

# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

This thesis is a phonological description of Falam. Since Chin languages have rarely been studied by linguists in the past, a deep phonological study of Falam has not yet been done by any researcher. The Chin researchers, U Van Kyi (1992), U Than Bil lui (1993), Stephen Hre Kio (1999) and some other people have done a partial phonological description focusing on segmental phonology. Another deeper study in Chin is that of Andrea Gail Osburne in 1975, focussing on a transformational analysis of tone in the verb system of Zahao, a related Chin language. Because of the limits of the other studies, this thesis will mainly focus on a phonological description. This chapter introduces the origin of Falam and its location; the people; the language classification; a literature review; and the purpose, limitations, and methodology of this study.

### 1.1 Background information

This section provides brief information of the Chins, the origin of Falam and the people, the location, and the Falam language and its classification.

#### 1.1.1 The Chins

For more information, it would be good to look at a brief background of the Chins before going further to discuss the name Falam and the Falam. Some claim that the term "Chin" is an old Burmese word "Kyaing" which means "fellow, companion, friend" (Luce 1965). But there is no strong source to support this claim that the Burmese called the Chins fellows or companions or friends. Another interpretation of the term "Chin" is that it is a Burmese word used to denote the various hill tribes living in the country between Myanmar and the provinces of Assam and Bengal. In earlier times the name "Chin" was written and pronounced "Khyang". There is another term "Kuki" for Chin, an Assamese

or Bengali term, applied to various hill tribes, such as the Lusheis, Rangkhols, Thados, etc. The words “Kuki”, used in India, and “Chin”, used in Myanmar, are synonymous and are both used for many of the hill tribes. The name is not used by the tribes themselves, who use titles such as Zo or Yo and Sho (Gierison 1904:509-510). It is true that many of the Chins do not call themselves Chin but have different names such as Lai, Zo, Cho, and so on, even though all Chins have accepted the designation of themselves as Chins by other people. As a whole, the term “Chin” seems to be just the name given by other people to denote that they are hill tribes.

There is a historical background which tells that the Chins are originally from China. U Bawihu (1998:12) mentions in his thesis, “The name ‘Chin’ is not a given name to the people living in the hilly region by the Burmese, its name had already been there long time ago since the third century B.C; and it originated in China which is related to the Chin dynasty in China.” This information tells that the name “Chin” is not just a given name by the Burmese but the name of the people who came to settle in the region of Myanmar centuries ago. G. H. Luce (1965) puts the entry of the Chin into the general region of Myanmar somewhere between the fourth and the middle of the eighth centuries A.D. By looking at the apparent close linguistic relationship among the many Tibeto-Burman languages of Myanmar, Lehman (1965) states that “both hills and plains peoples have moved about within the central region of Southwest China and Southeast Asia over considerable distances for many centuries, and entered Myanmar from the north in 750 A.D.” It would seem that they all settled in the Lushai and Chin Hills some time during the last two centuries. This historical background is more reliable as many researchers have dated their entrance into Myanmar at this time.

Khoi Lam Thang (2000:3) in his paper<sup>1</sup> of Chin languages noted that the Chins entered Myanmar from the North in 800 A.D (Khen Za Sian 1999:322), and 850 A.D (Tuan khaw kham 1999:326). These people arrived in the Chin hills in A.D 1347 (Kip Thian Pau 1993:3, and Khen Za Sian 1999:326) and 1490-1510

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<sup>1</sup> Linguistics colloquia series 2000-01, Payap University Linguistics Department, Chiang Mai, Thailand.

(Bawihu 1998:27). The report of the District center of Chin State in 2004 estimated that the total population of Chin state was 503,083. Even though the time of entrance into Chin Hills is not clear, all of this information shows that the name "Chin" is not just a given name by the Burmese but the name of the people who came to settle in the region of Myanmar centuries ago.

### 1.1.2 The origin of Falam<sup>2</sup> and the people

Since there is a relationship between the name Falam and Taisun (Tashon), it is necessary to look at the origin of Tashons. The Tashons believe that their original parents stepped out of a solid rock. According to Bertram S. Carey (1932:142), "at Shunkla village there is a large rock<sup>3</sup>, and out of this the Tashons believe that a man and a woman came, who settled down close by and became the parents of those who are now called the Shunkla tribe proper." Though the people believe that they are indigenous according to their traditional belief, there is a historical record that the Taisuns are immigrants. The three brothers, Ralthang, Phurhlum, and Thuan Kai came to settle in the Chin Hills from Kalay valley. As they came across hill after hill, Phurhlum and Thuan Kai reached Lailun and they founded Lailun village<sup>4</sup>. Thuan Kai, who founded Lailun, had three sons and the eldest son was named Taisun, and his father let him found a new village, called Taisun<sup>5</sup> village. The Tashons call themselves Shunkla/Klashun after the name of the village (FCM 1992:10). Bertram S. Carey<sup>6</sup> (1932:142) records a reliable historical background:

About four generations ago the ancestors of the Shunklas of Falam migrated from Shunkla and founded Klashun, and at the same time another family also quitted the nest and flitted to Saiyo. They had hardly got comfortably settled down before the Haka chief Lien Norn, the great-grandfather of the present Chief Lyen Mo, attacked and destroyed both villages

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<sup>2</sup> Falam is thought to be English corruption of the original word "Fahlam" (U Tial Luai-personal interview; FCM 1992:9).

<sup>3</sup> This large rock is called Lailun, which many people believe according to tradition, was the origin of Chins.

<sup>4</sup> This Lailun village and Shunkla village were the same name of one village founded by Thuankai (near Shunkla there is a large rock, i.e., Lailun).

<sup>5</sup> This village, which was located near Cinmual ward of the present Falam town, does not exist anymore.

<sup>6</sup> He was British, an assistant commissioner in Burma, and a political officer in the Chin Hills.

and scattered the inhabitants, who for years lived in settlements as fugitives. However, in the course of time the Shunklas made their peace with the Hakas and returned to found a new village, which is the present Falam village. After the Shunklas had founded Falam they gradually brought all their neighbours, both relatives and aliens, under their control. The Siyins and other northerners call them "palamte" after their capital Falam. We have retained the name by which the tribe was known to the Burmans (Burmese), namely, "Tashon". This word is the Burmese corruption of "Klashun", the name of the village immediately west to Falam, which was made the capital of the tribe after it had left the parent village of Shunkla and before the present magnificent capital was founded. This village Klashun, or Tashon, was confiscated and demolished by us in 1892, when we occupied Falam and required materials to build us a post.

Not long after the occupation of the Falam village in March 13, 1892, the British government had decided to build a new camp at the place where the present Falam town is located, about three miles away from the old Falam village. The construction of a new camp was finished at the end of June in the same year and shifted there for security purposes. Later on the British government had given the new post the name "Falam" and the old Falam village was called Taisun village instead. This new camp, Falam, was made the center of regional administration and later it became the capital of the whole area of Falam.

There are twelve different tribes in the Falam Township. They are Laizo, Zahau, Sim, Hualngo, Ngawn, Bualkhua, Tapong, Zaniat, Khualsim, Lente, Hlawnceu, and Taisun. They believed that their forefathers are Ralthang (the forefather of Khualsim), Phurhlum (the forefather of Laizo and Zaniat), and Thuankhai (the forefather of Taisun, Hlawnceu, Zahau, and Sim). These tribal groups have their own dialects. According to Lai<sup>7</sup> legend (Chawn Kio 2006:31), the forefathers of Lais came to the Chin hills from the Shan country, Kabaw-Kale-Chindwin valleys. Their legends assert that their settlement in Chin Hills was due to the losing of their heritage, not to famine nor the oppression of any ruler. Another possible reason is the war between Shans and Burmese which may have caused political crises or famine. This legend supports that the twelve tribal

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<sup>7</sup> The Falams called themselves Lais. According to Chawn Kio (2006:34) Lai is used to refer to Falam, Hakha, Thantlang, and Matu.

groups in Falam area had migrated from the plains areas centuries ago. There are different beliefs of the route to the settlement of these twelve tribal groups in Falam Township. The forefathers of Hualngo, Ngawn, Bualkhaw, Lente and Tapong may have come to settle from different routes. Under a political leadership as one township, all of these twelve tribes mentioned above are considered as Falams. Thus, the name Falam represents the twelve tribal groups in the Falam township<sup>8</sup> and the name of the town as well.

According to the Ethnologue (Grimes 2005), there are 100,000 Falams in Myanmar (UBS 1991). This population includes 9,000 Tashon, 16,000 Zanniat, 7,000 Khualshim, 4,000 Lente, 14,400 Zahao, 18,600 Laizao (1983), 31,000 others. The township peace and development council report of 2004 says that the total population of Falam township is 72,110. Falam is also spoken in Bangladesh and India. The total population in all countries is 125,367.

Since the Falams are widely spread around the country it is suggested that there are more than the total population of speakers of the Falam township in the plains area, namely, Kalay township in Sagaing division. Other unaccounted for speakers of Falams are also found in various places over the country and even abroad.

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<sup>8</sup> Personal interview (U Tial Luai) and magazine (Falam Centennial Jubilee 1892-1992)

### 1.1.3 Location

Geographically, Falam is located in west Myanmar, in the central part of Chin state, as shown in the map of Myanmar in Figure 1 below:

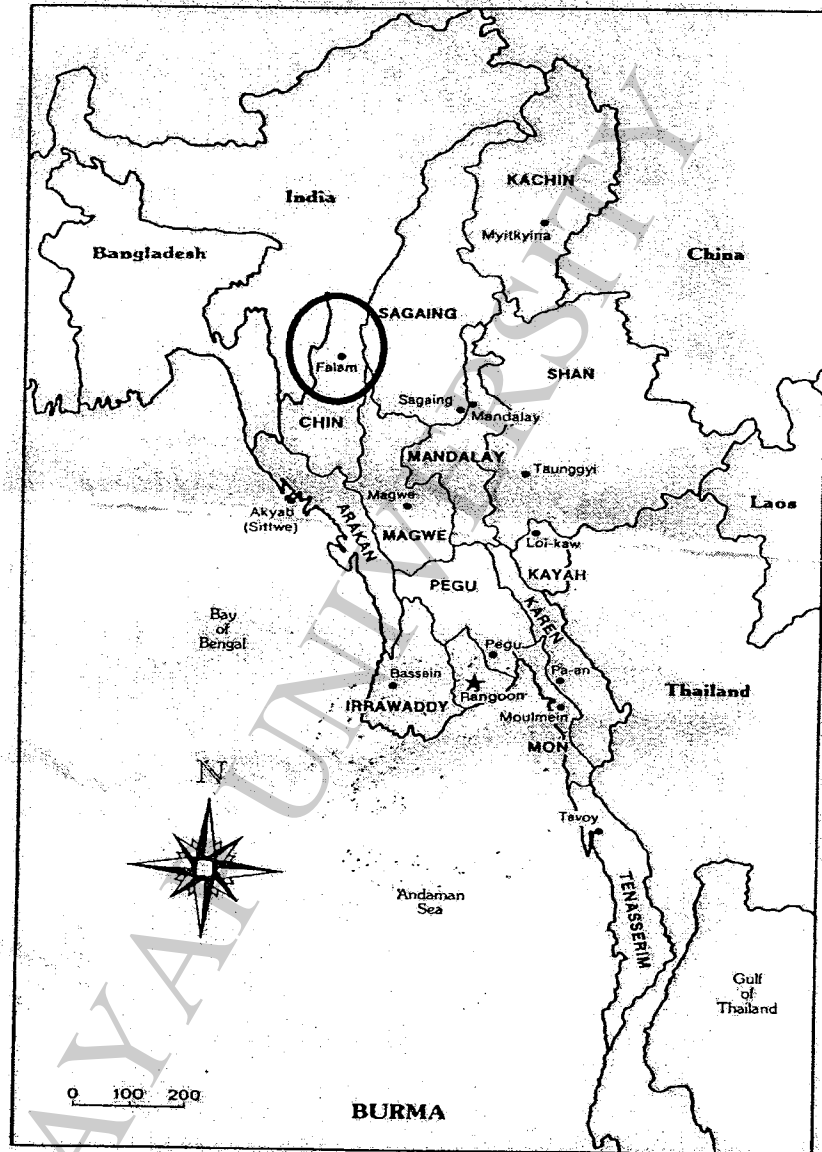


Figure 1. Map of Myanmar showing the location of Falam (Lehman, F.K. 1981)

Also the map in Figure 2. Language map of Falam displays the dialects of the twelve tribal groups in the Falam area.

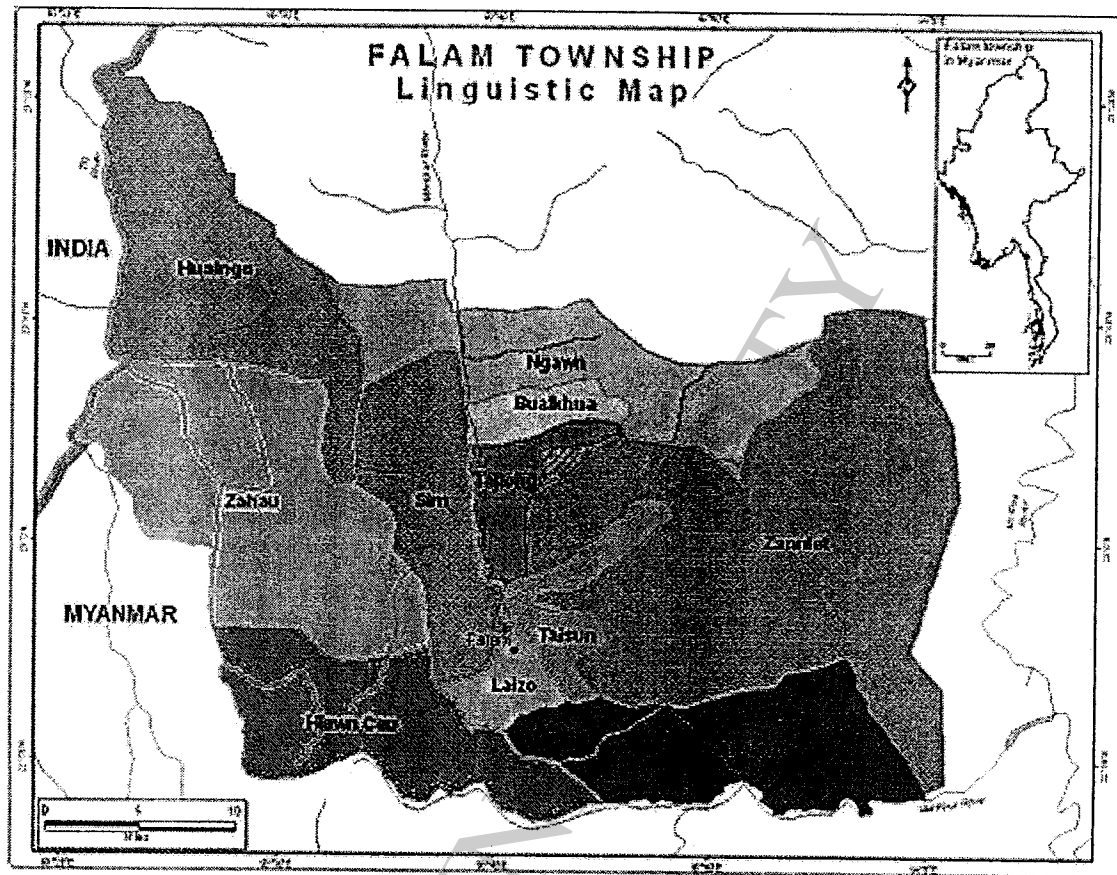


Figure 2. Language map of Falam (Eva Ujlakyova  
(SIL):2007)

### 1.2 The Falam language

As already mentioned in the previous section, there are twelve different dialects in the Falam township bearing the names of their tribal groups. Among them, Laizo was used for the official language or the common language of the town since the British colonial period. Evidence for this comes from a resolution made at a conference held in Maymyo in 1924 that one of the twelve dialects in the Falam Township, Laizo language, would be the language to be taught in the primary schools in the Chin Hills. Robert Johnson (1988:459) records, “It did,

however, decide that Laizo Chin was the language to be taught and English the second, with Burmese where desired.” After that time onward Laizo was taught in all primary schools in Falam Township until 1975. Gradually the Laizo language has become the common language for the Falam town and for the whole township. This common language had carried the name Laizo until the 1960s (e.g., “Laizo Bible”, “Laizo dialect”, etc)<sup>9</sup>.

After the 1960s, some Christian leaders proposed to change the name Laizo to Falam<sup>10</sup> so that the language could represent the language of the whole tribal community in the Falam Township. Kyon Bil<sup>11</sup>, one of the Christian leaders at that time, said that there was no formal meeting to decide the change of the name Laizo to Falam. As time passed on, the use of the name Laizo has diminished and people have been using the name Falam more and more for many years. Presently, Falam has become the lingua franca of the whole tribal community in Falam township and the name Laizo has been completely replaced by the name Falam (e.g., “Falam language”, “Falam Bible”, “Falam Christian songbook”, etc).

### 1.2.1 Classification of the language

Falam is one of the Kuki-chin languages, descended from the Sino-Tibetan (ST), Tibeto-Burman (TB) group, spoken primarily in and around Falam town in Chin state, Myanmar. Matisoff (2005:9) mentions that:

The Sino-Tibetan is one of the greatest language families in the world comprised of Sinitic (including Chinese, Tai-Kadai, and Hmong-Mien in extended view), and Tibeto-Burman. The Tibeto-Burman languages are the principal languages of the Himalayan region, spoken from Kashmir in the west, across the Himalayan and sub-Himalayan regions of India, Nepal, Bhutan, Bangladesh, Tibet and China, and into Southeast Asia across Burma, Thailand, Laos and Vietnam, including the great rivers such as Yangtze,

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<sup>9</sup> Cope, J.R. 1926. Chin reader in the Laizo dialect.

<sup>10</sup> The term “Falam” does not belong to any tribal group but is a geographical name used to represent the language of all the tribal groups in Falam township. Since the language is changing over time the language used in Falam town now has an increasing dialectal difference from Laizo.

<sup>11</sup> Personal interview in Yangon (March 2006).

Mekong, Salween, and Irrawaddy. As all the major language families of SEA, TB languages are overwhelmingly verb-final (SOV) in their clause-structure. The first TB group to arrive in what is now Myanmar (formerly called Burma) were probably the Karen. These were followed by the Pyu, and finally by the Burmans, who laid waste the Pyu capital of Sriksetra in the 8th century, ultimately causing the extinction of the Pyu as a people and the disappearance of the Pyu as the TB language family.

This statement of verb-final (SOV) structure supports the claim that Falam is also from the TB language family since it too is SOV. Among TB languages, the Kuki Chin language group is relatively cohesive, both geographically and linguistically, and has been intensively investigated by Shafer, who classifies it as part of Burmic. Benedict likewise links it to Burmese-Lolo<sup>12</sup>. However, Bradley (1975:26) suggests that “the Kuki Chin language group may be more appropriate to include as part of the adjacent SAL<sup>13</sup> or NORTH-EAST INDIA group by looking at their substantial lexical and morphosyntactic similarities. This SAL group has been linked geographically to Matisoff’s (2005:2, 26) Kamarupan<sup>14</sup> group. Linguistically the Kuki-Chin languages are characterised by tones, and extensive verb morphology involving tonal alternations and intensive suffixing with some prefixes. The basic word order is SOV.”

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<sup>12</sup> Lolo-Burmese is the TB branch spoken by 5 million speakers in Sichuan, Yunnan, and Guangxi in China.

<sup>13</sup> This subgroup was named by Burling (1998) from the distinctive etymon for ‘sun’ Sal found in most such languages.

<sup>14</sup> “Kamarupan” (from the Sanskrit word for Assam) is a geographical cover-term for the languages of NE India and W. Burma, the linguistic center of diversification of the TB family (Matisoff 2005:11).

Since the place of the Kuki-Chin language group among TB languages classified by Matisoff and Bradley have no big differences, only Matisoff's language classification will be displayed in Figure 3:

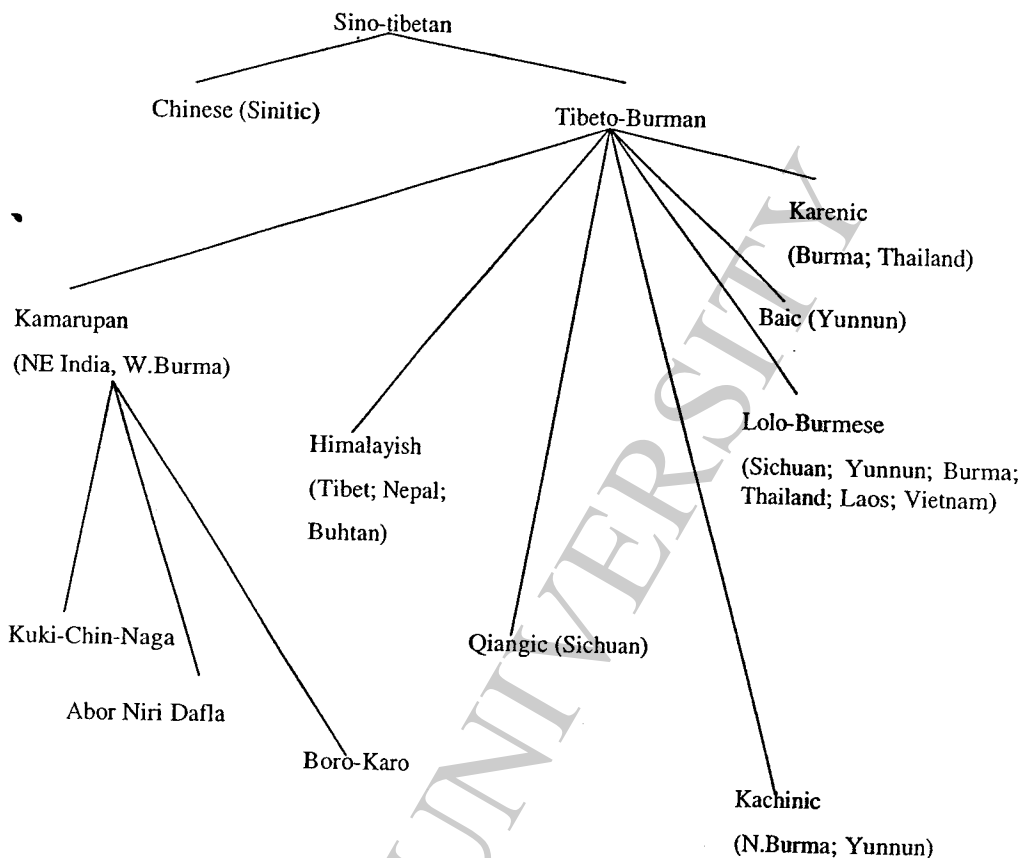


Figure 3. Sub-Groups of Tibeto-Burman (Matisoff, James A. 1991:481)

Within the Kuki-Chin-Naga group, Bradley (1975:4) classifies five main groups comprising Southern Naga, Old Kuki, Meitei, Chin and Other Chin groups. More specifically, he classifies the Chin language group into three groups, Northern Chin, Central Chin, and Southern Chin, giving a more detailed picture of the Chin languages at a lower level as in Figure 4:

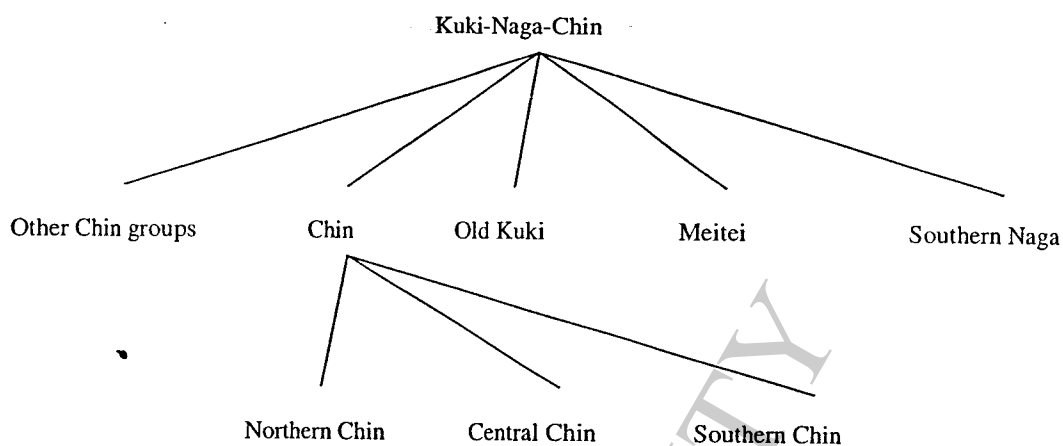


Figure 4. Main tree of Kuki-Chin- Naga including sub-groups of Chin (Bradley, David 1997:28).

Grimes (1996) also classified the Chin language group as: the Northern Chin group consisting of Ralte, Yos, Gangte, Siyin, Paite, Tedim, Thado, and Zome; the Central Chin group consisting of Haka, Baungshe, Thangthlang, Zokhua, Shonshe, Senthang, Tawr, Bawm, Lushai, Darlong, Aimol, Hmal, Mara, Purim, Falam, Zanniat, Tashon, Khualsim, Zahau, Lente, Ngawn, Beite, and Chiru; and the Southern Chin group consisting of Asho, Chinbon, Daai, Zotung, Mun, Khumi, Cho, and Mindat.

Again in Bradley's (1997) Chin language classification, Thado, Siyin, Paite, Vuite, Sukte, and Kamhau belong to Northern Chin group; Hualngo (Mizo), Falam, Laizo, Zahao, Taisun, Ngawn, Zaniat, Hakha, Zophei, Lawtu, Lailen, Senthang, and Tawr belong to Central Chin group; and Zolamnai, Welaung, Matu, M'kang, Ng'men, Nitu, Hngizung, Utpu, Chinbok, and Asho belong to Southern Chin group.

The reason for the different lists between Grimes and Bradley is not known. It might depend on the information they got from their language sources.

1.2.2 Proposed sub-classification of Falam

After looking at all Chin language classifications, this study turns to the internal classification of Falam. The languages that belong to the Falam group were mentioned already in Section 1.2. The classification of the language is based only on the author’s own knowledge as a native speaker of Falam because no specific research for language classification has been done yet in the Falam area. In language classification, one important thing that needs to be taken into consideration is that tribes and languages are not always identical but generally languages differ according to tribes. This analysis assumes that the twelve tribal groups in the Falam area have their own dialects and proposes the following classification by looking upon their general differences and similarities as in Figure 5:

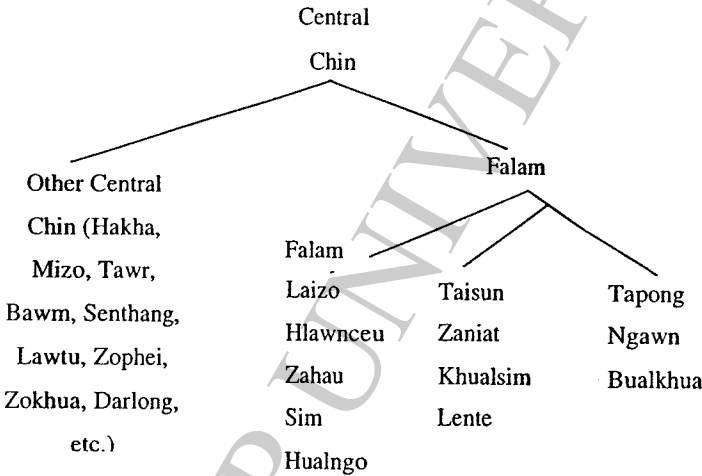


Figure 5. Proposed sub-classification of Falam

As seen in Figure 5, Laizo, Hlawnceu, Sim, Zahau and Hualngo are considered to be one group. Laizo, Hlawnceu, Sim, and Zahau are mutually intelligible. The intelligibility between Hualngo and the other four languages in this group might be low, but they still have a close relationship lexically and structurally. Among Hlawnceu tribes there are some villages which speak a different dialect closer to Hakha (Lai) one of the central Chin languages spoken in Hakha area. But most of the Hlawnceu speak a dialect similar to Laizo, Sim, and Zahau which can be

grouped together as one group. Since Laizo is the dialect chosen to be the common language of the people in the Falam area (nowadays known as the Falam language), this study could be called a description of Laizo dialect. This would be true if it were not for the fact that the language spoken in Falam town has been mixed with other dialects such as Sim, Zahau, and Hlawnceu, closely related to Laizo. Therefore this study is simply called a description of the Falam language.

This analysis proposes that Taisun, Zaniat, Khualsim, and Lente are closely related and classified into one group. Tapong, Bualkhua, and Ngawn are classified as another group. Bualkhua and Ngawn are mutually intelligible. U Kap Tial, in Falam Christian Centenary Magazine (2006:147), states that Bualkhua is one of the tribal groups of Ngawn. The intelligibility between Tapong and Ngawn or Bualkhua is not known clearly, yet this analyst believes that Tapong is appropriate to include in Ngawn and Bualkhua group.

### 1.3 Literature review

A partial study of some Chin languages has been done by linguists in the past few decades. But the Falam language has rarely been studied by linguists. A little information about linguistic study in Falam is found in *The linguistic tour to Chin Hills* written by G.H. Luce in 1954. In this linguistic tour, some dialects in Falam area were studied as Luce recorded on his short paper. The record says:

At Falam I met many old friends-Mr. Shiah Lwe, Mr. Lian Chin Thang, Mr. Sum Mang the school principal and Mr. Lal Bik the engineer. I shall always gratefully remember them as my first teachers of Chin in the days before the war. My old recordings, alas, were lost when the Japanese looted the University Library. So the work had to be done all over again. Dr. Stern, who is a keen anthropologist as well as linguist, spent a happy week at Lente, studying village conditions as well as the dialect, and made a fine collection of material culture. Dr. Henderson studied with Mr. Shiah Lwe the grammar of the Falam dialect of Taisun (Luce 1954:21)

As a result of their study, the only extant source we can rely on now is a short paper presented by Luce at an ordinary meeting of the Burma Research Society held on the 26 of July, 1956. In his paper, he includes a few general remarks about Chin languages and their relationship in terms of tones, finals, verbs, and

prefixes. Luce proposed four contrastive tones in Falam, such as mid falling, high level, high falling, and rising, but no further information on tone was available. No other helpful material on their studies is available because all data collected in Falam was lost as Luce (1956:22) mentioned in his paper:

When Dr. Stern rejoined us from Lente, we moved on north to Tiddim... We had to cut our luggage down to a minimum--a bedding roll apiece; and while we piled into one jeep, our luggage accompanied by two orderlies followed in another jeep. This led to a disaster which almost wrecked our whole project. Roads in these parts are one long series of hairpin bends. Rounding one of them, one of the bedding rolls must have fallen out without our orderlies noticing it. It was Dr. Henderson's and it contained all her materials laboriously recorded at Falam, which she intended to check at Tonzang...from that day to this nothing more was seen of Dr. Henderson's precious papers.

Some other helpful books on related languages to Falam used in this thesis are Mizo syntax (Lalnunthangi 1993), a descriptive analysis of two texts of Teddim Chin (Henderson 1965), and short papers of the related Chin languages. Besides these, there are some more helpful books, the four orthographical studies written by four different researchers, U Van Gyi (1993), Than Bil Luai (1993), Hre Kio (1999) and Sen Ro Sang (2004).

Among former researchers on Falam, there are no significant differences in their inventory of consonant phonemes but there are different findings of vowel phonemes. Not only the first researcher but also one who develop the Falam orthography, Dr. Cope proposed six different vowels, as mentioned by Bawihu (1998:201) in his thesis under the title of *The Source and Development of the Chin Writings*. The book notes, "the phonetics of the vowels" as shown in Table 1.

|           | Front | Central | Back |
|-----------|-------|---------|------|
| Close     | i:    |         | u:   |
| Close-mid | e:    |         |      |
| Open-mid  |       | ə:      | ɔ:   |
| Open      |       | a:      |      |

Table 1. Cope's phonetic vowels (Bawihu  
1998:201)

This inventory records phonetic vowels but no source is found of phonemic inventory though Cope used six vowels a, e, i, o, u, and aw in his Falam orthography. Another researcher U Van Kyi (1993) listed that there are nine phonetic vowels in Falam. And he also used six vowels a, e, i, u, o, and aw in his Falam orthographical recommendation. Table 2 presents Van Kyi's phonetic vowel inventory:

|           | Front | Central | Back |
|-----------|-------|---------|------|
| Close     |       | u       | u:   |
| Close-mid | e:    |         |      |
| Open-mid  | ɛ     | ə<br>ʌ  | ɔ:   |
| Open      |       | a:      | ɑ    |

Table 2. U Van Kyi's phonetic vowels (1993:3)

In terms of tone, Hre Kio (1993:103) mentions in his book of Falam Orthography that there are three contrastive tones in Falam. Than Bil Luai (1993:48) also mentions in his Falam Orthography studies, that there are 7-8 tones in Falam. But the two researchers did not do any further systematic studies on tone but only a hypothesis. A more systematic study on tone was done by U Van Kyi (1993:14) and he provides a brief description consisting of five contrastive tones: the high-level tone, high falling tone, low rising tone, low falling tone, and low-level stop tone. All of these native Falam researchers were mainly focused on

grammatical studies and word combination, not the phonological studies, yet they are helpful for this analysis.

The most helpful source for this study is a dissertation by Andrea Gail Osburne (1975) on *A transformational analysis of tone in the verb system of Zahao (Laizo) Chin*, one of the dialects spoken in the Falam area. The study presents many helpful insights into tone patterns, morphophonemic patterns, and the verb system. She demonstrated three distinctive tones in Zahao: low, high, and rising.

Theoretical studies in this analysis are applied from Burquest (2001), Hyman (1975; 1985), Chen (2000), Yip (2002), Mohanan (1986), Pike (1971;1977), Gudschinsky (1972), Smalley (1964), Philip A. Luelsdorff (1987), and many more. The authors focus on descriptive phonemics and generative phonology which will be applied for describing the morphophonemics and phonological processes.

#### **1.4 Goal of the study**

A Falam orthography which was developed by missionaries during the early part of the twentieth century is used extensively today, although it does not represent tone, an essential aspect of the language's phonology. In this traditional orthography, vowel length is indicated only when there is a homograph in a sentence which could make a reader confused. Certain characteristics of the orthography, such as how to represent an alveolar/dental distinction in stops, how to represent vowel length, and where to mark word boundaries are subject to ongoing debate. Introducing tone marks could be the next interesting issue for today and might be for the next generation. All these issues have made people, especially educated leaders, have a strong motivation for orthography review or reform. Therefore, the purpose of this thesis is to propose a phonological description, which will be helpful in reviewing the present orthographical issues.

#### **1.5 Limitations of the study**

This study is an initial description of the Falam sound system (phonology). It doesn't examine the relationship between the different varieties which mix

together to produce Falam. It does not attempt an explanation for the variations observed in verb forms.

## 1.6 Methodology

Most of the data used in this thesis consists of two parts: One is library-based data for theoretical studies and the other one is texts gathered from January through March 2006 in Falam. Five different texts and the SEA 436 wordlists were recorded on tape in Falam. A grammar questionnaire was also used for analysis. Several papers and magazines written in Falam were also collected. Since the author of this thesis is a native speaker of Falam, some data for the study is based on the author's own knowledge. The Falam Holy Bible is also one source of the data used in this thesis.

Wordlists recorded on the first data collection trip were transcribed and converted into a chart of consonants and vowels. A wordlist consisting of 436 words and a supplemental 58 item wordlist were used in this analysis. The texts recorded on tape were also transcribed and interlinearized in a notebook and later entered into a Word document and have been analyzed to be able to see the Falam sound patterns accurately. Syllable structure, segmental distribution, suprasegmental phenomena (tone, stress, and intonation) were analyzed. Praat<sup>15</sup>, a computerized program for phonetic analysis was used to identify the pitch contours of the tones. Insights were also gained from reading articles about other related Chin languages and from reviewing Yip's paper (2003) *Phonological markedness and allomorph selection in Zahao* and Osburne's (1975) *Transformational analysis of tone in verb system in Zahao*. Data collected during an additional data collection trip and was re-analyzed with the help of my advisors.

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<sup>15</sup> Praat program is developed by Paul Boersma and David Weenink <[www.praat.org](http://www.praat.org)>.