.

/pɔn/    ['pon]       “four”
/pʰus/    ['pʰuːs]     “to throw”
/tɛʔ/     ['tɛʔ]       “hand”
/tʰem/    ['tʰem]      “short”
/kap/     ['kɑp̥~'k̥ɑp̥] “chin”
/kʰic/    ['kʰiːc̥~'kʰiːc̥] “shy”
/cos/     ['c̥ɔs]       “to tamp”
3.2.2 Consonant sub-class 2 (C2)

This consonant sub-class 2 functions in syllable final position and consists of /p, t, c, k, ?, s, h, m, n, p, ŋ/.

Ex.

/ŋkʰep/ [ŋ.kʰ̚ep' ~ ŋ.ʃ.kʰ̚ep'] "scissors"

/ʔot/ [ʔ.ʔt' ~ ʔ.ʔt'] "to stay"

/tek'/ [t.ɛc' ~ t.ɛc'] "debt"

/vuak/ [vuak' ~ vuak'] "worm"

/loʔ/ [l.ʔʔ] "to be broken, to be lost"

/vis/ [v.iʔs] "to break"

/"doh/ ["d.ʔh] "to leak"

/ hàm/ [h.ʔm] "to take a bath"
/ɲin/  ['ɲin]  "one kind of ant"
/sɪŋ/  ['sɪŋ]  "cooked"
/tɔŋ/  ['tɔŋ]  "to grill"

3.2.3 Consonant sub-class 3 (C3)

This consonant sub-class 3 functions as the second member of consonant clusters in syllable initial position and consist of /l, r/. The consonants that can precede /l, r/ are /p, pʰ, k, kʰ, m'b/.

Ex.
/prus/  ['prus]  "flower"
/ploŋ/  ['ploŋ]  "lalang grass"
/pʰres/  ['pʰres]  "spear"
/pʰluŋ/  ['pʰluŋ]  "necklace"
/kroŋ/  ['krɔŋ]  "dry"
/kloŋ/  ['kloŋ]  "brook"
/kʰrit/  ['kʰrit' ~ 'kʰɨt']  "to grate"
/kʰlap/  ['kʰɨp' ~ 'kʰɨp']  "to clap"
/mblɔŋ/  ['mblɔŋ]  "tube"
/mbɾɔŋ/  ['mɓɾɔŋ]  "horse"
3.3 The consonant phoneme chart

Wa spoken at Ban Santisuk Moo 19 has 27 consonant phonemes as shown in the following table:

Table 1: The consonant phoneme chart of Wa spoken at Ban Santisuk Moo 19

<table>
<thead>
<tr>
<th>Position of Articulation</th>
<th>bilabial</th>
<th>labio-Dental</th>
<th>alveolar</th>
<th>palatal</th>
<th>velar</th>
<th>glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pʰ</td>
<td>tʰ</td>
<td>cʰ</td>
<td>kʰ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mʰ</td>
<td>nᵈ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>f</td>
<td>s</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td>j</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>m</td>
<td>n</td>
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<td></td>
</tr>
<tr>
<td>Lateral</td>
<td>l</td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trill</td>
<td>r</td>
<td>j</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-vowel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The initial consonants: /pʰ, tʰ, cʰ, kʰ, mʰ, nᵈ, m, n, j, l, r/ are treated as units (c) not sequences (cc) because there is no initial cluster(ccc) according to the basic syllable patterns [c(c)v(v)(c)].

3.3.1 Formational statement of consonants

All consonant phonemes in Wa are produced with pulmonic egressive airstream mechanism.

/p/ a voiceless unaspirated bilabial stop. It has three allophones: [p], [p’] and [p”].

[p] is a voiceless unaspirated bilabial stop. It occurs syllable initially.

[p’] a voiceless slightly aspirated bilabial stop occurs syllable finally in free variation with [p’] a voiceless unreleased bilabial stop.
Ex.
/pu/  ['pù:]  “betel leaves”
/pac/  ['pâc’ - ‘pâc’]  “to scrape”
/niap/  ['nǐap’ - ‘nǐap’]  “to fold the trouser’s leg”
/siap/  ['sǐap’ - ‘sǐap’]  “to repair”

/pʰ/ a voiceless aspirated bilabial stop. It is realised as [pʰ] a voiceless aspirated bilabial stop and occurs syllable initially.

Ex.
/pʰom/  ['pʰom]  “to pity”
/pʰus/  ['pʰuʃ]  “to throw”
/pʰiam/  ['pʰiam]  “to chew”

/mb/ a voiced bilabial prenasalized stop. It is realised as [ᵐb] a voiced bilabial prenasalized stop and occurs syllable initially.

Ex.
/mbe/  ['ᵐbeːr]  “bed”
/mbiu/  ['ᵐbiuɻ]  “gourd”
/mbron/  ['ᵐbrɔn]  “horse”

/t/ a voiceless unaspirated alveolar stop. It has three allophones: [t], [t’] and [t’].
[t] is a voiceless unaspirated alveolar stop. It occurs syllable initially.
[t’] a voiceless slightly aspirated alveolar stop occurs syllable finally in free variation with [t’] a voiceless unreleased alveolar stop.

Ex.
/tis/  ['tîs]  “mushroom”
/taiʔ/  ['tâiʔ]  “vegetable”
/fiat /  ['hwfət’ - ‘fiət’]  “to punish”
/ʔuat /  ['ʔuət’ - ‘ʔuət’]  “to wipe one’s face”
/tʰ/ a voiceless aspirated alveolar stop. It is realised as [tʰ] a voiceless aspirated alveolar stop and occurs syllable initially.

Ex.
/tʰa/ [ˈtʰæː] “arrow”
/tʰom/ [ˈtʰɔm] “short”
/tʰaŋ/ [ˈtʰɔŋ] “bag”

/ⁿd/ a voiced alveolar prenasalized stop. It is realised as [ⁿd] a voiced alveolar prenasalized stop and occurs syllable initially.

Ex.
/ⁿdon/ [ˈⁿdɔn] “head”
/ⁿdok/ [ⁿdöm’ ~ ᵃⁿdöm’] “to recite”
/ⁿdap/ [ⁿdām’ ~ ᵃⁿdām’] “flat”

/c/ a voiceless unaspirated palatal stop. It has three allophones: [c], [c’] and [c’’].

[c] is a voiceless unaspirated palatal stop. It occurs syllable initially.

[c’] a voiceless slightly aspirated palatal stop occurs syllable finally in free variation with [c’’] a voiceless unreleased palatal stop.

Ex.
/cias/ [ˈcias] “to tear”
/cɔp/ [ˈcɔp’ ~ ˈcɔp’] “to wear”
/kʰoc/ [kʰo ’kʰo’] “to wash one’s face”
/kʰuc/ [kʰu ’kʰu’] “to extract”

/cʰ/ a voiceless aspirated palatal stop. It is realised as [cʰ] a voiceless aspirated palatal stop and occurs syllable initially.

Ex.
/cʰic/ [ˈcʰi ’cʰi’] “to trample”
/cʰon/ [ˈcʰoŋ] “classifier of clothes”
/cʰaoʔ/ [ˈcʰəoʔ] “light”
/k/ a voiceless unaspirated velar stop. It has three allophones: [k], [kʰ] and [kʰ].

[k] is a voiceless unaspirated velar stop. It occurs syllable initially.

[kʰ] a voiceless slightly aspirated velar stop occurs syllable finally in free variation with [kʰ] a voiceless unreleased velar stop.

Ex.
/kɔk/ ['kɔk' ~ 'kɔk'] “glass”
/kak/ ['kɑk' ~ 'kɑk'] “branch”
/kɔ/ ['kɔː] “wind”

/kʰ/ a voiceless aspirated velar stop. It is realised as [kʰ] a voiceless aspirated velar stop and occurs syllable initially.

Ex.
/kʰom/ ['kʰom] “tight”
/kʰip/ ['kʰɪp' ~ 'kʰɪp'] “shoes”
/kʰis/ ['kʰɪs] “to cut slightly”

/ʔ/ a glottal stop. It is realised as [ʔ] a glottal stop. It occurs syllable initially and finally.

Ex.
/ʔia/ ['ʔiə] “chicken”
/ʔak/ ['ʔɑːk' ~ 'ʔɑːk'] “bow”
/veʔ/ ['vɛʔ] “left”

/v/ a voiced labio-dental fricative. It is realised as [v] a voiced labio-dental fricative and occurs syllable initially.

Ex.
/veh/ ['vɛh] “to chip, to be broken (teeth)"
/vian/ ['vian] “to bind, a bundle”
/vi/ ['vɪː] “to borrow”
/f/ is a voiceless labio-dental fricative. It is realised as [f] a voiceless labio-dental fricative which occurs in free variation initially with [hw] a voiceless bilabial semi-vowel.

Ex.

/fə?/  [ hwəʔ ~ fəʔ ]  “monkey”
/fə/  [ hwə ~ fə ]  “naked”
/fe/  [ hwə ~ fə ]  “to wander”

/s/ a voiceless alveolar fricative. It is realised as [s] a voiceless alveolar fricative. It occurs syllable initially and finally.

Ex.

/saiʔ/  [ səʔ ]  “sick”
/səm/  [ səm ]  “to eat”
/pis/  [ pləs ]  “to swipe”
/?əris/  [ ?ə.ɾəs ~ ʔə.ɾəs ]  “tortoise”

/h/ a voiceless glottal fricative. It is realised as [h] a voiceless glottal fricative. It occurs syllable initially and finally.

Ex.

/hac/  [ ḥac ~ ḥac ]  “hair”
/hon/  [ hon ]  “a lot of”
/koh/  [ kəh ]  “to collect”
/leh/  [ leh ]  “the little finger”

/m/ a voiced bilabial nasal. It has two allophones: [m] and [ŋ]
[m] is a voiced bilabial nasal. It occurs syllable initially and finally.
[ŋ] is a voiced bilabial syllabic nasal. It occupies the first syllable of disyllabic word and functions as a syllable.

Ex.

/mus/  [ mʊs ]  “to love”
/məc/  [ məc ~ məc ]  “ant”
/ŋəm/  [ ŋəm ]  “to wait”
/ʂiam/ ['ʂiam] “Shan people”
/mpʰai?/ [m̥.pʰai?] “charcoal brazier”
/mpʰla:/ [m̥.pʰla:] “to untie hair”

/ŋ/ a voiceless bilabial nasal. It is realised as [hm] a voiceless bilabial nasal and occurs syllable initially.

Ex.
/ŋam/ ['hmam] “garbage”
/ŋu/ ['hmɯ:] “to keep in mouth”
/ŋoŋ/ ['hmʊŋ] “to listen”

/n/ a voiced alveolar nasal. It has two allophones: [n] and [ŋ]
[n] is a voiced alveolar nasal. It occurs syllable initially and finally.
[ŋ] is a voiced alveolar syllabic nasal. It occupies the first syllable of disyllabic word and functions as a syllable.

Ex.
/nəm/ ['nʊm] “year”
/nu/ ['nɯ:] “difficult”
/tʰun/ [tʰʊn] “to be relative”
/ŋtʰoŋ/ [ŋtʰoŋ] “jail”
/ŋcʰuac/ [ŋtʰuac’ - ŋtʰuac’] “to whistle”

/p/ a voiceless alveolar nasal. It is realised as [hn] a voiceless alveolar nasal and occurs syllable initially.

Ex.
/pɛŋ/ ['hneŋ] “mother’s friend”
/pam/ ['hnam] “blood”

/n/ a voiced palatal nasal. It is realised as [n] a voiced palatal nasal. It occurs syllable initially and finally.

Ex.
/ŋ/ a voiced velar nasal has two allophones: [ŋ] and [ŋ̊]

[ŋ] is a voiced velar nasal. It occurs syllable initially and finally.

[ŋ̊] is a voiced velar syllabic nasal. It occupies the first syllable of disyllabic word and functions as a syllable.

Ex.
/ŋen/ ['ŋen] “short”
/ŋo/ ['ŋo:] “fire”
/toŋ/ ['toŋ] “to grill”
/ŋkon/ [ŋ̊'kön] “thumb”
/ŋkian/ [ŋ̊'kian] “finger”

/g/ a voiceless velar nasal. It is realised as [ŋ̊] a voiceless velar nasal and occurs syllable initially.

Ex.
/ŋe/ ['ŋe] “pregnant”
/ŋia/ ['ŋia] “dog’s mother”
/ŋem/ ['ŋem] “nail”

/l/ a voiced alveolar lateral. It is realised as [l̊] a voiced alveolar lateral. It occurs syllable initially and as the second element of the consonant cluster.

Ex.
/ləŋ/ ['ləŋ] “long”
/ℓet/ ['lėt’ - ‘lėt’] “to lick”
/luai/ ['luai] “three”
/kʰlɔk/ [kʰlɔk’ - ’kʰlɔk’] “dimple”
/kʰlæp/ [kʰlæp’ - ’kʰlæp’] “to clap”
/ʃ/ a voiceless alveolar lateral. It is realised as [hl] a voiceless alveolar lateral and occurs syllable initially.

Ex
/ʃat/ ['hlât' - 'hlât']
/ʃoŋ/ ['hloŋ']
"to fear"
"tasteless rice"

/r/ a voiced alveolar trill. It is realised as [r] a voiced alveolar trill. It occurs syllable initially and as the second element of the consonant cluster.

Ex.
/ruc/ ['rûc' - 'rûc']
/ru/ ['rû:]
/praoʔ/ ['prâoʔ']
/pʰroʔ/ ['pʰrôʔ']
"black bird"
"the top of leaves"
"to lie on one side"
"blanket"

/j/ a voiceless alveolar trill. It is realised as [hr] a voiceless alveolar trill and occurs syllable initially.

Ex.
/ruc/ ['hrûc' - 'hrûc']
/ru/ ['hrû:]
/raŋ/ ['hrâŋ']
"to draw ,to pull"
"yellow"
"teeth"

/j/ a voiced palatal semi-vowel. It is realised as [j] a voiced palatal semi-vowel and occurs syllable initially.

To conform the basic syllable pattern, the phoneme /j/ is interpreted as a consonant phoneme /ʃj/ in the syllable-initial position but in the syllable-final position, it is interpreted as a vowel phoneme /i/.  

Ex.
/jum/ ['jum']
/jap/ ['jâp' - 'jâp']
"to cry"
"classifier of clothes"
3.3.2 Consonant phoneme contrast

All consonants described above are phonemically contrastive in Wa language. The suspect pairs of consonants which are contrastive are shown below together with some examples:

\[ /p/ \quad – \quad /p^h/ \]
\[ /\text{pre}?/ \quad \text{“son”} \]
\[ /p^h\text{re}?/ \quad \text{“by one self”} \]
\[ /\text{pu}/ \quad \text{“betel leaves”} \]
\[ /p^h\text{u}/ \quad \text{“thick”} \]

\[ /p/ \quad – \quad /m^b/ \]
\[ /\text{prom}/ \quad \text{“twin”} \]
\[ /m^\text{brom}/ \quad \text{“a water leech”} \]
\[ /\text{piu}/ \quad \text{“to hang”} \]
\[ /m^\text{biu}/ \quad \text{“gourd”} \]

\[ /p^h/ \quad – \quad /m^b/ \]
\[ /p^h\text{ip}/ \quad \text{“white”} \]
\[ /m^\text{bri}p/ \quad \text{“one kind of bird”} \]

\[ /m^b/ \quad – \quad /m/ \]
\[ /m^\text{bai}/ \quad \text{“bored”} \]
\[ /\text{mai}/ \quad \text{“a nevus”} \]

\[ /t/ \quad \quad /t^h/ \]
\[ /\text{t}\eta/ \quad \text{“to fry”} \]
\[ /t^h\eta/ \quad \text{“bag”} \]
\[ /\text{tuk}/ \quad \text{“to lead by hand”} \]
\[ /t^h\text{uk}/ \quad \text{“to knock”} \]
\[ /\text{tom}/ \quad \text{“right”} \]
\[ /t^h\text{om}/ \quad \text{“to make a bed”} \]

\[ /\text{v}/ \quad \\quad /\text{v}^\text{d}/ \]
<table>
<thead>
<tr>
<th>Sound</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/toh/</td>
<td>“sunlight”</td>
</tr>
<tr>
<td>/&quot;doh/</td>
<td>“to leak”</td>
</tr>
<tr>
<td>/tus/</td>
<td>“to pick with the beak”</td>
</tr>
<tr>
<td>/&quot;dus/</td>
<td>“part of gun”</td>
</tr>
<tr>
<td>/tʰ/ - /&quot;d/</td>
<td>“bag”</td>
</tr>
<tr>
<td>/tʰοŋ/</td>
<td>“valley”</td>
</tr>
<tr>
<td>/&quot;dοŋ/</td>
<td>“to make a bed”</td>
</tr>
<tr>
<td>/tʰom/</td>
<td>“to steep”</td>
</tr>
<tr>
<td>/&quot;d/ - /n/</td>
<td>“vegetable’s root”</td>
</tr>
<tr>
<td>/&quot;dοŋ/</td>
<td>“in”</td>
</tr>
<tr>
<td>/noŋ/</td>
<td></td>
</tr>
<tr>
<td>/&quot;d/ - /s/</td>
<td>“to recite”</td>
</tr>
<tr>
<td>/&quot;dok/</td>
<td>“seed”</td>
</tr>
<tr>
<td>/sok/</td>
<td></td>
</tr>
<tr>
<td>/&quot;d/ - /l/</td>
<td>“cookies”</td>
</tr>
<tr>
<td>/&quot;dip/</td>
<td>“West”</td>
</tr>
<tr>
<td>/lip/</td>
<td></td>
</tr>
<tr>
<td>/c/ - /cʰ/</td>
<td>“umbrella”</td>
</tr>
<tr>
<td>/coŋ/</td>
<td>“classier of clothes”</td>
</tr>
<tr>
<td>/cʰoŋ/</td>
<td>“flesh(baby language)”</td>
</tr>
<tr>
<td>/ciʔ/</td>
<td>“to hew”</td>
</tr>
<tr>
<td>/cʰiʔ/</td>
<td></td>
</tr>
<tr>
<td>/c/ - /ʔ/</td>
<td>“hair”</td>
</tr>
<tr>
<td>/haʔ/</td>
<td>“to burn”</td>
</tr>
<tr>
<td>/k/ - /kʰ/</td>
<td>“hot”</td>
</tr>
<tr>
<td>/koc/</td>
<td>“to wash one’s face”</td>
</tr>
<tr>
<td>/kʰoc/</td>
<td></td>
</tr>
</tbody>
</table>
/kuat /
/kʰuat/

/kʰ/ - /h/ /ʔ/
/kʰaoʔ/ /haoʔ/ /ʔaoʔ/

/f/ - /v/ /fe/
/ve/
/faʔ/ /veʔ/

/f/ - /h/ /ŋ/
/fiaʔ/ /hiaʔ/ /ŋiaʔ/

/n/ - /ŋ/ /no/
/ŋo/ /nom/ /ŋom/ 

/m/ - /n/ /ɲ/ /ŋ/
/moŋ/ /noŋ/ /ɲoŋ/ /ŋoŋ/ 

/p/ - /j/ /pum/
/pum/
<table>
<thead>
<tr>
<th>Sound</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/nu/</td>
<td>“one kind of bird”</td>
</tr>
<tr>
<td>/ju/</td>
<td>“to glissade”</td>
</tr>
<tr>
<td>/m/</td>
<td>“to keep in mouth”</td>
</tr>
<tr>
<td>/mu/</td>
<td>“money”</td>
</tr>
<tr>
<td>/mq/</td>
<td>“to cook in bamboo”</td>
</tr>
<tr>
<td>/mŋ/</td>
<td>“to listen”</td>
</tr>
<tr>
<td>/h/</td>
<td>“insect”</td>
</tr>
<tr>
<td>/n/</td>
<td>“year”</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>“urine”</td>
</tr>
<tr>
<td>/ŋam/</td>
<td>“blood”</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>“pregnant”</td>
</tr>
<tr>
<td>/ŋe/</td>
<td>“to cut in one piece”</td>
</tr>
<tr>
<td>/ŋe/</td>
<td>“fermented bamboo shoot”</td>
</tr>
<tr>
<td>/ŋem/</td>
<td>“nail”</td>
</tr>
<tr>
<td>/l/</td>
<td>“to shatter”</td>
</tr>
<tr>
<td>/lo?/</td>
<td>“rain”</td>
</tr>
<tr>
<td>/lo?/</td>
<td>“the seventh son”</td>
</tr>
<tr>
<td>/lok/</td>
<td>“boiled”</td>
</tr>
<tr>
<td>/t/</td>
<td>“the top of leaves”</td>
</tr>
<tr>
<td>/ru/</td>
<td>“yellow”</td>
</tr>
<tr>
<td>/ru/</td>
<td>“black bird”</td>
</tr>
<tr>
<td>/ruc/</td>
<td>“to draw, to pull”</td>
</tr>
</tbody>
</table>
/lui/  "to swim"
/rui/  "a fly"

/p/  /m/
/ŋup/  "morning"
/ŋum/  "to sit"
/top/  "one kind of measurement"
/tom/  "right"

/t/  /s/
/chut/  "to pick garbage"
/chus/  "one kind of ant"
/prut/  "a fin"
/prus/  "flower"

/c/  /k/
/khuc/  "to extract"
/khuk/  "to hang basket on head"

/c/  /ŋ/  /ŋ/
/pac/  "to scratch."
/paj/  "to blow"
/pañ/  "stock"

/k/  /ʔ/
/tok/  "to bite(insect)"
/toʔ/  "to give"

/k/  /h/
/thukan/  "to powder"
/thuah/  "supine"
/hok/  "to expose(to the weather)"
/hon/  "insect"

/ʔ/  -  /h/
/vuθaʔ/  "to take"
/vuθah/  "wide"

/m/  -  /n/
/ʔom/  "to brood"
/ʔɔn/  "to wear"

/p/  -  /n/
/kren/  "a paramour"
/kren/  "acidulous"

/m/  -  /ŋ/
/lam/  "to close (flower)"
/logo/  "coffin"

/n/  -  /ŋ/
/kian/  "pigtail"
/kiaŋ/  "tamarind"
/paŋ/  "to arrive"
/paŋ/  "stock"

/l/  -  /ɾ/
/klep/  "to carry on the shoulder"
/krep/  "East"
/plak/  "half, classifier of thing"
/prak/  "to lean"
3.4 Vowel phonemes

Vowel phonemes usually function as syllable nucleus in the presyllable, minor syllable and major syllable. There are 9 single vowel phonemes: /i, e, ø, a, ɔ, o, u, uə, ø/; 11 diphthongs: /ia, iu, uii, wa, ɔi, ai, ao, ui, ua, oi, ɔi/ and 2 triphthongs /iau, uai/.

These vowel phonemes can be divided according to their occurrences into 3 sub-classes:

3.4.1 Vowel sub-class 1 (V1)

This vowel sub-class 1 functions as a single vowel and consists of /i, e, ø, u, a, a, u, o, ɔ/.

Ex.
/pʰi/ ['pʰi:] “to forget”
/ŋe/ ['ŋe:] “to cut into one piece”
/pe/ ['pe:] “cunt”
/mu/ ['mu:] “money”
/pa/ ['pə:] “orange (color)”
/ra/ ['ra:] “two”
/pʰu/ ['pʰu:] “thick”
/to/ ['to:] “to run”
/ŋɔ/ ['ŋɔ:] “angry”

3.4.2 Vowel sub-class 2 (V2)

This vowel sub-class 2 functions as the second member of the diphthongs and consists of /i, a, u, o/.

Ex.
/mui/ ['mu:i] “cow”
/jua/ ['jua:] “easy”
/nui/ ['nui:] “flashlight”
/kao/ ['kəo] “ten”

3.4.3 Vowel sub-class 3 (V3)

This vowel sub-class 3 functions as the third member of the triphthongs and consists of /i, u/.

Ex.
/mpʰiau/ [npʰi:au] “face”
/luai/  ['lu:ai]  "three"
/kuai/  ['ku:ai]  "one kind of rice"
/mpʰiau/  [ŋʲ.'pʰiau]  "face"

3.5 The vowel phoneme chart

WA spoken at Ban Santisuk Moo 19 has 9 single vowel phonemes, 11 diphthongs and 2 triphthongs as shown in the following table:

Table 2: The vowel phoneme chart of Wa at Santisuk Moo 19

<table>
<thead>
<tr>
<th>Parts of tongue</th>
<th>front</th>
<th>central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of Lips</td>
<td></td>
<td>unrounded</td>
<td>Rounded</td>
</tr>
<tr>
<td>Levels of tongue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>w</td>
<td>u</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>Low</td>
<td>e</td>
<td>a</td>
<td>e</td>
</tr>
</tbody>
</table>

Table 3: The diphthongs and triphthongs chart of Wa at Ban Santisuk Moo 19

<table>
<thead>
<tr>
<th>Parts of tongue</th>
<th>front</th>
<th>central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of Lips</td>
<td></td>
<td>unrounded</td>
<td>Rounded</td>
</tr>
<tr>
<td>Levels of tongue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>ia</td>
<td>iu</td>
<td>ui</td>
</tr>
<tr>
<td></td>
<td>iau</td>
<td>ua</td>
<td>uai</td>
</tr>
<tr>
<td>Mid</td>
<td>ai</td>
<td>o</td>
<td>oi</td>
</tr>
<tr>
<td>Low</td>
<td>ai</td>
<td>ao</td>
<td>e</td>
</tr>
</tbody>
</table>
3.5.1 Formational statements of vowels

In this language, there are no phonemic contrasts between short and long vowels. The long vowels occur in open syllables except in presyllables, and the short vowels occur in closed syllables; therefore, the vowel length is predictable.

- Single vowels

/ɪ/ a high front unrounded vowel. It is realised as [i] a high front unrounded vowel. It occurs in open syllables and before all the final consonants except / k /

Ex.

/mbrero/ ['mбрэ:] "dirty"
/sɪp/ ['sɪp' ~ 'sɪp'] "to nibble"
/kʰrɪt/ ['kʰrɛt' ~ 'kʰrɛt'] "to grate"
/cʰic/ ['cʰɪs' ~ 'cʰɪs'] "to trample"
/tʰiʔ/ ['tʰiʔ] "one"
/sim/ ['sɪm] "bird"
/pʰin/ ['pʰin] "white"
/tʰin/ ['tʰin] "big"
/vih/ ['vih] "bowels"
/kris/ ['kɾis] "lion"

/e/ a mid front unrounded vowel. It is realised as [e] a mid front unrounded vowel. It occurs in open syllables and before all the final consonants.

Ex.

/fe/ ['fэ:] "to wander"
/ŋkrep/ ['ŋ.krep' ~ 'ŋ.krep'] "scissors"
/tʰet/ ['tʰet' ~ 'tʰet'] "to flip"
/vec/ ['vэc' ~ 'vэc'] "liver"
/tuttek/ ['tут.тэk' ~ 'tут.тэk'] "to squash"
/seʔ/ ['sэʔ] "louse"
/?em/ ['ʔem] "unripe"
/kren/ ['kren] "acidulous"
/kən/ [ˈkən] “hundred”
/pailəŋ/ [ˈpail.əŋ] “circle”
/kleə/ [ˈkleə] “to feel stiff”
/ləs/ [ˈləs] “six”

/ɛ/ a low front unrounded vowel. It is realised as [ɛ] a low front unrounded vowel. It occurs in open syllables and before the final consonants /t, ʔ, h, m/.

Ex.
/te/ [ˈtɛː] “sweet”
/katet/ [kə.'tɛt’ ∼ kə.'tɛt’] “sound of chicken”
/?em/ [ˈʔem] “rice husk”
/pleh/ [ˈplɛh] “red”
/neʔ/ [ˈneʔ] “umbrella”

/u/ a high central unrounded vowel. It is realised as [u] a high central unrounded vowel. It occurs in open syllables and before all the final consonants except /p, ƞ/.

Ex.
/əkʰu/ [ˈɛʰuː] “elbow”
/sənuʔ/ [sə.'nuʔ’ ∼ sə.'nuʔ’] “gun”
/muːc/ [ˈmuːk’ ∼ ‘muːk’] “to swallow”
/tuːk/ [ˈtuːk’ ∼ ‘tuːk’] “wardrobe”
/juʔ/ [ˈjuʔ] “to drink”
/jum/ [ˈjum] “to cry”
/jun/ [ˈjun] “to massage”
/muŋ/ [ˈmuŋ] “to eat very much”
/muːs/ [ˈmuːs] “nose”
/ʔuːh/ [ˈʔuːh] “to nod”
/ə/ a mid central unrounded vowel. It is realised as [ə] a mid central unrounded vowel. It occurs in open syllables and before all the final consonants except /s/.

Ex.
/ha/ [ʰah] “satchel”
/jəp/ [jəp’ - jəp’] “classifier of clothes”
/kəc/ [kəc’ - kəc’] “to fall”
/ʔəʔ/ [ʔəʔ] “I”
/həm/ [həm] “to take a bath”
/pən/ [pən] “table”
/nənən/ [num, nən] “to rub eye”
/jək/ [jək’ - jək’] “lock”
/pəŋ/ [pəŋ] “enamelled basin”
/rəh/ [rəh] “tense”
/mət/ [mət’ - mət’] “smoke”

/a/ a low central unrounded vowel. It is realised as [a] a low central unrounded vowel. It occurs in open syllables and before all the final consonants.

Ex.
/səŋa/ [səŋa: - səŋa:] “blue”
/sərap/ [sərap’ - sərap’] “pebble”
/krat/ [krat’ - krat’] “plastic”
/rač/ [rač’ - rač’] “to abort”
/sak/ [sak’ - sak’] “to be full”
/kaʔ/ [kaʔ] “fish”
/jah/ [jåh] “to blossom”
/ras/ [rås] “foot”
/kam/ [kåm] “rice bran”
/pan/ [pån] “to arrive”
/kaŋ/ [kåŋ] “rice field”
/ʔaŋ/ [ʔaŋ] “negative marker”
/u/ a high back rounded vowel. It is realised as [u] a high back rounded vowel. It occurs in open syllables and before all the final consonants.

Ex.

/mu/ ['mû:]  "to crawl"
/sup/ ['sûp' - 'sûp']  "cigarette"
/luc/ ['lûc' - 'lûc']  "to pull a nail"
/miulut/ [,mi:u.'lût - ,mi:u.'lût']  "acne"
/lûk/ ['lûk' - 'lûk']  "sty"
/lûʔ/ ['lûʔ]  "inedible shell"
/jum/ ['jûm]  "to die"
/mun/ ['mûn]  "powder"
/mûŋ/ ['mûŋ]  "a top"
/vuŋ/ ['vuŋ]  "corn"
/nûs/ ['nûs]  "proud, price"
/jûh/ ['jûh]  "to make, to construct"

/o/ a mid back rounded vowel. It is realised as [o] a mid back rounded vowel. It occurs in open syllables and before all the final consonants except /ŋ/.

Ex.

/no/ ['no:]  "expensive"
/ʔop/ ['ʔôp' - 'ʔôp']  "cooked rice"
/tot/ ['tôt' - 'tôt']  "to smoke"
/joc/ ['jôc' - 'jôc']  "to be drunk"
/sok/ ['sôk' - 'sôk']  "seed"
/soʔ/ ['sôʔ]  "dog"
/ʔom/ ['ʔôm]  "water"
/pon/ ['pôn]  "four"
/ŋoŋ/ ['ŋoŋ]  "in"
/toh/ ['tôh]  "sunlight"
/cos/ ['côs]  "to tamp"
/ə/ a low back rounded vowel. It is realised as [ɔ] a low back rounded vowel. It occurs in open syllables and before all the final consonants except /c, n/.

Ex.

/klɔ/ ['klɔː] "Northern Thai people"
/cəp/ ['cəp'] "to wear"
/hɒt/ ['hɒt'] "to kiss"
/tɔk/ ['tɔk'] "to bite (insect)"
/tɔʔ/ ['tɔʔ] "to give"
/sɔm/ ['sɔm] "to eat"
/ŋkʰɔn/ [ŋkʰɔn] "fertilizer"
/prəŋ/ ['prəŋ] "soot"
/ŋɔh/ ['ŋɔh] "to stamp down"
/tɔs/ ['tɔs] "breasts"

- Diphthongs

The reasons for treating the final [u] and [i] as sequences of diphthongs are as follows:

1. The basic syllable pattern of this language is [c (c) v (v) (c)]; i.e., there is no final consonant clusters. To conform with the syllable pattern, the final [u] and [i] should be treated as sequences of diphthongs.

Ex.

['lɪuk] /liuk/ not /liwk/ "pig"
['sæiʔ] /saʔʔ/ not /sajʔ/ "sick"

2. Each vowel can occur independently in a syllable.

3. There is no voiced bilabial semi-vowel phoneme [w] in the consonant system. To assign a new phoneme to the phonological system does not seem to be economical.

/ia/ a diphthong which begins at the position of high front unrounded vowel [i] and moves downward to the position of the low central unrounded vowel [a]. It is realised as [ia] a diphthong which begins at the position of high front unrounded vowel [i] and moves downward to the position of the low central unrounded vowel [a]. It occurs in open syllables and before all the final consonants except /ŋ/.
Ex.
/kia/ [ki:a]                     “to look”
/liap/ ['lɪap’ - ’lɪap’]        “web”
/ʔiɛt/ [’ʔiɛt’ - ’ʔiɛt’]       “small”
/ʔiasm/ [’ʔiasm’ - ’ʔiasm’]    “to sleep”
/liak/ [’lɪak’ - ’lɪak’]       “to turn”
/pʰiəʔ/ [pʰiəʔ]              “to throw”
/pʰiam/ [pʰiam]               “to chew”
/kian/ [’kian]                 “pigtail”
/piɛŋ/ [’piɛŋ]                 “cupboard”
/sias/ [’sias]                 “to cut into two”
/ʔiäh/ [’ʔiäh]                 “this”

/iu/ a diphthong which begins at the position of high front unrounded vowel [i] and moves backward to the position of the high back rounded vowel [u]. It is realised as [iu] a diphthong which begins at the position of high front unrounded vowel [i] and moves backward to the position of the high back rounded vowel [u]. It occurs in an open syllable and before the final consonants / k, j, r /

Ex.
/səkiu/ [sə.'kɪu - sə.'kɪu]       “intestines”
/kʰiəʔ/ [kʰiəʔ]                  “to vomit”
/liuk/ [’lɪuk’ - ’lɪuk’]         “pig”

/uwi/ a diphthong which begins at the position of the high central unrounded vowel [u] and moves forward to the position of the high front unrounded vowel [i]. It is realised as [ui] a diphthong which begins at the position of the high central unrounded vowel [u] and moves forward to the position of the high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/muwi/ [’muwi]                     “cow”
/pʰuwi/ [’pʰuwi]                  “who”
/cʰuəʔpʰuwi/ [cʰuəʔ.’pʰuwi]       “monk”
/ua/ a diphthong which begins at the position of high central unrounded vowel [u] and moves downward to the position of the low central unrounded vowel [a]. It is realised as [ua] a diphthong which begins at the position of high central unrounded vowel [u] and moves downward to the position of the low central unrounded vowel [a]. It occurs in open syllables and before all the final consonants except /p, c, s, m/.

Ex.
/səŋua/ [sə.'ŋuə]  “green”
/pʰruat/ [pʰ'ruət']  “trap”
/imbluak/ [im'bluək']  “bat”
/ŋuaʔ?/ ['ŋuəʔ]  “to itch”
/juəh/ ['juəh]  “to carry”
/nuəŋ/ ['nuəŋ]  “toy”
/kʰuəŋ/ ['kʰuəŋ]  “rat”
/?ənuəŋ/ [ʔə.'nuəŋ]  “the only child”

/ai/ a diphthong which begins at the position of the mid central unrounded vowel [ə] and moves upward to the position of the high front unrounded vowel [i]. It is realised as [ai] a diphthong which begins at the position of the mid central unrounded vowel [ə] and moves upward to the position of the high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/?əi/ ['ʔə:i]  “to raise animal”
/kəi/ ['kə:i]  “stech”
/məi/ ['mə:i]  “the third personal pronoun”

/ai/ a diphthong which begins at the position of low central unrounded vowel [a] moves upward to the position of high front unrounded vowel [i]. It is realised as [ai] a diphthong which begins at the position of low central unrounded vowel [a] moves upward to the position of high front unrounded vowel [i]. It occurs in open syllables and before the final consonants /c, ?, h/.

Ex.
/plai/  ['pla:i]  "liquor"
/taiʔ/  ['taiʔ]  "vegetable, food"
/məiʔ/  ['hmâiʔ~'hmâiʔ]  "sand"
/taih/  ['táih]  "to pound"

/ao/ a diphthong which begins at the position of low central unrounded vowel [a] moves upward to the position of mid back rounded vowel [o]. It is realised as [ao] a diphthong which begins at the position of low central unrounded vowel [a] moves upward to the position of mid back rounded vowel [o]. It occurs in open syllables and before the final consonants / k , ʔ , h , ɲ /.

Ex.
/cao/  ['câ:o]  "it"
/ŋəak/  ['ŋəok'~'ŋəok']  "to cough"
/cbəoʔ/  ['cʰəoʔ]  "light"
/ŋkraoh/  [ŋ.'kráoh]  "to dance"
/kaon/  ['kaon]  "to dig"

/ui/ a diphthong which begins at the position of high back rounded vowel [u] and moves frontward to the position of high front unrounded vowel [i]. It is realised as [ui] a diphthong which begins at the position of high back rounded vowel [u] and moves frontward to the position of high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/kbui/  ['kʰu:i]  "slow"
/pbui/  ['pʰu:i]  "necklace"
/rui/  ['rũ:i]  "a fly"

/ua/ a diphthong which begins at the position of the high back rounded vowel [u] and moves downward to the position of the low central unrounded vowel [a]. It is realised as [ua] a diphthong which begins at the position of the high back rounded vowel [u] and moves downward to the position of the
low central unrounded vowel [a]. It occurs in open syllables and before all the final consonants except / p, k, ?, m, n, ng /.

Ex.
/pʰua/ \[pʰua\] “should not”
/kuat/ \['kuat' - 'kuat'] “cold (weather)”
/nebʰuač/ \[nebʰuač - 'cube'ubac'] “to whistle”
/kuan/ \['kuan] “child”
/?uah/ \['uah] “that”
/tuas/ \['tuas] “to cut strongly”

/oi/ a diphthong which begins at the position of mid back rounded vowel [o] and moves upward to the position of high front unrounded vowel [i]. It is realised as [oi] a diphthong which begins at the position of mid back rounded vowel [o] and moves upward to the position of high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/?oi/ \['oi] “son-in-law”
/koi/ \['koi] “to have”
/oəi/ \['oəi] “orphan”

/oi/ a diphthong which begins at the position of the low back rounded vowel [ɔ] and moves upward to the position of the high front unrounded vowel [i]. It is realised as [oi] a diphthong which begins at the position of the low back rounded vowel [ɔ] and moves upward to the position of the high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/moi/ \[moi] “axe”
/oəi/ \['oəi] “to squeeze”
/ŋkoi/ \[ŋkoi] “slope of hill”

- triphthongs

The sequences of three vowels: [iau] and [ua] are interpreted as triphthongs because [ia] and [ua] have been already interpreted as [vv]. Moreover, [u] and [i] which occur in syllable-final position are interpreted as [v] according to the basic pattern. Therefore, in this case, the sequences of
three vowels should be interpreted as [vvv] and this will give a consistency in interpreting and effect with a new CV pattern : C(C) V (V) (V) (C).

/iau/ a triphthong which begins at the position of the high front unrounded vowel [i], moves downward to the position of the low central unrounded vowel [a] and then move upward to the position of the high back rounded vowel [u]. It is realised as [iau] a triphthong which begins at the position of the high front unrounded vowel [i ], moves downward to the position of the low central unrounded vowel [a] and then move upward to the position of the high back rounded vowel [u]. It occurs in open syllables.

Ex.
/mpʰiau/ [mʰ.pʰiau] “face”
/miau/ [miau] “cat”
/tʰiau/ [tʰiau] “to dance”

/uai/ a triphthong which begins at the position of the high back rounded [u], move downward to the position of the low central unrounded vowel [a] and then moves upward to the position of the high front unrounded vowel [i]. It is realised as [uai] a triphthong which begins at the position of the high back rounded [u], move downward to the position of the low central unrounded vowel [a] and then moves upward to the position of the high front unrounded vowel [i]. It occurs in open syllables.

Ex.
/kuai/ [kuai] “one kind of rice”
/ŋuai/ [ŋuai] “thirty”
/mpʰuai/ [mʰ.pʰuai] “to turn on”

3.5.2 Vowel phoneme contrast

The suspect pairs of vowels are contrastive as shown below together with some example:

/i/ - /e/

/ih/ “to fruit”
/leh/ “a little finger”
/vih/ “bowel”
/veh/ “to call at”
<table>
<thead>
<tr>
<th>Text</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/e/</td>
<td>/veh/</td>
<td>“to call at”</td>
</tr>
<tr>
<td></td>
<td>/veh/</td>
<td>“to chip”</td>
</tr>
<tr>
<td></td>
<td>/seh/</td>
<td>“South”</td>
</tr>
<tr>
<td></td>
<td>/seh/</td>
<td>“to sterilize”</td>
</tr>
<tr>
<td>/i/-</td>
<td>/e/</td>
<td>/ε/</td>
</tr>
<tr>
<td></td>
<td>/vi/</td>
<td></td>
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<td>/ve/</td>
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<td></td>
<td>/ve/</td>
<td></td>
</tr>
<tr>
<td>/ε/-</td>
<td>/a/</td>
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<tr>
<td></td>
<td>/ʔem/</td>
<td></td>
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<tr>
<td></td>
<td>/ʔam/</td>
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</tr>
<tr>
<td>/a/-</td>
<td>/ɔ/</td>
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<tr>
<td></td>
<td>/taʔ/</td>
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<tr>
<td></td>
<td>/tɔʔ/</td>
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<tr>
<td></td>
<td>/mam/</td>
<td></td>
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<tr>
<td></td>
<td>/mɔm/</td>
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</tr>
<tr>
<td>/ɔ/-</td>
<td>/u/</td>
<td></td>
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<tr>
<td></td>
<td>/vɔk/</td>
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</tr>
<tr>
<td></td>
<td>/vuk/</td>
<td></td>
</tr>
<tr>
<td>/u/</td>
<td>/o/</td>
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<tr>
<td></td>
<td>/nu/</td>
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<tr>
<td></td>
<td>/no/</td>
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<td></td>
<td>/ʔuʔ/</td>
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<tr>
<td></td>
<td>/ʔoʔ/</td>
<td></td>
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<tr>
<td>/o/-</td>
<td>/u/</td>
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<td></td>
<td>/loʔ/</td>
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<tr>
<td></td>
<td>/luʔ/</td>
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<tr>
<td></td>
<td>/lup/</td>
<td></td>
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<tr>
<td></td>
<td>/lup/</td>
<td></td>
</tr>
</tbody>
</table>

“to borrow”
“one kind of vegetable”
“to stir”
“rice husk”
“the third daughter”
“grandfather”
“to give”
“to blow off (wind)”
“to sit in wait”
“to bend”
“to hook”
“difficult”
“expensive”
“to crow”
“a pole for carrying loads across something”
“speech”
“to be broken”
\textit{th}om/
\textit{th}um/

/o/ - /oi/
/po/
/poi/
/pə/ /poi/ 

/u/ - /ə/
/muic/
/məc/
/puuh/
/pəh/

/e/ - /ei/
/kə/
/kəi/
/kla/
/kləi/

/a/ - /ai/
/kaʔ/ /kaʔ/ 
/kaiʔ/ /kaiʔ/ 

/a/ - /əo/
/taʔ/ /taʔ/ 
/taʔ/ /taʔ/ 
/hak/ /haok/ 

/i/ - /ia/
/?i/ /?i/
/?ia/ /?ia/ 
/kip/ /kip/ 
/kiap/ /kiap/ 

"to make a bed"
"ripe"

"hammer"
"to dance (with hand)"
"mother’s sister"
"son-in-law"

"to swallow"
"ant"
"milk"
"to beat (clothes)"

"wind"
"stetch"
"todpole"
"to comb hair up with hand"

"fish"
"tight"

"grandfather"
"vapor"
"skin"
"to climb"

"the second daughter"
"chicken"
"to cut strongly"
"chopsticks"
<table>
<thead>
<tr>
<th>Phoneme</th>
<th>Chinese Characters</th>
<th>Pinyin</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i/</td>
<td>- /iu/</td>
<td>/ci?/</td>
<td>&quot;to hew&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ciu?/</td>
<td>&quot;old (thing)&quot;</td>
</tr>
<tr>
<td>/u/</td>
<td>- /iu/</td>
<td>/ciu?/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/liu?/</td>
<td>&quot;inedible shell&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/liu?/</td>
<td>&quot;out&quot;</td>
</tr>
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<td></td>
<td></td>
<td>/luk/</td>
<td>&quot;sty&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/liuk/</td>
<td>&quot;pig&quot;</td>
</tr>
<tr>
<td>/ui/</td>
<td>- /ui/</td>
<td>/ciu/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ciui/</td>
<td>&quot;to glissade&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/riu/</td>
<td>&quot;waist&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ru/</td>
<td>&quot;the top leaves&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ru/</td>
<td>&quot;a fly&quot;</td>
</tr>
<tr>
<td>/ia/</td>
<td>- /ua/</td>
<td>/lak/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/lua/</td>
<td>&quot;to turn face&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;pimple&quot;</td>
</tr>
<tr>
<td>/iu/</td>
<td>- /iau/</td>
<td>/mbi/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/mbiau/</td>
<td>&quot;fat&quot;</td>
</tr>
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<td></td>
<td>&quot;face&quot;</td>
</tr>
<tr>
<td>/ui/</td>
<td>- /oi/</td>
<td>/mu/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/mai/</td>
<td>&quot;cow&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;the third personal pronoun&quot;</td>
</tr>
<tr>
<td>/ai/</td>
<td>- /ao/</td>
<td>/tai/</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>/tao/</td>
<td>&quot;skirt&quot;</td>
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<td></td>
<td></td>
<td>/mai/</td>
<td>&quot;bottle&quot;</td>
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<tr>
<td></td>
<td></td>
<td>/mao/</td>
<td>&quot;nevus&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;classifier of thing&quot;</td>
</tr>
<tr>
<td>/ao/</td>
<td>- /iu/</td>
<td>/kho/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>/khiu/</td>
<td>&quot;tree&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;to vomit&quot;</td>
</tr>
</tbody>
</table>
/ua/ - /ua/
/pдают/
/pдетat/

“one kind of fruit”
“trap”

/ua/ - /uai/
/luai/

“to be loose”
“three”

/oi/ - /ui/
/koi/
/kui/
/?oi/
/?ui/

“to have”
“Lahu”
“son-in-law”
“the seventh daughter”

/oi/ - /oi/
/^doi/
/^оi/

“orphan”
“to squeeze”

/iua/ - /uai/
/mpдіау/
/mpдіа/
/kukiaу/
/kuai/

“face”
“to turn on”
“guava”
“one kind of rice”
CHAPTER IV

SYLLABLE

4.1 General definition

The syllable rank is defined as the rank whose units have a structure described in terms of phonemes and function in the phonological word. In the Wa language of Ban Santisuk Moo 19 the syllables are consonant boundary syllables which can be either open or closed syllables with either single vowels, diphthongs or triphthongs.

4.2 Syllable structure

The structure of the syllable is described in terms of a nucleus consisting of single vowels (V), diphthongs (VV), triphthongs (VVV) or syllabic nasal (N) and a periphery consisting of one to two consonants (C).

There are four types of syllable: the major syllable, the minor syllable, the presyllable and the nasal syllable.

4.2.1 The major syllable

The major syllable is defined as a syllable which always takes strong stress [']. It can be either closed syllable or open syllable. Its structure is: ['C(C)V(V)(V)(C)]. Full occurrence of this structure never occurs.

According to the data, nine different sub-types of a major syllable are found as follows:

a. sub-type A: ['CV ]

Ex.

/pe/ ['pɛ:] "mango"
/mbɔ/ ['mɔbɔ:] "ear-ring"
/ra/ ['ra:] "two"
/vi/ ['vi:] "to borrow"

b. sub-type B: ['CVV]

Ex.

/mbri/ ['mɔbrɪ:] "dirty"
c. sub-type C : [ CVV ]
Ex.
/mbia/  ['mbia]  "a flat basket"
/juə/  ['juə]  "easy"
/luə/  ['luə]  "loosen"

d. sub-type D : [ CCVV ]
Ex.
/pria/  ['pria]  "rabbit"
/plai/  ['plai]  "liquor"
/səproi/  ['səproi]  "dust"

e. sub-type E : [ CVV ]
Ex.
/miau/  ['miau]  "cat"
/lui/  ['lui]  "three"
/kuai/  ['kuai]  "one kind of rice"

f. sub-type F : [ CVC ]
Ex.
/tom/  ['tom]  "right"
/muc/  ['muc]  "to swallow"
/ŋen/  ['ŋen]  "short (measure)"

g. sub-type G : [ CCVC ]
Ex.
/pɾoʔ/  ['pɾoʔ]  "blanket"
/mbɛŋ/  ['mbɛŋ]  "big leech"
/klec/  ['klɛc]  "armpit"

h. sub-type H : [ CVVC ]
Ex.
/ŋiʔ/  ['ŋiʔ]  "the sixth son"
/pad/  ['pad]  "to turn on"
/ɲuat/  ['ɲʊat' ~ 'ɲʊat']  “to suck”

i. sub-type 1 : ['CCVVC]

Ex.
/kruas/  ['krʊas]  “to shake off”
/kʰluak/  ['kʰluak' ~ 'kʰluak']  “to cut hair (men)”
/praoʔ/  ['praoʔ]  “to line on one side”

4.2.2 Minor syllable

The minor syllable is defined as a syllable which takes weak stress. It occurs as the penultimate syllable in the disyllabic word (see sec. 5.2.2.2) and on the first syllable or second syllable of the trisyllabic word (see sec. 5.2.3.1 and 5.2.3.2). It can be either open or closed syllables. Its structure is [ˌC(Ć)V(V)Ć]. Full occurrence of this structure never occur.

There are five sub-types of the minor syllable as the following:

a. sub-type A : Its structure is [ˌCV].
Ex.
/vuvi/  [ˌvu:'vĬ:]  “lazy”
/ruho/  [ˌru:'hŎ:]  “garlic”
/pijon/  [ˌpĬ:'jŎn]  “strange”
/sakʰijuk/  [ˌsă,kʰi:'jŬk' ~ să,kʰi:'jŬk']  “classifier of banana”

b. sub-type B : Its structure is [ˌCCV].
Ex.
/krukre/  [ˌkru:'krĕ:]  “narrow”

c. sub-type C : Its structure is [ˌCVV].
Ex.
/tuasatɔŋ/  [ˌtua.să,tɔŋ ~ tua.să,tɔŋ]  “shrimp”
/miuulut/  [ˌmiu.'lŬt' ~ miu.'lŬt']  “acne”

d. sub-type D : Its structure is [ˌCVC].
Ex.
/pʰunpʰuŋ/ [pʰun.ʃ.pʰuŋ] “butterfly”
/jinliat/ [jin.ʃ.iŋat’ ~ jin.ʃ.iŋat’] “uvula”
/?omhah/ [ʔom.ʃhah] “color”
e. sub-type E: Its structure is [C(CCVC)].
Ex.
/prɔŋprɔh/ [prɔŋ.ʃ.prɔh] “to lie down”
/proskɔtʰwuʃa/ [proskɔ.ʃ.tʰwuʃa ~ pros.kɔ.ʃ.tʰwuʃa] “pink”

3.2.3 The presyllable

The presyllable is defined as a syllable which takes /ə/ or /a/ vowels with the phonetic realisation [Cə] and is unstressed. The vowels /ə/ and /a/ in this dialect are free variation in the presyllable. It can precede the major syllables or minor syllable in both disyllabic and trisyllabic words. It can only be an open syllable. Its structure is : [Cə].
Ex.
/katɔm/ [kə.tom ~ kə.tom] “egg”
/pəʔo/ [paʔ.o ~ paʔ.o] “dumb”
/kasusə/ [kə,ʃuəs ~ kə,ʃuəs] “charcoal”
/?əpəc/ [ʔə,pək’ ~ ʔə,pək’] “bridge”
/səvuk/ [saʔ.ʃvuk’ ~ saʔ.ʃvuk’] “sickle”
/tuasətəŋ/ [tuə.sə,təŋ ~ tuə.sə,təŋ] “shrimp”
/səkʰiʃuʃ/ [saʔ.ʃiʃ.ʃuʃ ~ saʔ.ʃiʃ.ʃuʃ] “classifier of banana”

3.2.4 The nasal syllable

The nasal syllable is defined as a syllable which is formed by the nasal syllabics. It always occurs as a presyllable in the disyllabic and trisyllabic words (see sec. 5.2.2.1 and 5.2.3.2) and is unstressed. Its structure is N. The [N] is the nasal syllabics which can be a bilabial [n], an alveolar [ŋ], or a velar [ŋ].
Ex.
/mpʰranʃ/ [mŋ.ʃ.prəŋʃ] “spade”
/ncʰec/ [ŋ.ʃéc ~ ŋ.ʃéc’] “chisel”
/ŋcaok/ [ŋ.ʃ.cəok ~ ŋ.ʃ.cəok] “spoon”
Table 4. The co-occurrence of single initial consonants and vowels

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The co-occurrence of single initial consonants and vowels as shown in table 4 can be summarized as follow:

1. All consonant phonemes can occur initially.
2. All vowel phonemes can occur after the single initial consonants.
3. /k, m/ are the single initial consonants that have the widest distribution with the vowel phonemes.
4. /l/ is the single initial consonant that has the narrowest distribution with the vowel phonemes.
5. /e, a/ are the vowel phonemes that have the widest distribution with the single initial consonants.
6. /uai, uai, ei/ are the vowel phonemes that have the narrowest distribution with the single initial consonants.

Table 5: The co-occurrence of consonant clusters

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The co-occurrence of the consonant clusters as shown in table 5 can be summarized that only the initial consonants /p, pʰ, m b, k, kʰ/ can occur with the consonant clusters /l, r/.
Table 6: The co-occurrence of initial consonant clusters and vowels

|     | i  | e  | e  | ù | å | a | u | o | े | ia | iu | wi | wa | ei | ai | ao | ui | ua | oi | े |
|-----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pl  | x  | x  | x  | x |   | x |   |   | x |   |   |   |   |   |   |   |   |   |   |   |   |
| pr  | x  | x  | x  | x | x | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |
| pʰl |   |   |   | x |   |   |   |   |   |   | x |   |   |   |   |   |   |   |   |   |   |   |
| pʰr | x  | x  | x  | x |   | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| mʰl | x  |   | x  | x | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| mʰr | x  | x  | x  | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| kl  |   | x  | x  | x | x | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| kr  | x  | x  | x  | x | x | x | x |   |   |   |   | x | x | x | x |   |   |   |   |   |   |   |
| kʰl | x  |   |   | x | x | x |   | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| kʰr | x  | x  | x  | x | x | x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

The co-occurrence of initial consonant clusters and vowels as shown in table 6 can be summarized as follows:

1. There are four vowel phonemes /wi, ो, iau, uai/ that never occur with the consonant clusters.
2. /a/ is a vowel phoneme that can occur with all the consonant clusters.
3. /ो/, /ui, oï/ are the vowel phonemes that have the narrowest distribution with the consonant clusters.
4. /pr, kr/ are the consonant clusters that have the widest distribution with the vowel phonemes.
5. /pʰl/ is the consonant cluster that has the narrowest distribution with the vowel phonemes.
Table 7: The co-occurrence of vowels and final consonants

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The co-occurrence of vowels and final consonants as shown in Table 7 can be summarized as follows:

1. The consonants /p, t, c, k, ?, s, h, m, n, j, η/ can occur finally.

2. All vowel phonemes can occur with the final consonants except /ui, oi, ui, oï, iau, uai/.

3. /e, a, u/ are the vowel phonemes that can occur with all the final consonants.
/iui/ is the vowel phoneme that has the narrowest distribution with the final consonants.

/ʔ, h/ are the final consonant phonemes that have the widest distribution with the vowel phonemes.

/ŋ/ is the final consonant phoneme that has the narrowest distribution with the vowel phonemes.

### 4.3 Function

A syllable functions in the phonological word. There are two main classes of syllables in terms of their function in the phonological word: a nuclear stressed syllable and a peripheral unstressed or weakly stressed syllable.

#### 4.3.1 Nuclear syllable

This class of syllable is stressed, and functions as the nucleus of the phonological word. Its occurrence is obligatory in the final position. Syllable of this class can be closed and open. This syllable class is called a “major syllable”.

Ex.

/ŋuŋ/  [ŋuŋ]  “waist”
/saʔuŋ/  [saʔuŋ - saʔuŋ]  “snake”
/ŋtʰuŋ/  [ŋtʰuŋ]  “pond”
/taŋkráʔ/  [taŋ.ˈkráʔ]  “road”

#### 4.3.2 Peripheral syllable

This syllable functions as the periphery in the phonological word and always occupies the first or second position of disyllabic words or trisyllabic words. The peripheral syllable can be divided into two sub-classes: a weakly stressed peripheral syllable and an unstressed peripheral syllable.

##### 4.3.2.1 Weakly stressed peripheral syllable

Syllables in this sub-class are both closed and open type. This class may be called a “minor syllable”.

Ex.

/vəŋcaŋ/  [vəŋ.ˈcāŋ]  “mosquito net”
/kɔŋmu/ [kɔŋ.'mũː] “pagonda”
/miulut/ [mi:u.'lʊt’ − mi:u.'lʊt’] “acne”
/kukiau/ [ku.:ki:'au] “guava”

4.3.2.2 Unstressed peripheral syllable

This sub-class may be further divided into: an unstressed nasal syllable and an unstressed presyllable.

A. Unstressed nasal syllable

Phonemically, syllabic nasal [ŋ, ɳ, ɗ] are the allophones of the nasal phonemes /m, n, ŋ/.

A nasal syllable does not have the structure of a normal syllable because it is not composed of a consonant and a vowel but only a consonant. Ex.

/mpʰaiʔ/ [m.ˈpʰaiʔ] “charcoal brazier”
/ntʰok/ [n.ˈtʰok’ − ŋ.ˈtʰok’] “blind”
/ŋkaŋ/ [ŋ.ˈkɑŋ] “coat button”

B. Unstressed presyllable

Syllables of this type are always of the open type with the vowels /ə , a/. Ex.

/səʔoi/ [sə.'ʔoi − sə.'ʔoi] “smell”
/kəʔom/ [kə.'ʔom − ḳə.'ʔom] “cloud, fog”
/?əʔom/ [ʔə.'ʔom − ḳə.'ʔom] “heart”
CHAPTER V

THE PHONOLOGICAL WORD

5.1 General definition

The phonological word is defined as the rank of the phonological hierarchy between the intonation group and the syllable. It has a structure stated in terms of syllable and functions in the intonation group. The phonological word in Wa of Ban Santisuk Moo 19 has only one main (strong) stress. That is, a strong stressed syllable shows the end of a phonological word. Thus a phonological word in this study may be called a stress group as well.

5.2 Word structure

In term of stress, the stress group in this language can be divided into three types: Monosyllabic word, Disyllabic word and Trisyllabic word.

The syllabic pattern of Wa at Ban Santisuk Moo 19 is basically monosyllabic word. There are a small number of disyllabic words and an even rarer number of trisyllabic words.

5.2.1 Monosyllabic word

Monosyllabic word is a word with only one syllable. This syllable carries the strong stress. Its structure is: ['s].

Ex.

/nu:/ ['nuː:] "to rub"
/pla:/ ['plɑː:] "to blow fire"
/pʰua/ ['pʰuːa] "should not"
/kʰuat/ ['kʰɯat' - 'kʰɯat'] "old age"
/mɔː/ ['mɔː' - 'mɔː'] "ant"
/plak/ ['plɑːk' - 'plɑːk'] "half, side, classifier"
/pria/ ['priːa'] "rabbit"
/pʰruat/  ['pʰɾuat' ~ 'pʰɾuat']  “one kind of fruit”

5.2.2 Disyllabic word

Disyllabic word is a word with two syllables. It can be classified according to its structure into 2 sub-types.

5.2.2.1 Disyllabic word sub-type A

This sub-type is composed of presyllable [Cə] or nasal syllable [N] taking the unstress on the first syllable and follows by major syllable taking strong stress is on the final syllable. Its structure is : [ u 's ].

Ex.
/kamuat/  [kâ.'mûat' ~ kâ.'mûat']  “weevil”
/sama/  [sâ.'ma: ~ sâ.'ma:]  “to pickle”
/ʔəliap/  [ʔə.'lîap' ~ ʔə.'lîap']  “middle”
/ʔərunt/  [ʔə.'ruŋt' ~ ʔə.'ruŋt']  “excretions from skin”
/səŋua/  [sə.'ŋuːa ~ sə.'ŋuːa]  “green”
/səkru/  [sə.'krûː ~ sə.'krûː]  “river”
/səkrak/  [sə.'krâk' ~ sə.'krâk']  “red”
/mp³iua/  [mp³.'bʱi:ua]  “face”
/ntʰai/  [ntʰ.'tʰai]  “plow”
/ŋkrac/  [ŋ.'krâc' ~ ŋ.'krâc']  “pineapple”
/ŋkʰu/  [ŋ.'kʰuː]  “brain”

5.2.2.2 Disyllabic word sub-type B

This sub-type is composed of minor syllable taking a weak stress and follows by major syllable taking strong stress. Its structure is : [ w 's ]

Ex.
/pupia/  [,puː.'piːa]  “to stagger”
/krukre/  [,kruː.'krɛː]  “narrow”
/puŋpuī/  [,puŋ.'pûːi]  “to sway”
/pruŋprōh/  [,pruŋ.'prɔh]  “to lie down”
5.2.3 Trisyllabic word

Trisyllabic word is a word with three syllables. These three syllables have only one meaning which cannot be further divided. I found only few trisyllabic words in Wa. According to the structure, they can be divided into two sub-types.

5.2.3.1 Trisyllabic word sub-type A

This sub-type is consisted of a minor syllable taking weak stress, a presyllable taking the unstress and followed by a major syllable taking strong stress. The structure of this trisyllabic word is: [ ,w u. 's ]

It should be noted that the presyllable does not occur as the preceding syllable in this sub-type of trisyllabic word, but it occurs as penultimate syllable (between the minor syllable and the major syllable). This occurrence of the presyllable were found in two trisyllabic words from my data.

Ex. /proska'tuwa/ [,pros.kà.'tւu:a ~ ,pros.kà.'tւu:a] “pink”

5.2.3.2 Trisyllabic word sub-type B

This sub-type consists of presyllable or nasal syllable taking the unstress, minor syllable taking the weak stress and major syllable taking the strong stress. Its structure is: [ u. ,w 's ].

Ex. /sakbijuk/ [sà,kbì:'jùk ~ sà,kbì:'jùk’] “classifier of banana”
/?akao?saʔi/ [ʔà,kaoʔ.'sàʔ ~ ʔà,kaoʔ.'sàʔ] “the day before yesterday”
/ŋkbijun/ [ŋi,kbì:'jùŋ] “chair, pillow”

The stress group in Wa at Ban Santisuk Moo 19 has only one strong stress on the peak of the monosyllabic word and on the last syllable of the disyllabic and trisyllabic words. And also, there are the weak stress on the minor syllable or the unstress on the presyllable and the nasal syllable that can occur everywhere except the end of words in the disyllabic and trisyllabic word.

Stress in Wa at Ban Santisuk Moo 19 is predictable; therefore, it is not marked in phonemic writing. However, it was described in its phonetic
form. The strong stress is symbolized by [s] and is marked by [']. The weak stress is symbolized [w] and is marked by [j]. The unstress is symbolized by [u] and has no marker []. The syllable boundary is marked by [\]. All markers are in front of the syllables.

5.3 Word pitch

There are four types of non-contrastive word pitch in Wa language spoken at Ban Santisuk Moo 19, Tambol Patung, Mae-Chan district, Chiang Rai province: the low level pitch, the mid level pitch, the high falling pitch and the high level pitch. The pitch in this dialect is conditioned by vowels and the final consonants of the syllable as the followings:

5.3.1 The low level pitch

The low level pitch occurs on the syllable as follows:
- the major syllable carrying the vowel /i/ with final consonant /ʔ/
- the nasal syllable and the presyllable
It is marked by [`] above the vowel in my phonetic transcription.

Ex.
/tʰiʔ/ [tʰiʔ] “one”
/ciʔ/ [ciʔ] “flesh(baby language)”
/ŋkrai/ [ŋˈkrâːi] “to disappear”
/ŋfes/ [ŋˈfês ŋˈlwès] “chopstick”
/ləmaʔ/ [ləˈmâːʔ - ləˈmâːʔ] “sugar cane”

5.3.2 The mid level pitch

The mid level pitch occurs on the syllable as follows:
- the open major syllable carrying the following vowels /ə, a, o, ia, uə, ua, oï, ʊi, ɔi, iau, uai /
- the closed major syllable carrying the vowels /i, e, w, o, ɔ, ia, uə, ua, ao/ with all voiced consonants
- the minor syllable
It has no marker in my phonetic transcription.

Ex.
/səʔw/ [səˈtʰw: - səˈtʰw:] “pole”
5.3.3 The high falling pitch

The high falling pitch occurs on the syllable as follows:
- the open major syllable carrying the vowels /i, e, e, o, u, o, iu, ai, ao, ui, ei /
- the closed major syllable carrying all vowels with the final consonants /p, t, c, k, s/
- the closed major syllable carrying the vowels /ai, ao, iu/ with the final consonants /?/
- the closed major syllable carrying the vowels /o, a, u/ with the voiced final consonants

It is marked by [^] above the vowels in my phonetic transcriptions.

Ex.
/re/ ['rè:] “to go down”
/sañe/ [sà.'kèː - sà.'kèː] “hair's decoration”
/te/ [ˈtɛ:] "sweet"
/səpə/ [sə.ˈpəː - sə.ˈpəː] "to comb hair by hand"
/pu/ [ˈpʊ:] "betel leaves"
/klo/ [ˈklɔː] "Northern Thai"
/tai/ [ˈtǎːi] "skirt"
/tao/ [ˈtəːo] "bottle"
/kai/ [ˈkǎːi] "stetch"
/səkiu/ [sə.ˈkǐːu - sə.ˈkǐːu] "intestines"
/ŋup/ [ˈŋǔp̚] 'ŋǔp̚' "morning"
/khiat/ [ˈkʰiət̚ - ˈkʰiət̚] "fan"
/nchec/ [ŋ.ˈcʰɛc̚ - ŋ.ˈcʰɛc̚] "chisel"
/muk/ [ˈmǔk̚] 'mǔk̚' "to chop"
/mblas/ [ˈmbləs] "to untie"
/laiʔ/ [ˈlàiʔ] "to relax"
/taoʔ/ [ˈtəoʔ] "vapour"
/səmiuʔ/ [sə.ˈmǐuʔ - sə.ˈmǐuʔ] "stone"
/kap/ [ˈkəp̚] "mother's elder brother"
/man/ [ˈmən] "fabric"
/tʰuŋ/ [ˈtʰuŋ] "bronze"

5.3.4 The high pitch

The high pitch occurs on the closed major syllable as follows:
- the closed major syllable carrying all the vowels with the final consonant /h/.
- the closed major syllable carrying the vowels /a, e, u, ə, a, u, o, ia, wa/ with the final consonant /ʔ/

It is marked by [´] above the vowels in my phonetic transcription.

Ex.
/khih/ [ˈkʰiəʔ] "to give birth"
/nkleh/ [ŋ.ˈkʰleʔ] "to feel stiff"
/pch/ [ˈpɛə] "to pick fruit from tree"
/ŋuəh/ [ˈŋuəh] "to nod"
/rah/ [ˈrólica]
/prah/ [ˈprólica]
/kruh/ [ˈkroma]
/səʔoh/ [səʔˈoh - səʔˈoh]
/mbrəh/ [ˈmbrəh]
/juah/ [ˈjuuh]
/tuah/ [ˈtuuh]
/loʔaih/ [loʔˈaih - loʔˈaih]
/pauh/ [ˈpauuh]
/seʔ/ [ˈseʔ]
/təʔ/ [ˈtəʔ]

/juuiʔ/ [ˈjuuiʔ]
/chéʔ/ [ˈchéʔ]
/mbraʔ/ [ˈmbraʔ]
/pµuʔ/ [ˈpµuʔ]
/muʔ/ [ˈmuʔ]
/pµiʔaʔ/ [ˈpµiʔaʔ]
/ʔəvuaʔ/ [ʔəˈvuaʔ - ʔəˈvuaʔ]

“tense”
“to divorce”
“classifier of fire”
“to dry”
“to split (hand)”
“to carry”
“there”
“sweat”
“to turn on”
“louse”
“to take”
(medicine)“to drink”
“wet”
“to expert”
“father’s younger sister”
“to hide”
“to throw (a top)”
“Wa, door”
CHAPTER VI

THE INTONATION GROUP

6.1 General definition

The intonation group is the unit of the highest rank of the phonology presented here, so its function in higher units is not discussed. The structure of the intonation group is stated in terms of the phonological word.

6.2 Types of intonation

Within the intonation group in Wa at Ban Santisuk Moo 19, Tambo Patung, Mae-Chan district, Chiang Rai province, there are two types of intonation contour: the rising contour and the mid level contour. These two types of contour are characterized by the pitch on the last syllable of the utterance in the group.

6.2.1 The rising contour

The rising contour is used for commands and questions, both content and polar (Yes/No) question. It is phonetically represented by a little higher pitch of the final syllable. This is phonetically marked by [———].

6.2.1.1 Commands

The statement of command in Wa at Ban Santisuk Moo 19 is generally marked by a command marker /pʰui/ “prohibit” which can occur before a main verb in a sentence. Sometimes there is no marker in the command statement. From the structure, this command statement is like an affirmative sentence. The only thing that can be considered as difference between these two types of the sentence is the intonation. If that sentence has a rising contour, it is a command statement but if it has a mid level contour it is an affirmative statement.
Ex.

[ pʰu:i hao? ]
  don’t go
  “Don’t go”

[ ?a:liŋ hao? ?iac ]
  ?aling go sleep
  “?aling goes to sleep”

[ ?a:liŋ pʰu:i ?o:ŋ ]
  ?aling don’t speak
  “?aling doesn’t speak”

[ ?a:liŋ hao? kɔ?iŋ ]
  ?aling go here
  “?aling comes here”

[ pʰu:ŋ paoh ]
  don’t open
  “Don’t open”

[ ?a:liŋ cʰoŋ ]
  ?aling stand
  “?aling stands up”
6.2.1.2 Questions

-Polar questions

A polar question in Wa usually has no polar question marker, i.e., its structure is just like an affirmative statement but with one major difference, a subject of a sentence occurs finally. Sometime, a polar question can have a marker /əh/ which occurs in final position of a statement.

Ex.

Question : [ ?ot noŋ pia? naːnu: ]
to stay in houseNanu
“Is Nanu in house.?”

Response : [ ?ot naːnuː noŋ pia? ]
to stay Nanu in house
“Yes, Nanu is in house.”

Question : [ som som me? caʔtiː ]
eat eat you Cati
“Do you want to eat Cati?.”

Response : In affirmative statement

[ som som ]
eat eat
“Yes, I want to eat.”

: In negation

[ ?aŋ som ]
not eat
“No, I don’t want to eat.”
[ sak ]
to be full
“No, I am full.”

Question: [ num  láh ]
delicious Q.M.
“Is it delicious?”

Response: [ num ]
delicious
“Yes, it is delicious.”

- Content questions

The content question markers in Wa are the followings:

/pʰɔh/    “what”    /tɔmiuʔ/    “where”
/ləmiuʔ/    “when”    /mɛʔmiuʔ/    “how much, how many”
/lɔkϕɔh/    “how”    /pʰui/    “who”

A content question must have a content question marker. All markers occur finally in the sentence except the question marker /pʰui/ “who” which occurs initially in the sentence.

Ex.

[ juh ʔaːliŋ  kʰɛŋ  pʰɔh ]
to do ʔaling job what
“What does ʔaling do?”

[ juh  meʔ  kʰɛŋ  tɔmiuʔ ]
to do you job where
“Where does he work?”
6.2.2 The mid level contour

The mid level contour is used for affirmative statements, negative statements and reply (see 6.2.1.2 polar questions). It is phonetically represented by the mid level of the pitch of the final syllable. This is phonetically marked by [———].

5.2.2.1 Affirmative statements

[to stay you there there
"He is over there."

[to go ?aling in field
"?aling goes to the field."

[already to to eat I cooked rice
"I ate rice already."
[ hai? hoc sətai? ?o? cah ]
already to wash I clothes
"I washed clothes already."

6.2.2.2 Negative statements

The negative marker in Wa is /?an/ "not". The marker /?an/ can occur before subject or verb of the sentence.

[ ?an tai? num ]
not food delicious
"Food is not delicious."

not person to stay in house
"No one is in house."

day this not see Cati
"Today, (I) don’t see Cati."

[ ?an səm ]
not to eat
"(I) don’t to eat."

The intonation group in this study is predictable from the type of sentence; that is, in the commanded and questioned sentences are the rising-contour; in the affirmative, negative and replied sentences are the mid-level contour.
CHAPTER VII

CONCLUSION AND SUGGESTIONS FOR FURTHER STUDIES

7.1 Conclusion

The phonology of Ban Santisuk Moo 19, Tambol Patung, Mae-Chan District, Chiang Rai Province, consists of the following features:

7.1.1 The phonemes

7.1.1.1 The consonant phonemes

There are twenty-seven consonant phonemes. They are /p, pʰ, mb, t, tʰ, nd, c, cʰ, k, kʰ, ?, v, f, s, h, m, n, n, n, n, n, n, 1, 1, r, r, j/. 

7.1.1.2 The vowel phonemes

There are nine single vowel phonemes: /i, e, η, u, a, u, o, ο/, eleven diphthongs:/ia, iu, ui, wa, o/, ai, ao, ui, ua, oi, ei/ and two triphthongs:/iau, uai/.

7.1.2 The syllable

There are four types of syllable in this dialect. They are the major syllable, the minor syllable, the presyllable and the nasal syllable.

7.1.3 The phonological word

There are three types of the phonological word in this study. They are monosyllabic word, disyllabic word and trisyllabic word.

There are three types of stress: strong stress [s], weak stress[w] and unstress [u].
7.1.4 The intonation group

There are two types of the intonation group, i.e., the rising contour and the mid level contour.

The rising contour is used for commands and questions, both content and polar questions.

The mid level contour is used for affirmative statements, negative statements and replied statements.

7.2 Remarks on Wa at Ban Santisuk Moo 19

As the author mentioned that Wa is nearly the same Lawa (see 1.5 General information on Wa); i.e., it can be noticed from their vocabularies showing that these two languages are almost the same, but there are some significant phonological differences that were described below.

The phonological data on Wa language is from the writer's own analysis in Chapter III to Chapter VI.

The reference data of Lawa used in this study were taken from “The Phonology of Lawa” in Southeast Asian Linguistic Studies presented to Andre-G. Haudricourt, 1985 by Suriya Ratanakul and Lakkhana Dao Ratanahong. This is Lawa spoken at Ban Papae, Amphoe Mae-Sariang, Mae Hongson province; The north of Thailand (see 1.6 Researchs on the Wa language).

The phonological comparison of Wa and Lawa reflects the characteristics of these two languages as follows:

**Phonemes**: regarding consonant and vowel phonemes

- Consonant phonemes: there are 27 consonant phonemes in Wa at Ban Santisuk Moo 19, but 37 consonant phonemes in Lawa at Ban Papae. The evident differences are as follows:
  1. There are no preglottalised and some prenasalized consonants /ʔj, ʔm, ʔn, ʔŋ, ʔŋ, ʔŋ, ʔl, ʔr, ʔŋ / in Wa but occur in Lawa.
  2. There is no a voiced velar fricative /ɣ / in Wa but occurs in Lawa.
  3. There are voiced stops /b, j/ in Lawa but none in Wa.
  4. There is a voiced alveolar trill /ɾ/ in Wa but none in Lawa.
  5. In Wa, the consonants as a second member of consonant cluster are /l, r/ but are /l, j/ in Lawa.
  6. The final consonants /p, t, c, k, ?, s, h, m, n, ŋ, η/ can occur in Wa while all of these final consonants except /s/ can occur in Lawa. The final consonant [s] is found rarely in the Waic language but it occurs in Wa at Ban Santisuk Moo 19. This final consonant /s/ corresponds to proto-Waic *s.
  7. The voiceless bilabial semi-vowel [hw] is still found to be free variation of the voiceless labio-dental fricative [f] in the initial position in Wa while [hw] never occurs in Lawa; only [f] is found in Lawa.

- Vowel phonemes: there are 9 single vowels, 11 diphthongs and 2
triphthongs in Wa: /i, e, ε, u, o, a, ə, uə, oə, ia, uə, oə, əi, ai, ao, ui, ua, oi, ei, iau, uai/ but there are 10 single vowels, 14 complex vowels and a triphthong in Lawa: /i, e, ε, w, o, a, u, o, ə, iə, uə, oə, əi, ei, əo, eo, ai, ao, ui, oi, ei, ce, aie/.

The syllable: the syllable structure of both languages is similar. It is C ( C ) V ( V ) ( V ) ( C ). In addition, the syllabic nasals /m, n, ŋ/ which function as a nasal syllable occur in Wa but none in Lawa.

The phonological word: there are 3 types of word in Wa: monosyllabic word, disyllabic word and only five trisyllabic words. However, there are 2 types of word in Lawa: monosyllabic word and disyllabic word.

The intonation group: in both languages, there are 2 types of intonation: the rising contour and the mid-level contour. In Lawa, the intonation is phonemic; however, it is non-phonemic in Wa.

Comparison of the two languages, Wa and Lawa, shows that they are similar.

7.3 Suggestions for further study

For further study, some interesting points are:

7.3.1 Due to the study of Wa phonology, other topic that should continue researching is Wa syntax.

7.3.2 According to chapter I: Introduction (see 1.5.3 Wa at Ban Santisuk Moo 19), there are various hilltribes in this village such as Wa, Yunnanese Chinese, Lahu and Akha. They must contact one another so a study of the multilingualism of the Wa people is an interesting point.

7.3.3 There are many phonological studies of the various languages in Waic sub-branch; therefore, a comparative study of all these analyses should be done.
BIBLIOGRAPHY


Thomas, David D. A Survey of the Needs for Scripture Translation among the Hill Tribes of Northern Southeast Asia, and some of helps and hindrance toward the Accomplishment of that Goal. M.A. Thesis. Columbia Bible College. 1954.


จังหวัดเชียงราย, สำนักงาน. เครื่องหมายเหตุคุณดำเนินกระบวนพยุกต์สิ่งทายที่สามจุดกิจ : ข้อมูลส่วนภูมิพบทางวัฒนธรรมจังหวัด, 2538

จิตศิลป์ภูผดุงศิลป์. ความเป็นมาของคำส่วนไทย ภาษาและอนุรักษ์และลักษณะทางสรุตของคำส่วนชิมณ. มูลนิธิโครงการตระเวนสยามสาระและนิยมศิลปะ สมาคมลัทธิสมานส่วยแม่ ประเทศไทย, กรุงเทพมหานคร. ที่ 289 เล่มที่ 1. 2519.

สาขาวิชา นุรุรุพันธุ์. สรวิทยา: การวิเคราะห์ระบบเวียง. สถาบันวิจัยภาษาและการวัฒนธรรมเพื่อพัฒนาชนบท. มหาวิทยาลัยมหิดล, 2536.

สุวิทย์ รัตนภู. “ตะวันและแสง.” ภาษาและวัฒนธรรม. ปีที่ 44, เล่มที่ 1. หน้า 56-78. 2527.

__________ ฉวันชัชชา ชาววัฒน์สุร. พนันปฐมไทย-ชาววัง. สถาบันวิจัยภาษาและวัฒนธรรมเพื่อพัฒนาชนบท. มหาวิทยาลัยมหิดล, 2530.

__________ รองศาสตราจารย์ ดร. คุณภูผดุงศิลป์. นำมาภาษาในเขตอัมภัน, เล่มที่ 1. ภาคที่ 1. ภาษาอัมภันและอัมภันยิ่งถึงและอัมภันจำนวนมาก. กรุงเทพมหานคร: สถาบันวิจัยภาษาและวัฒนธรรมเพื่อพัฒนาชนบท. มหาวิทยาลัยมหิดล, 2531.

สก เสนาบุตร. พนันปฐมไทย-ผึ้ง. กรุงเทพมหานคร : ไทยวัฒนาพาณิช จำกัด, 2532.

สก เสนาบุตร. พนันปฐมไทย-ผึ้ง. กรุงเทพมหานคร : ไทยวัฒนาพาณิช จำกัด, 2536.
มองผู้วิจัย. สำนักเศรษฐกิจ. สถาบันวิจัย금융และวัฒนธรรมเพื่อพัฒนาชาญบุร. มหาวิทยาลัยมหาดล, 2535.

อำเภอเมือง. บารย์ยะธุรลักษอนอบเมือง จังหวัดเชียงราย.
APPENDIX
WORD LIST

The entries word lists are listed according to the following orders:

1. The initial consonants are arranged in the following order:
   /p, ph, mb, t, th, nd, c, ch, k, kh, ?, v, f, s, h, m, n, n, n, ı, l, l, r, f, j/.

2. The final consonants are ordered as follows:
   /p, t, c, k, ?, s, h, m, n, n, n/.

3. The vowels are ordered as follows:
   /ı, e, e, u, o, a, u, o,
   œ, ia, iu, ui, wa, œi, ai, ao, ui, ua, oi, œi, iau, uai/.

4. The entries with open syllables are before entries with closed syllables.
/p/  “to tie”
/pijuk/  “stranger”
/pijian/  “to sweep”
/pis/  “mango”
/pa/  “duck”
/pet/  “child, fruit”
/pla?/  “spicy”
/pre?/  “cunt”
/pa/  “to pick fruit”
/pla?/  “red-orange”
/pla?/  “string bag”
/pem/  “old”
/prem/  “to fill water”
/pruk/  “orange (color)”
/pa/  “to fly”
/pa?wa/  “greedy”
/pa?o/  “dumb”
/pa?o/  “amputated leg”
/pa?o/  “tomorrow”
/pa?u?/  “rich”
/pla?/  “to blow fire”
/pa?/  “to slough”
/pa?/  “faithful”
/pru?/  “to scratch”
/pac/  “edge”
/pa?/  “classifier of thing esp. in one side”
/pa?/  “to lean”
/pruk/
/piaʃ/  "to cut into piece"
/piu/    "to hang"
/pliu/   "to relinquish"
/pailiu/ "circle"
/plai/   "liquor"
/pao?/   "father’s younger brother"
/prao?/  "to lie on one side"
/paoh/   "to turn on"
/pua/    "to borrow"
/pruas/  "to flip"
/poi/    "to dance(with hand)"

/pʰ/  

/pʰi/    "to forget"
/pʰiʔec/ "the same lineage"
/pʰiɲiaʔ/ "cousin"
/pʰiris/ "one kind of grass"
/pʰiriʔ/ "giant"
/pʰlis/  "short knife"
/pʰiɲ/   "white"
/pʰrec/  "one kind of ant"
/pʰeʔ/   "goat"
/pʰreʔ/  "by one self"
/pʰres/  "spear"
/pʰch/   "to disgorge"
/pʰuu/<br>“evening”
/pʰuʔ/ <br>“spade”
/pʰuʔc/<br>“to slice”
/pʰuʔk/<br>“mucus”
/pʰuʔs/<br>“bubble”
/pʰruʔs/<br>“many color”
/pʰuʔh/<br>“milk”
/pʰah/<br>“to beat clothes”
/pʰoŋ/<br>“table”
/pʰəŋ/<br>“basin”
/pʰالأ/<br>“root of bamboo”
/pʰak/<br>“to bush”
/pʰəŋ/<br>“web of hand or foot”
/pʰu/ <br>“plate”
/pʰuk/<br>“thick”
/pʰuʔ/<br>“to cut”
/pʰun/<br>“father’s younger sister”
/pʰunʔʔəŋ/<br>“time”
/pʰoʔ/<br>“butterfly”
/pʰroʔ/<br>“to tie child on mother’s back”
/pʰom/<br>“blanket”
/pʰoh/<br>“to pity”
/pʰəp/<br>“what”
/pʰən/<br>“to gather with both hand”
/pʰiaʔ/ <br>“plate”
/pʰiaʔ/ <br>“to throw”
/pʰi am/  “to chew”
/pʰiu/  “one kind of bean”
/pʰuí/  “who”
/pʰruat/  “trap”
/pʰuak/  “to split a piece of bamboo”
/pʰruaʔ/  “to feed child”
/pʰlui/  “necklace”
/pʰua/  “should not”
/pʰruat/  “one kind of fruit”
/pʰuan/  “five”

/mb/

/mbri/  “dirty”
/mbriʔ/  “one kind of bird”
/mbe/  “bed”
/mbɛɾ/  “to cook”
/mbɛɾʔ/  “calf”
/mbes/  “broom”
/mbɭɛɾ/  “big leech”
/mbɾɛh/  “to stick tongue out”
/mbrus/  “spider”
/mba/  “ear-ring”
/mblɛɾ/  “to pretend”
/mblɐh/  “Wa dessert”
/mba/  “the top of thigh”
/* blak */
/* ba? */
/* bra? */
/* bla? */
/* blas */
/* blan */
/* bo */
/* bo? */
/* brom */
/* brog */
/* bro? */
/* boh */
/* broh */
/* boq */
/* bloq */
/* bia */
/* bias */
/* biam */
/* biu */
/* bluak */
/* bai */
/* bui */
/* bluan */
/* boi */
/* boi */

"to cut into two"
"tick"
"fast"
"part of ax"
"to unwrap"
"to overflow"
"to pulverize"
"to fill"
"water leech"
"horse"
"wound"
"to cry (animal)"
"to peel(skin)"
"to step up"
"tube"
"flat basket"
"sew"
"hip"
"gourd"
"bat"
"to bore"
"fittable"
"to take in mouth"
"tree’s shadow"
"to swing"
/t/  

/tis/  “mushroom”  
/tək/  “debt”  
/təʔ/  “hand”  
/teŋ/  “to throw a top”  
/te/  “sweet”  
/tuutek/  “to rub clothes”  
/tuuk/  “wardrobe”  
/təvut/  “minute”  
/təmiu/  “where”  
/tənum/  “anthill”  
/təŋa/  “twenty”  
/taʔ/  “grandfather”  
/taŋ/  “to weave”  
/təŋkrəʔ/  “road”  
/təŋskit/  “outdoor”  
/tuk/  “to lead (by hand)”  
/tus/  “to peck at”  
/to/  “to run”  
/top/  “classifier of measurement (wah)”  
/tot/  “to smoke”  
/tok/  “to start a fire”  
/tom/  “right”  
/tonŋ/  “to grill”  
/toh/  “sunlight”  
/tək/  “to sting”  
/toʔ/  “to give”
/tɔs/  "breast"
/tɔm/  "liver"
/tɔŋ/  "to fry"
/tiak/  "to discard"
/tai/  "skirt"
/taiʔ/  "vegetable"
/taih/  "to pound"
/tao/  "bottle"
/taoʔ/  "vapor"
/taŋ/  "to trap"
/tuasətɔŋ/  "shrimp"
/tuas/  "to cut strongly"

/tʰ/

/tʰiŋ/  "mother's elder sister"
/tʰiʔ/  "one"
/tʰiŋ/  "big"
/tʰe/  "arrow"
/tʰeʔ/  "to flip"
/tʰeʔ/  "to seep"
/tʰem/  "short"
/tʰum/  "ripe"
/tʰaʔ/  "tried"
/tʰu/  "hill"
/tʰup/  "to bash"
/tʰuk/  "to knock"
/tʰukkʰaʔ/  "difficult"
/θuŋ/  “to be relative”
/θuŋ/  “brass”
/θottit/  “to kick”
/θok/  “big bowl”
/θoʔ/  “pod”
/θom/  “to make a bed”
/θoŋtai/  “ghost”
/θoŋ/  “bag”
/θwak/  “to roast”
/θwah/  “supine”
/θai/  “Thai”
/θui/  “to keep”
/θiau/  “to dance”

/ʔd/

/ʔdip/  “cookies”
/ʔdeʔ/  “door handle”
/ʔdap/  “flat”
/ʔdak/  “tongue”
/ʔdaʔ/  “to pour water”
/ʔdus/  “part of gun”
/ʔdoc/  “lips”
/ʔdok/  “to recite”
/ʔdoh/  “to leak”
/ʔdom/  “to soak”
/ʔdɔŋ/  “root of plant”
/ʔdɔ/  “slope”
/ʔdɔŋ/  “valley”
/"diu/  "flashlight"
/"duat/  "to spurt"
/"doi/  "orphan"
/"doi/  "to squeeze"
/"dua/  "to crawl up"
/"duac/  "to massage"

/c/

/"ci?/  "flesh (baby language)"
/cece/  "to pinch"
/ceh/  "to scratch"
/cak/  "deer"
/cah/  "clothes"
/can/  "to hire"
/cueeh/  "water drop"
/cukluk/  "rounded tomato"
/cot/  "to push"
/co?/  "to put"
/ coy/  "parasal"
/coylo?/  "to cast"
/cos/  "to tamp"
/cop/  "to wear"
/cop te?/  "glove"
/cop kuat/  "sweter"
/cop ŋkian/  "ring"
/cos/  "to cut hair (men’s style)"
/ciat/  "the tenth son"
/cia/  "to tear"
/cao/  "it"
/coi/  "to turn"

/ch/

/ch\i/  "the index finger"
/ch\ic/  "to trample"
/ch\i?/  "to hew"
/ch\im/  "to taste"
/ch\en/  "heavy"
/ch\ep/  "to stitch"
/ch\u/  "elbow"
/ch\us/  "to skewer"
/ch\um/  "bean"
/ch\o?/  "wet"
/ch\a/  "poor"
/ch\aŋ/  "young (chicken)"
/ch\u/  "to do well"
/ch\ut/  "to pick up"
/ch\us/  "one kind of ant"
/ch\uŋ/  "to go up"
/ch\on/  "classifier of clothes"
/ch\iap/  "to blink"
/ch\ian/  "small cup-shaped cymbals"
/ch\iu/  "bad"
/ch\iu?/  "old"
/ch\wa?/  "to be left dangling"
/cʰwaʔpʰui/  "monk"
/cʰaoʔ/  "light"

/k/  "to cut off"
/kip/  "lion"
/kris/  "next"
/kesaʔ/  "anus"
/kre/  "East"
/krep/  "to carry on shoulder"
/klep/  "armpit"

/klec/  "classifier of corn"
/krec/  "testicle"
/kreʔ/  "to scratch"
/krem/  "acidulous"
/kren/  "hundred"
/ken/  "to sharpen"
/klep/  "paramour"
/krep/  "of"
/kreŋ/  "to perform"
/kɛ/  "to be stuck"
/kɛh/  "wind"
/kut/  "cackle"
/kɔ/  "hole"
/kɔtɛt/  "crab"
/kɔtai/  "egg"
/kɔtam/  "oven"
/katʰi/ “cotton”
/katʰiŋ/ “navel”
/katʰu/ “belly”
/katʰuak/ “sole”
/katʰuah/ “to roll”
/katʰuas/ “fire fragment”
/kəʔiːh/ “here”
/kəʔap/ “hornet”
/kəʔom/ “cloud, fog”
/kəʔoŋ/ “Job’s tears”
/kəʔuas/ “charcoal”
/kəʔuʔaʔ/ “scurf”
/kəma/ “sky”
/kəmuat/ “abscess”
/kəmuat/ “weevil”
/kənum/ “to thunder”
/kənom/ “gum”
/kənuaʔ/ “lazy”
/kəjoŋ/ “to lift eyebrow”
/kəjoŋ/ “bamboo basket”
/klə/ “tadpole”
/krəc/ “to fall”
/kləh/ “classifier of fire”
/kəŋ/ “mother’s elder brother”
/kap/ “chin”
/kat/ “thorn”
/krat/ “plastic”
/kak/ “branch”
/kraʔ/ “buffalo”
| /kaʔ/   | “fish”            |
| /kraʔ/  | “direction”       |
| /kah/   | “to untie”        |
| /kam/   | “chaff”           |
| /kanjeʔ/| “needle”          |
| /kaŋ/   | “paddy field”     |
| /kukiau/| “guava”           |
| /krukre/| “narrow”          |
| /klup/  | “to pour”         |
| /kluc/  | “unfit”           |
| /kuk/   | “to hang”         |
| /kuskus/| “to shove”        |
| /kum/   | “strip of bamboo” |
| /kop/   | “to shovel”       |
| /koc/   | “hot”             |
| /kok/   | “to call”         |
| /kroʔ/  | “to shoot”        |
| /koh/   | “to collect”      |
| /kroh/  | “to dry”          |
| /kom/   | “and”             |
| /krom/  | “to lug”          |
| /kloŋ/  | “bowl”            |
| /klɔ/   | “Northern Thai people” |
| /kok/   | “water container” |
| /krom/  | “boiled rice”     |
| /koŋmu/ | “pagoda”          |
| /klŋ/   | “brook”           |
| /kia/   | “to look at”      |
| /kiap/  | “to nip”          |
/kian/  “pigtail”
/kian/  “tamarind”
/kriaŋ/  “to spin”
/kai/  “thread”
/klaŋ/  “to push hair”
/kaiʔ/  “classifier of human, root plant”

/krai/  “drum”
/kao/  “ten”
/kraoʔ/  “taro”
/kaoŋ/  “to dig”
/kraoŋ/  “throat”
/kui/  “Lahu”
/kuat/  “cold (weather)”
/kruas/  “to shake off”
/kuan/  “child”
/kuan caŋ/  “to marry”
/koi/  “to have”
/kuai/  “one kind of rice”

/kh/

/khliŋ/  “to cut”
/khrit/  “to grate”
/khic/  “shy”
/khis/  “to peel”
/khispʰuaʔ/  “Adam’s apple”
/khih/  “to give a birth”


/kʰe/  "polluted water"
/kʰre/  "rosary"
/kʰet/  "to bite"
/kʰeʔ/  "moon, month, firewood"
/kʰum/  "to winnow"
/kʰrum/  "one kind of legumes"
/kʰamun/  "bread"
/kʰroh/  "to crash"
/kʰraŋ/  "to keep"
/kʰlap/  "to clap"
/kʰlaʔ/  "pants"
/kʰah/  "to torture"
/kʰrut/  "to pull"
/kʰuc/  "to extract"
/kʰuk/  "to buckle"
/kʰoc/  "to wash face"
/kʰok/  "to itch"
/kʰoh/  "to knock door"
/kʰom/  "tight"
/kʰon/  "one kind of plant"
/kʰlok/  "dimple"
/kʰiap/  "shoes"
/kʰliap/  "classifier of flower, orange"
/kʰiat/  "fan"
/kʰiuʔ/  "to vomit"
/kʰwa/  "to wrap"
/kʰluak/  "to cut hair"
| /kʰwan/ | "rat" |
| /kʰui/ | "slow" |
| /kʰuat/ | "old-aged" |
| /kʰuaʔ/ | "tree" |

| /ʔi/ | "the second daughter" |
| /ʔijuk/ | "to lift" |
| /ʔip/ | "the fifth daughter" |
| /ʔim/ | "alive" |
| /ʔec/ | "elder brother" |
| /ʔeʔ/ | "they" |
| /ʔem/ | "unripe" |
| /ʔen/ | "dung" |
| /ʔeʔʔ/ | "to eat medicine" |
| /ʔem/ | "husked rice" |
| /ʔəpaʔ/ | "bridge" |
| /ʔəpaŋ/ | "to inter" |
| /ʔəpon/ | "forty" |
| /ʔəpʰut/ | "spade" |
| /ʔəpʰweʔ/ | "sticky rice" |
| /ʔəpʰwan/ | "gong" |
| /ʔətah/ | "medicine, drug" |
| /ʔətʰen/ | "to pick together" |
| /ʔəke/ | "cucumber" |
| /ʔəkwec/ | "to tickle" |
"to talk"
"the day before yesterday"
"angry"
"Akha"
"to attach"
"to shake"
"tiger"
"to gossip"
"spleen"
"cross"
"door, Wa"
"window"
"tube"
"heart"
"a pod of corn"
"male, husband"
"to quarrel"
"foe"
"to dream"
"the only child"
"mermaid"
"food particle among the teeth"
"violet"
"sesame"
"seven"
"smooth"
"middle"
"grass"
"tortoise"
"forehead"
"excretions from skin"
"boat"
"fish net"
"to hug"
"to trim"
"cassia"
"far"
"to screw"
"robber"
"rainbow"
"I"
"to intend"
"bow"
"the third daughter"
"to crow"
"to bow head"
"mother’s younger sister"
"cooked rice"
"to stay"
"the eighth daughter"
"a pole for carrying loads across something"
"water"
"color"
/ʔοη/  "daughter in law"
/ʔοη/  "silent"
/ʔομ/  "to brood"
/ʔον/  "to wear"
/ʔia/  "chicken"
/ʔiat/  "small"
/ʔiac/  "to sleep"
/ʔiah/  "this"
/ʔiaŋ/  "to come back"
/ʔoi/  "to raise animal"
/ʔai/  "the first son"
/ʔao/  "to like"
/ʔaoʔ/  "to believe"
/ʔui/  "the seventh daughter"
/ʔuat/  "to scrub face"
/ʔuah/  "that"
/ʔoi/  "son in law"

/v/

/vi/  "to borrow"
/vis/  "to break"
/vih/  "bowl"
/ve/  "one kind of vegetable"
/vec/  "liver"
/veʔ/  "left"
/veh/  "to call at"
/νε/  “to stir”
/νεχ/  “to chip, to be broken (teeth)”
/νακνυν/  “to bend leg”
/ναŋcaŋ/  “mosquito net”
/νυτ�ατ/  “to shake”
/νυτ/  “to cross”
/νυκ/  “to hook”
/νυŋ/  “corn”
/νοŋνοτ/  “to rock cradle”
/νοŋ/  “curve”
/νιαŋ/  “to tie, classifier”
/νυαŋ/  “worm”
/νυαŋ/  “wide”

/ε/  

/fe/  “to wander”
/fofe/  “greedy”
/fa/  “sock”
/fαp/  “to yawn”
/fat/  “to trash”
/fαk/  “to turn face up”
/faʔ/  “monkey”
/faŋ/  “to open”
/fiak/  “dark”
/s/

/sip/
/sim/
/simʔup/
/siŋ/
/se/
/set/
/seʔ/
/seh/
/ses/
/seh/
/suʔŋuk/
/sapa/
/sapaʔ/
/səpao/
/səplag/
/səpboi/
/səpiæp/
/səpuan/
/sateʔ/
/satem/
/sataʔ/
/satun/

/sataʔi/
/satʰe/
/satʰeh/
/satʰui/

"to nibble"
"bird"
"star"
"cooked"
"the ninth son"
"to cut into slice"
"louse"
"South"
"to write"
"to sterilize"
"neck"
"to comb"
"cheek"
"cement"
"shoulder"
"dust"
"fit"
"frog"
"eight"
"nine"
"tail"
"to shove away with the foot"
"to wash clothes"
"nail"
"to excite"
"pole"
/sətʰu/  “grasshopper”
/sətʰuʔ/  “shaft”
/sətʰun/  “to lean”
/səʔke/  “hair decoration”
/səʔkat/  “comb”
/səʔkrak/  “red”
/səʔkaʔ/  “to mix”
/səʔkah/  “intelligent”
/səʔkup/  “to roll hair”
/səʔket/  “to freeze”
/səʔkru/  “river”
/səʔkrun/  “to kneel”
/səʔkiap/  “chopstick”
/səʔkiŋ/  “ginger”
/səʔkiu/  “intestines”
/səʔkiŋjuk/  “classifier of banana”
/səʔkʰoŋ/  “earthen jar”
/səʔʔaŋ/  “skeleton”
/səʔʔuŋ/  “snake”
/səʔʔoh/  “to dry”
/səʔʔom/  “rotten”
/səʔʔoi/  “smell”
/səʔvət/  “to punish”
/səʔvuk/  “sickle”
/səʔviak/  “skew”
/səʔma/  “to pickle”
/səʔmiuʔ/  “stone”
/səʔnut/  “gun”
/səʔnuu/  “teenager”
/sənutək/  "blood vessel"
/sərəʔ/  "sun, day, shell"
/səɾa/  "blue"
/səɾəʁu/  "yellow"
/səɾəʁua/  "green"
/səɾu/  "to steal a glance"
/səɾuʁaŋ/  "mirror"
/səɾe/  "gold"
/səɾuɾuʔ/  "to breath in"
/səɾaŋ/  "disgusting"
/səɾa/  "teacher"
/səɾəɾa/  "pebble"
/səɾəɾaʔ/  "drainage"
/səɾəɾaʔoʔ/  "new"
/səɾaʔ/  "grandchild"
/səɾaʔ/  "to have enough"
/sam/  "the third son"
/samkɾəʔ/  "skew-eyed"
/samʔəʔoʔ/  "to want"
/səɾaŋ/  "elephant"
/su/  "key"
/suʔ/  "cigarette"
/sup/  "seed"
/sok/  "dog"
/som/  "night"
/son/  "salt"
/səɾə/  "to wake"
/səɾt/  "to throw (spear)"
/səɾtəm/  "to eat"
/səɾtəmʔəm/  "to gaggle"
/siap/  “to repair”
/siát/  “animal’s bowel”
/sías/  “to cleave”
/siám/  “Shan people”
/suí/  “straight”
/sái/  “the fourth son”
/sáiʔ/  “sick”
/suat/  “to inject”

/h/  

/hɔ/  “bag”
/hɔm/  “to take a bath”
/hæc/  “hair”
/hæk/  “skin”
/hɑʔ/  “to burn”
/hap/  “auxiliary verb”
/huŋ/  “one kind of vegetable”
/hoc/  “to arrive”
/hok/  “to expose to (the weather)”
/hon/  “a lot of”
/hoŋ/  “one kind of insect”
/hɔ/  “Yunnanese chinese”
/hɔt/  “to kiss”
/hia/  “bee”
/hiat/  “to measure”
<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/hai/</td>
<td>&quot;past tense marker&quot;</td>
</tr>
<tr>
<td>/haoʔ/</td>
<td>&quot;to go&quot;</td>
</tr>
<tr>
<td>/haok/</td>
<td>&quot;to climb&quot;</td>
</tr>
<tr>
<td>/mprus/</td>
<td>&quot;old cobwebs&quot;</td>
</tr>
<tr>
<td>/mpʰec/</td>
<td>&quot;phlegm&quot;</td>
</tr>
<tr>
<td>/mpʰla/</td>
<td>&quot;to untie hair&quot;</td>
</tr>
<tr>
<td>/mpʰan/</td>
<td>&quot;breeze&quot;</td>
</tr>
<tr>
<td>/mpʰran/</td>
<td>&quot;spade&quot;</td>
</tr>
<tr>
<td>/mpʰuk/</td>
<td>&quot;dipper&quot;</td>
</tr>
<tr>
<td>/mpʰok/</td>
<td>&quot;to ride&quot;</td>
</tr>
<tr>
<td>/mpʰom/</td>
<td>&quot;to breath out&quot;</td>
</tr>
<tr>
<td>/mpʰoŋ/</td>
<td>&quot;fragrance&quot;</td>
</tr>
<tr>
<td>/mpʰrias/</td>
<td>&quot;to blow the candle&quot;</td>
</tr>
<tr>
<td>/mpʰiui/</td>
<td>&quot;adipose tissue&quot;</td>
</tr>
<tr>
<td>/mpʰai/</td>
<td>&quot;steel for grilling&quot;</td>
</tr>
<tr>
<td>/mpʰaiʔ/</td>
<td>&quot;cooking stove&quot;</td>
</tr>
<tr>
<td>/mpʰiau/</td>
<td>&quot;face&quot;</td>
</tr>
<tr>
<td>/mpʰuai/</td>
<td>&quot;to turn on (electricity)&quot;</td>
</tr>
<tr>
<td>/mi/</td>
<td>&quot;widow&quot;</td>
</tr>
<tr>
<td>/mec/</td>
<td>&quot;the eighth son&quot;</td>
</tr>
<tr>
<td>/meʔ/</td>
<td>&quot;he, she&quot;</td>
</tr>
<tr>
<td>/muʔ/</td>
<td>&quot;money&quot;</td>
</tr>
</tbody>
</table>
/mut/ “interest”
/muc/ “to swallow”
/muk/ “to chop”
/mus/ “nose”
/muŋ/ “to eat very much”
/makrunt/ “spicy”
/mat/ “smoke”
/mac/ “ant”
/ma/ “farm”
/mat/ “scar”
/mak/ “title name of fruit, vegetable”
/mam/ “to blow”
/man/ “fabric”
/majŋ/ “to ask”
/majŋkʰɔʔ/ “to enjoy”
/mu/ “to crawl”
/mus/ “to love”
/mun/ “powder”
/muŋ/ “a top”
/moʔ/ “to hide”
/mom/ “good”
/mom sənu/ “beautiful, handsome”
/mon/ “Khmu”
/moŋ/ “to cook in bamboo”
/mɔk/ “to sit”
/mɔh/ “yes”
/mɔm/ “to sit”
/mian/ “to press”
/miu/ “Hmong”
/miulut/ “acne”
/mui/ “cow”
/mua?/ “mother”
/muaŋ/ “toy”
/mai/ “nevus”
/mao?/ “string, rope”
/muat/ “Wa boiled rice”
/moi/ “hammer”
/mɔi/ “ax”
/miau/ “cat”

/mə/ “to keep in mouth”
/məui/ “to catch”
/məat/ “small insect”
/məʔ/ “garbage”
/mam/ “good, fresh, clean”
/məm/ “to listen”
/mək/ “hat”
/məic/ “sand”
"close"
"cassette"
"to sheer"
"pond"
"cover"
"blind"
"jail"
"to budge"
"pan"
"inch"
"to march"
"beam"
"chisel"
"chopping block"
"tree scraps"
"to whistle"
"meat"
"to carry in arm"
"umbrella"
"urine"
"father"
"year"
"jackfruit"
"expensive"
"rhizome of bamaoo"
"in"
"final particle"
/niap/  “to fold trouser leg”
/nua?/  “sour”
/nai/  “to spill”
/nao/  “lemon”
/nao?/  “chest”

/ŋ/  

/ŋe/  “comfortable”
/ŋen/  “mother’s friend”
/ŋam/  “blood”
/ŋan/  “to hang on neck”
/ŋon/  “to lull”

/ji/  

/ji/  “the second son”
/jin/  “one kind of ant”
/jinliat/  “uvula”
/jen/  “filament”
/jui/  “to rub skin”
/jui?/  “to drink”
/jius/  “to laugh”
/jat/  “to stretch leg”
/ja?/  “grandmother”
/ju/  “to glissade”
/ju?/  “to fell into a
/num/
/num ~ot/
/numa~n/
/nia~/
/nia? ~ep/
/nia~n/
/juai/
/juat/

/ŋ/

/ŋke?/
/ŋke? ~shom/
/ŋcles/
/ŋle~h/
/ŋkrac/
/ŋkla~/
/ŋka~n/
/ŋkr~
/ŋklup/
/ŋkrum/
/ŋkroc/
/ŋkon/
/ŋkr~k/
/ŋkr~m/
/ŋkr~n/
/ŋki~n/
/ŋkrai/
/ŋkaoʔ/  "milled rice"
/ŋkraoh/  "to jump"
/ŋkaoʔ/  "milled rice"
/ŋkuan/  "small knife"
/ŋkriuʔ/  "to retech, to belch"
/ŋkʰijun/  "chair, pillow"
/ŋkʰrep/  "scissors"
/ŋkʰus/  "mouth"
/ŋkʰruuŋ/  "to feel numb"
/ŋkʰrəŋ/  "screen"
/ŋkʰrac/  "to fall down (soil)"
/ŋkʰak/  "to spit"
/ŋkʰu/  "brain"
/ŋkʰup/  "scale of fish"
/ŋkʰruc/  "trigger"
/ŋkʰus/  "to topple"
/ŋkʰuŋ/  "mountain"
/ŋkʰon/  "cow"
/ŋkʰɔn/  "fertilizer"
/ŋkʰwa/  "box"
/ŋkʰuŋŋ/  "sheath"
/ŋkʰui/  "cockscomb"
/ŋkʰruat/  "zipper"
/ŋkʰriuk/  "changkol"
/ŋeʰih/  "to lull (a child) to sleep"
/ŋeʰem/  "to think"
/ŋeʰu/  "epoch"
/ŋeʰum/  "to plant"
/ŋu/ “to clutch”
/ŋu/ “oval”
/ŋu/ “to close”
/ŋu/ “a witch doctor”
/ŋu/ “chopstick”
/ŋu/ “to turn off”
/ŋu/ “spoon”
/ŋu/ “orange (fruit)”
/ŋu/ “to cut in one piece”
/ŋu/ “pickle bamboo”
/ŋu/ “short”
/ŋu/ “to nod”
/ŋu/ “intestinal worm”
/ŋu/ “morning”
/ŋu/ “price, proud”
/ŋu/ “to sit”
/ŋu/ “fire, classifier of firewood”
/ŋu/ “wheel”
/ŋu/ “in front of”
/ŋu/ “to stamp down”
/ŋu/ “to wait”
/ŋu/ “saliva”
/ŋu/ “the sixth son”
/ŋu/ “to itch”
/ŋu/ “eye”
/ŋu/ “sword”
/ŋu/ “to cough”
/ŋu/ “to wash rice”
<table>
<thead>
<tr>
<th>Sound</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ŋui/</td>
<td>&quot;the fifth son&quot;</td>
</tr>
<tr>
<td>/ŋoi/</td>
<td>&quot;destination&quot;</td>
</tr>
<tr>
<td>/ŋuai/</td>
<td>&quot;thirty&quot;</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>&quot;pregnant&quot;</td>
</tr>
<tr>
<td>/ŋe/</td>
<td>&quot;nail&quot;</td>
</tr>
<tr>
<td>/ŋem/</td>
<td>&quot;to please&quot;</td>
</tr>
<tr>
<td>/ŋa/</td>
<td>&quot;husked rice&quot;</td>
</tr>
<tr>
<td>/ŋoʔ/</td>
<td>&quot;dog mother&quot;</td>
</tr>
<tr>
<td>/ŋia/</td>
<td>&quot;fish smell&quot;</td>
</tr>
<tr>
<td>/ŋiak/</td>
<td>&quot;fragrant&quot;</td>
</tr>
<tr>
<td>/ŋoi/</td>
<td></td>
</tr>
<tr>
<td>/l/</td>
<td></td>
</tr>
<tr>
<td>/li/</td>
<td>&quot;book&quot;</td>
</tr>
<tr>
<td>/liŝo/</td>
<td>&quot;Lisu&quot;</td>
</tr>
<tr>
<td>/lip/</td>
<td>&quot;West&quot;</td>
</tr>
<tr>
<td>/let/</td>
<td>&quot;to lick&quot;</td>
</tr>
<tr>
<td>/les/</td>
<td>&quot;six&quot;</td>
</tr>
<tr>
<td>/leh/</td>
<td>&quot;the little finger&quot;</td>
</tr>
<tr>
<td>/luʔ/</td>
<td>&quot;to be broken, to be lost&quot;</td>
</tr>
<tr>
<td>/luʔm/</td>
<td>&quot;small boil&quot;</td>
</tr>
<tr>
<td>/loʔih/</td>
<td>&quot;today&quot;</td>
</tr>
<tr>
<td>/loʔak/</td>
<td>&quot;crow&quot;</td>
</tr>
<tr>
<td>/loʔuk/</td>
<td>&quot;flame&quot;</td>
</tr>
</tbody>
</table>
/lɔʔuʔ/  
“to crow”
/lɔʔaih/  
“sweat”
/ləmaʔ?/  
“sugar cane”
/ləŋ/  
“to pretend”
/ləŋ/  
“long”
/laumiŋ/  
“Burmese”
/luli/  
“naughty”
/lutlet/  
“one kind of cricket”
/luk/  
“sty”
/lukswk/  
“soldier”
/lukliak/  
“stubborn”
/luʔ/  
“inedible shell”
/lus/  
“to shove”
/luŋ/  
“flea”
/lɔk/  
“the seventh son”
/lɔklak/  
“to fold”
/lɔʔ/  
“speech”
/lɔm/  
“sharp”
/lɔŋ/  
“black”
/lɔli/  
“car”
/lɔkt疱h/  
“ladle”
/lɔkp疱/  
“how”
/lɔm/  
“to close (flower)”
/ləŋ/  
“cuffin”
/liak/  
“to turn”
/liuk/  
“pig”
/liuʔ/  
“out”
/lum/  
“one kind of bird”
/luak/  "knob"
/lai/  "rat (in forest)"
/lai/  "to keep (in jail)"
/laic/  "to relax"
/lai?/  "to swim"
/lui/  "three"
/luai/  
/
/l/  
/le?/  "rain"
/lat/  "to fear"
/lak/  "joke"
/la?/  "leaf"
/lungal/  "restless eyes"
/lok/  "boiled"
/lo?/  "bark"
/lon/  "tasteless rice"
/lon/  "to pave"
/lua/  "loosen"
/laoŋ/  "tall, North, above"

/r/  

/ri/  "to step down"
/ris/  "root"
/rəh/  "tense"
/ra/  "two"
/ras/  "foot"
/ru/  "top of leaves"
/ruc/  "one kind of bird"
/rus/  "heartwood of tree"
/ruj/  "horn"
/rok/  "to split"
/rokⁿ¹bung/  "to vow"
/rokruan/  "curled (hair)"
/ruhɔ/  "garlic"
/rian/  "industrious"
/ruak/  "to sing (bird)"
/ruan̂/  "light (noun)"
/ruj/  "a fly"

/t/  

/te/  "thin"
/rac/  "to abort"
/rag/  "tooth"
/ruc/  "to pull, to draw"
/rɔt/  "noisy"
/riam/  "steel"
/riu/  "to bark"
/j/

/jeʔ/  "the first daughter"
/jum/  "to cry"
/juŋ/  "to massage"
/jəp/  "classifier of clothes"
/jak/  "padlock"
/jah/  "to blossom"
/jaŋ/  "Karen"
/ju/  "to glissade"
/juh/  "to do, make, construct"
/juh taiʔ/  "to cook"
/jum/  "to die"
/jum pʰi/  "unconscious"
/junjaŋ/  "to shake tree"
/joc/  "to be drunk"
/jua/  "easy"
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